



An Coimisiún um
Rialáil Cumarsáide
Commission for
Communications Regulation

Regulated Wholesale Fixed Access Charges

Review of the Access Network Model
Annex 1 – Non-Confidential Submissions to
Consultation 20/101

NON-CONFIDENTIAL

Submissions to Consultation

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An Coimisiún um Rialáil Cumarsáide
Commission for Communications Regulation

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1: Alternative Operators in the Telecommunications Market (ALTO)

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alto

alternative operators in the communications market

**Consultation: Regulated Wholesale Fixed Access Charges -
Review of the Access Network Model and Price Control for PSTN
WLR - Ref: 20/101**

Submission By ALTO

Date: January 8 2021

ALTO is pleased to respond to the Consultation: Regulated Wholesale Fixed Access Charges – Review of the Access Network Model and Price Control for PSTN WLR – Ref: 20/101

ALTO welcomes this opportunity to comment on this important consultation and draft decision.

1. Preliminary Remarks

- 1.1 ALTO has been a strong advocate for the National Broadband Plan – NBP, and our members participation will be critical to the success of the program. However, we never anticipated that advocacy would be met with a proposal from ComReg that effectively asks ALTO members and its customer to pay a significant subsidy towards the roll out of the NBP.
- 1.2 ALTO members and the wider industry already invest very significant sums in systems integration with National Broadband Ireland – NBI, and strive to meet other significant demands placed on retail operators via NBI interconnection agreement. Apart from the fact that the proposal is clearly distortionary and contrary to European Commission Recommendations, it is also entirely unexpected and fundamentally unfair in a manner that may jeopardise the success of the NBP itself. This is a matter of deep concern for ALTO and the wider communications industry.
- 1.3 As an industry our role as investors is more challenging than ever, and predictability and certainty is completely absent on pricing decisions generally, and more pointedly on Fibre to the Cabinet – FTTC.

- 1.4 ALTO must remark that the time taken to complete formal procedural market reviews remains entirely unsatisfactory and coupled with the extraordinary financial performance of Eircom, industry calls for a change in approach to adjust what appears to be an ineffective application of the regulatory framework in order to properly benefit competition and in turn, the consumer. We make specific comments in relation to the Weighted Average Cost of Capital – WACC, below that we feel ComReg should take note of.
- 1.5 Furthermore, we note that on two occasions now the European Commission DG CNECT has required ComReg to take certain steps regarding WACC and the Copper Access Model – CAM. ComReg has an obligation to “*take utmost account of any Recommendation of the European Commission*” and yet when the Commission has urged ComReg to “*urgently*” update pricing models, nothing has occurred. This is also most unsatisfactory and has the effect of detracting from investment certainty in Ireland.
- 1.6 ALTO has significant concerns regarding the ability of the market to seek to recover losses from aspects of the regulatory regime that have been incorrectly deployed or delayed resulting in financial loss for undertakings on the market.

Below we set out remarks on discrete areas of the Consultation paper.

2. **Weighted Average Cost of Capital – WACC**

- 2.1 ALTO submits that ComReg appears to have conceded that if WACC was updated immediately, as was very clearly recommended by the European Commission, then the price would be even lower than the newly proposed lower prices.

- 2.2 This is an extraordinary admission and in particular given no justification whatsoever is given as to why Eircom should be allowed to continue to charge at a rate of 8.18% which is a rate of return ComReg clearly recognises to be excessive.
- 2.3 ALTO notes that an admission of this nature gives rise to quantifiable amounts that may form the subject matter of a later dispute, and ComReg has done this publicly. ComReg will undoubtedly be aware that recovery in this manner has a causal effect and impact on the recovery and profitability possibilities for wholesale operators on the market.
- 2.4 ALTO is also concerned that ComReg appear to be only updating the NGA and NGN models with WACC and not taking into account higher than expected demand and levels of efficiency on costs. This is important new information that has come to light and it needs to be properly considered. ALTO submits that by ComReg ignoring this, it will build and sow future inconsistency between ANM and NGA models. We suggest that this is would be an unsatisfactory outcome.

3. **Notional Commerciality**

- 3.1 ALTO notes that ComReg relies on some vague notion of “*commerciality*” to inform critical cost allocation decisions.

ComReg refers to three areas to inform this allocation process:

- (i) NBP-IA;
- (ii) Rural Commercial; and
- (iii) Urban Commercial

- 3.2 ALTO notes with concern that these area allocations are not economically defined markets determined on the basis of standard competition law market analysis. Rather they have been informed by a questionable link to ComReg Decision D11/18 where because ComReg considered the then existing Wholesale Line Rental – WLR, prices would not be sufficient to cover costs of the service going forward, it decided that shorter lines i.e., mainly FTTC should carry the entire burden of joint and common costs.
- 3.3 Under the current proposal ComReg states that the same situation should occur where the Commercial Areas recover all the joint and common costs with no contribution from the NBP-IA.
- 3.4 There are a number of serious issues with this approach:
- (a) ALTO submits that purposes of conducting an Access Network Review is precisely so ComReg can set “*commercial*” prices for all services. ComReg cannot and should not predetermine that an area is “*non-commercial*” and set an uncommercial price accordingly. There is nothing to prevent ComReg setting WLR and all the other services in the NBP-IA at the commercial level.
 - (b) ALTO notes that the price point that informed ComReg’s view in 2018 that lines beyond 3km were “*non-commercial*” relied on a cost model from the 2016 D03/16 Decision which was materially out of date then. Recalling that in July 2018 the European Commission urged ComReg to update that Revised CAM as soon as possible. ALTO submits that by continuing to rely on that price point more than two and half years later (and at least 3 years later) is clearly irrational and would constitute a very serious and significant error.
 - (c) ALTO submits that it is wrong for ComReg to suggest that the pole and duct prices in the NBP-IA are “*non-commercial*”

services. When NBI bid for the national broadband plan it factored in paying commercial prices for access to those services. The Government awarded the tender based on that assumption. ComReg is now saying the services are unable to command commercial prices when it a commercial operator signed a contract with the government on a business plan that assumed they would pay that price.

- (d) ALTO notes that by allocating all joint and common costs to Commercial areas, ComReg ignores that fact that common costs are in-fact scalable. The more lines an operator has, including all the lines in the NBP-IA, the higher your common costs are. The Access Network Model recognises this as a matter of course. Consequently, pushing all the common costs on to so-called Commercial lines results in a form of cross-subsidy from the Commercial area to the so-called non-commercial area. This does not appear to be a sensible approach to the matters at hand.
- (e) It is ALTO's view that the result of the proposed approach is that it drives proposed FTTC prices well above an efficient price level, contrary to ComReg's obligation to promote efficient investment and protect the rights of end users. A vastly inflated FTTC price will send incorrect "build or buy" signals to the market. This point should also be coupled with more recent pandemic demand for fibre resources at the consumer level. ComReg should reconsider its position on this more broadly.

4. **Repair and Maintenance**

- 4.1 ALTO notes with interest that Repair and Maintenance costs are allocated on a per line basis rather than a per footprint basis.

- 4.2 ComReg appear to exhibit remarkable inconsistency in their approach by doing this. As we note for common costs above ComReg allocation decision is entirely drive by whether a line is in the NBP-IA or the Commercial Areas, but when it comes to Repair and Maintenance costs ComReg takes entirely the opposite approach.
- 4.3 ComReg is aware that there are 3 to 4 times the level of faults on lines in the NBP-IA footprint, yet they require the Commercial footprints that have a fraction of those faults (particularly FTTC) to recover a sizeable portion of those rural fault occurrences.
- 4.4 The choices made by ComReg in both common and Repair and Maintenance cost allocations are entirely inconsistent and the choice made in both cases yet again drive one outcome – higher FTTC prices. ALTO submits that ComReg should address this as a matter of urgency.

5. **Deference to Eircom Planning**

- 5.1 ALTO notes that ComReg appears to have deferred to all of Eircom's claims i.e., they assume Eircom will roll-out FTTH in urban areas to 1.4m homes and in order to do this will have to replace 25% of poles in the next 5 years.
- 5.2 ALTO submits that as FTTH volumes will be relatively low in this period, the burden of those costs are picked up by FTTC customers. This is an absurd position. The investment is not being driven by FTTH if that ever happens at all, but FTTC and it is quite clear that customers must foot the bill.
- 5.3 ALTO believes that there is no possibility that 25% of poles will need to be replaced in urban areas. If that level of replacement is required it

just highlights the network was never maintained and Eircom should not be rewarded for that level of historical underinvestment.

6. **POTS MSANs**

- 6.1 ALTO is concerned by the recent initiative by Eircom to introduce POTS MSANs at local exchanges as the copper service winds down.
- 6.2 ComReg's recently based a key assumption in the FACO consultation that alternative BB access was available for operators to deploy VoIP so if ComReg consider its good enough for the rest of industry to use VoIP solutions over BB such raises questions as to why Eircom do not do the same and migrate their own and WLR customers to Standalone BB and VoIP rather than rolling out obsolescent technology in the form of POTs MSANs.
- 6.3 ALTO submits that surely rolling out old technology at such a late stage of a product lifecycle is not an efficient or modern solution. ComReg should not support such an approach.
- 6.4 ALTO is also concerned that the lack of an effective bulk migration facility for industry to bulk migrate its WLR base to VoIP is adding to Eircom's network inefficiency and they should be penalised for such. We note that the POTS MSAN solution is only in trial so maybe the trial will conclude its inefficient, however if it does not do so, ComReg should seriously question this initiative and whether such an investment is efficient given the availability of VoIP and the wind down of copper voice services.

2: BT Communications Ireland Limited

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BT Communications Ireland Ltd [“BT”] response to ComReg’s Consultation: Regulated Wholesale Fixed Access Charges

Review of the Access Network Model and Specification of the Price Control for Public Switched Telephone Network Wholesale Line Rental

Issue 1 – 8th January 2021

1.0 Introduction

We welcome the opportunity to comment to this consultation, however we have serious concerns as to the outcomes and in particular the SLU and FTTC prices which in our view appear inflated. We would like to address the following issues:

1. We are concerned with the series of events concerning FTTC prices. In the original BB consultation¹ prior to the BB Decisions D10/18 and D11/19 the proposed FTTC prices were significantly lower than the figures published in the final Decision. As part of the Article 7 process for D10/18 and D11/18 the European Commission urged ComReg to update its input data as soon as possible which we believe did not happen. For the WACC Decision of 2020 the European Commissions used uncharacteristically strong language to repeat its request for ComReg to update of the input data and we then note ComReg included text within the 2020 WACC Decision² to defer updating the WACC for BB FTTC services until the outcome of this consultation, potentially adding a further 18 months delay from the publication of WACC. Now we find in this consultation ComReg is changing various input parameters that have the effect of increasing the SLU price with the effect of raising the FTTC price to counter other reductions in the SLU/FTTC price. We find ComReg’s decision to move from a measure of lines capable of using FTTC to a general urban area definition to be wrong as such generalises a wider base some of which cannot achieve high VDSL bit rates and which are unlikely to be characterised correctly as there are still a lot of customers on CGA services so the FTTC performance has not been verified by live services. The consequence of all of this is the FTTC rental rate appears artificially inflated in our view.
2. We consider ComReg need to take a deeper looks at the cost allocation system as Eircom is still an integrated retail and access provider. A concern that needs to be addressed is whether the correct allocations are being made between the access and downstream businesses, and whether too much of the cost is being loaded into the access part of the business potentially leading to industry paying inflated wholesale prices. External customers using Eircom access invest in their own downstream system and is the balance of costs correct? Whilst the ComReg model provides details of the physical network costs etc. the

¹ ComReg Document Reference 16/96 issued 11/11/2016 - Market Reviews – Wholesale Local Access (WLA) provided at a Fixed Location – Wholesale Central Access (WCA) provided at a Fixed Location for Mass Market Products. Consultation and Draft Decision.

² ComReg Document Reference – 20/96 Decision 10/20 – Published 14 Oct 2020. Review of Weighted Average Cost of Capital (WACC) – Response to Consultation and Final Decision Mobile Telecommunications Fixed Line Telecommunications Broadcasting Transmission.

model is not in our view clear in explaining the details of the cost allocations of aspects such as order handling system costs or corporate overheads, although we note from the CEI consultation that corporate overheads will not be allocated in the NBP IA etc. An area of concern is how does the intermediate and commercial Managed Wholesale Services Part of Eircom fit within the model as it's clearly a downstream business but there is little visibility of how its separated from the access business and where are the costs being applied. Hence the ANM appears to provide a part of the picture but without more detail as to how the wider costs are allocated it's difficult to see the full picture.

3. We are concerned with the recent initiative by Eircom to introduce POTS MSANs as we are entering the winding down of copper services. ComReg recently based a key assumption in the FACO³ consultation that alternative BB access was available for operators to deploy VoIP. Notwithstanding that BT has serious concerns with the approach of merging the Fixed Access (FA) and Call Origination (CO) markets given one masks the other for the Three Criteria Test, if ComReg consider its good enough for the rest of industry to use VoIP solutions over BB such raises questions as to why Eircom don't do the same and plan to migrate WLR customers to Standalone BB and VoIP rather than rolling out obsolescent technology in the form of POTs MSANs. A far better approach would be for Eircom to announce plans for closing the copper network so that all the stakeholders can start planning – otherwise ad-hoc plans are developed as ComReg appears to be doing by assuming a 2025 point for no new copper sales. Surely rolling out old technology at such a late stage of a products life is not an efficient or modern solution. We note that the MSAN solution is only in trial so maybe the trial will conclude its inefficient, however if it does not ComReg should seriously question this initiative and whether it's efficient when other more modern and longer-term options are available.
4. FTTH Connection Charges. Now that the FTTH market is growing rapidly we consider its time for ComReg to remove the artificial migration pricing barrier to customer switching. We know from the FTTC market that switching can be affected for only a few Euros per instance whereas ComReg has made the FTTH connection and Migration charges the same. Given the market is now established and growing rapidly the barrier to switching should be removed as such is becoming a barrier to competition in that customers should not be obstructed from changing provider. Given ComReg's own analysis suggests that customers will stay with a provider for 42 months (3.5yrs) there is ample opportunity to recover the connection costs. Even if the 42 months is not taken, the European Commission's rules including the new EECC allows operators to use 24month customer contracts and these can also be used to help protect the connection investment. In our view the migration charges should be aligned with their costs. ComReg should allow the recovery of part of the connection costs through rentals as originally proposed by ComReg in Consultation 16/96 – See Reference 1 to this document.

³ ComReg Document Reference 20/46 issues 17/06/2020 - Market Reviews Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non-residential Customers Wholesale Fixed Access and Call Origination Consultation and Draft Decision.

2.0 Response to ComReg's Detailed Questions

Q1. Do you agree with ComReg's preliminary view that the price control obligation for PSTN WLR in the Regional Low-Level FACO Market should be based on cost orientation? Please provide reasons for your response.

BT Response

We agree with ComReg's preliminary view that the price control obligation for PSTN WLR in the Regional Low-Level FACO Market should be based on cost orientation for the following reasons:

1. The Regional Low FACO market lacks appropriate alternative fixed access which creates a dependency within the wholesale market for others to use Eircom Low-Level FACO product.
2. We found over many years that the retail-minus price control became ineffective and was complicated as it was based on a stand-alone price whereas the market had moved to a bundled approach. We therefore consider cost orientation to be correct to provide pricing predictability to allow investment by downstream operators.

Q2. Do you agree with ComReg's preliminary view that the monthly charge for PSTN WLR in the Regional Low-Level FACO Market should be set using the TD FAC approach based on Eircom's HCAs for the copper loop component and a BULRAIC+ approach for the active equipment? Please provide reasons for your response.

BT Response

We would like to make the following additional comments to this.

1. As ComReg indicate the TD approach can mask inefficient costs and operation and there is little transparency whether the input cost components are efficient. For example it's no surprise that storms hit Ireland and whilst some storms may be stronger than others, responsible maintenance of assets act to minimise the impact of storms and ultimately the costs as planned maintenance will be more efficient. We are concerned that there is little transparency in this matter and whether maintenance is being managed efficiently, for example the pole maintenance and replacement programme needs to be considered in a lot more depth in our view. We note the model has a considerable uplift in costs for 2020 to 2024 and such raises questions as to why the costs are suddenly so high when the pole network should have been maintained over the past. We consider ComReg need to investigate whether this sudden jump in costs is to do with maintenance catch-up or new roll-out/upgrade. Whereas new roll-out maybe justified for new routes, planned maintenance should have been carried out over the years for efficiency so are the current costs efficient? Without further information we can't say, but what is clear is more detail is needed as inefficient operation should not be rewarded. In this respect we consider ComReg should further review what is happening with the duct/pole costs to ensure the costs are efficient rather than just accepting the inputs.

Q3. Do you agree with ComReg’s preliminary view that the monthly supplemental charge for POTS based FTTC in the Regional Low-Level FACO Market should be set using the TD FAC approach based on Eircom’s HCAs for the incremental copper access component and a BU-LRAIC+ approach for the active equipment? Please provide reasons for your response

BT Response

We agree the existence of legacy broadband and FTTC play a role in this costing particularly as some exchanges are likely to have these services. These services utilise the same copper (either all the way from the exchange in the case of EVDSL or part of the way as for cabinet based CVDSL) as the voice service and hence in these locations not all costs or allocations should be applied to the PSTN service.

Q4. Do you agree with the assumptions and approaches used to model demand in the Service Demand module? Please provide reasons for your response

BT Response

The overview of the cost modelling from the start of section 5 to the location of question 4 is extremely wide in scope and apparently based on many variables which are based on forecasts representing significant expected changes to the market. At a top level the various modules look logical and provide a framework to base the model however it is difficult for us to understand what is happening at the detailed layer. An issue for us is the substantial assumptions being made and given they are largely in the future it’s difficult to know whether they are right or wrong. We will address some of these shortly.

Separately we are concerned with the slow rate at which ComReg is updating its financial data which has been highlighted by comments from the European Commission (see clause 5.7 of this consultation) in both the 2018 Broadband Decisions D10/18 and D11/18 and more recently for the WACC Decision. We note the EC language was uncharacteristically strong, and at that time the D10/18 and D11/18 request to update the data had still not taken place. We share the frustration of the European Commission in this matter, and if this problem is to continue then we cannot see the proposed new model keeping track of a fast-changing environment which will be to the detriment of the industry and end customers. Please note we are not blaming the existing finance team, but question whether it has been given enough resource to address a market that is evolving quickly at this time. If ComReg requires more finance people then it should start to build up the team.

Comments to specific Assumptions

1. Whilst we would agree with ComReg in clause 5.40 that the copper services will eventually be retired and cease to be available the communication and engagement from Eircom for a copper switch-off date has not yet occurred. Hence whilst we can understand that ComReg is modelling the 2025 date, this is merely a line in the sand and the longer the delay in announcing the switch-off the more difficult it will be for the industry to plan for such a situation and any migration approaches that will be required. We note other countries are looking at a percentage threshold of fibre roll-out before commencing no new copper supply and further roll-out conditions before existing copper services can be switched off.
2. SIRO and alternative network availability. The concept of SIRO availability being determined on the existence of one active SIRO line within an exchange area is just wrong. We make the following observations to support this view. The first is when you look at the SIRO roll-out

(say in Kilkenny) it's clear it's not ubiquitous and a quick line test of a local address on the SIRO address checker proves the point. Given the extensive civil engineering required (including laying new footway boxes, duct etc) logic would suggest SIRO will deploy to the most financially viable and achievable parts of an exchange area first and it's not clear that a full deployment will be commercially viable. Hence ComReg should work on real deployment figures in the model and not assumptions of 50% coverage etc. Real figures should be available to ComReg which already has access to homes connected through its Statutory Information Requests each quarter.

3. We note clause 5.39 assumes for NBI that the fibre service is available in each exchange footprint, the Service Demand module assumes that all premises in that exchange-footprint can avail of fibre services. We believe ComReg should have better information than to make assumptions here. Also, we note NBI will be required to make in-fill deployments hence we assume that the NBI IA network will only be able to provide to the localised in-fill area which is unlikely to be the whole exchange area. The NBP State Aid does not cover the wider commercial area so the assumption needs to be clarified. Currently we do not know the separate commercial intentions for NBI deployment within commercial area, but we do know that State Aid cannot apply in locations where services have been commercially deployed
4. Service Take Up – We note that an interesting statement was made by the CEO of Eircom at the Oireachtas session of the 2nd December 2020 that Eircom will now spend some 150m Euro strengthening its 4G coverage within the NBP IA. This is a significant investment and should bring far better data coverage to the NBP IA. Given the reduced density nature of the NBP IA one would expect the service to perform well and such could impact the take up of the NBI propositions as many end users may not be prepared to rent both 4G and fibre. Clearly there are benefits of fibre, however 4G could impact the fibre market.

In summary we agree with the framework proposed by ComReg but given some of the substantial assumptions such as copper switch-off are no more than best estimates at this time given the lack of any copper switch-off announcement, the model is a best estimate only. Experience also tells us that forecasts can wildly change as more information comes to light hence the key to making this model work is to keep it up to date at least annually so that changes can be factored in. The market is entering a huge period of change and given the importance of the modelling it's important ComReg provide the resource to keep this model up to date.

Q5. Do you agree with ComReg's preliminary views that the Geospatial module is appropriate for dimensioning the access network (copper and fibre) of a HEO with Eircom's network presence in Ireland? Please provide reasons for your response.

BT Response

At a high level we generally agree with ComReg's preliminary views that the Geospatial module is appropriate for dimensioning the access network (copper and fibre) of a HEO with Eircom's network presence however we have not been able to analyse the detail. The logic of the approach makes sense and there is a similarity with the previous models developed by/for ComReg.

We are not totally sure about some of the numbers in table 10 as we believe historically two pair copper would be delivered to the customer premises given the need for a spare pair in the case of faults or to provide a second line. Also, not clear is how many tubes are available in the sub-duct in

table 10. We assume Eircom use triple tube subduct but note Eircom is offering single tube to CEI operators for duct services.

We find it concerning that ComReg is able to attain a considerable level of high quality information about the Eircom network, yet the low quality of information provided within the CEI Passive Access Records as part of the duct and pole CEI access product suggests that it would have taken ComReg years to achieve sufficient data to run the proposed model. This suggests that far better-quality information is available within Eircom than is provided through PARs. It would be helpful to both the industry and competition for ComReg to declare the actual systems, if not already done, that sourced this high-quality information so that industry could reasonably request such for the Duct and Pole CEI products.

Q6. Do you agree that the approaches to modelling costs in the Opex module are appropriate? Please provide reasons for your response

BT Response

We are concerned the commercial industry is effectively being made to cross subsidise the costs of the NBP IA without the agreement of the industry. The State has approved the subsidy for the Intervention Area, and it is inappropriate that ComReg should now make the industry further cross-subsidise this investment, particularly as such was never sought of the industry or approved by the industry. We disagree with this approach.

We are also concerned that the top-level margins being achieved by Eircom appear excessive and we suggest ComReg should look to understand in more detail whether the top-level margins are aligning with the regulatory framework, and if not why. We believe the Oxera⁴ work (the report for 2014/15 is referenced although the others are available on the ComReg website) sponsored by ComReg for the five ComReg USO Decisions would be helpful, and we believe informative, in helping ComReg to understand whether Eircom is over-recovering margin and whether other changes are required.

Q7. Do you agree with ComReg's preliminary views that the costing approaches adopted in the Capex module are appropriate? Please provide reasons for your response.

BT Response

We have several concerns in this aspect of the consultation as follows:

1. We note in clause 5.172 that Eircom did not provide a capital investment forecast for its copper access network hence ComReg assumed that capital investment will be 50% of the 2019 figure. This appears to be little more than an educated guess and for something that is so important this does not meet the appropriate standard in our view. Given the difficult discussion the industry has had with Eircom this year about defining what copper is available, we believe there is no intention of Eircom deploying new network copper other than for jumpers and drop wires hence the 50% estimate by ComReg appears too high. We are aware there is no mention or formal announcement by Eircom to any of the industry groups of an end of sale date for copper services or a withdrawal of copper date. Indeed

⁴ ComReg Document Reference 19/40c – Oxera Unfair Burden Report 2014/15 – Final Report – Prepared for Commission for Communications Regulation 14 March 2018.

concern is growing the copper will be kept in service to keep the ducts full to avoid other operators using the space for CEI. Irrespective of this speculation it is reasonable that such major event should be signposted properly to the regulator and the industry at least five years out so that all the stakeholders can plan for the transition. For the regulator to be forced into guessing such a key market transition runs the risk of incorrect price control regulation being applied. It is therefore welcome in 5.174 that ComReg is going to monitor the copper situation.

2. We are concerned that in 5.176 ComReg indicate Eircom did not provide the information requested by Eircom within a Section 13D (1) requests. We note that in past years ComReg has fined operators for the failure to provide information and it's not clear why this did not happen here and suggests an unequal treatment of Eircom in terms of the penalties for not completing 13Ds. We note footnote 107 of the consultation and find it strange that the MSAN product which is now being trialled on live services was not costed given Eircom's focus on cost reduction.

In Summary whilst we agree with the framework we have serious concerns with some of the assumptions that are being made that appear at best a rough estimate in the absence of information and we have lingering concerns as to whether the data is all up to date.

Q8. Do you agree with ComReg's preliminary view that the assumptions made around FTTH connection costs in the ANM are appropriate? Please provide reasons for your response.

BT Response

We will leave this question to others closer to this aspect of the market.

Q9. Do you agree with ComReg's preliminary views that the price for PSTN WLR should be based on a price per year for each year of the price control period based on the ANM modelled outputs for that year? Please provide reasons for your response.

BT Response

Non-Copper Costs Issue

With respect to the active costs that contribute to the PSTN WLR costing model we see Eircom is currently engaged in an active trial to potentially re-invest in the POTS services by deploying MSANs and all the associated migration costs etc. We are somewhat surprised that Eircom would seek to expend what could be a significant cost and resource to modernise the POTS service when the expectation, as highlighted by ComReg in this consultation, is for the POTS service to start closing in 2025 with a complete copper withdrawal to follow. The POTS MSAN deployment is more surprising as ComReg in its FACO draft Decision is proposing to relax regulation in urban areas given the availability of alternative access methods for the supply of Voice. These alternatives are also clearly available to Eircom hence we question the intention for a new deployment of old technology when new technology could have been used for a far more efficient outcome. Hence we question whether the MSAN deployment of a POTS only solution is an efficient.

Per Anum Approach to PSTN WLR pricing

We agree with ComReg's preliminary views that the price for PSTN WLR should be based on a price per year for each year of the price control period based on the ANM modelled outputs for that year. Provided ComReg can obtain accurate and up to date information we would prefer for a per year view.

Q10. Do you agree with ComReg's preliminary views that the supplemental charge for POTS based FTTC should be based on the incremental costs, using the same approach as for PSTN WLR? Please provide reasons for your response.

BT Response

-

Q11. Do you agree with ComReg's preliminary views that the prices for LLU and SLU should be derived based on the Urban Commercial Footprint and set by way of maximum prices (rather than the existing price points) as set out in Section 7? Please provide reasons for your response.

BT Response

We disagree with ComReg's analysis for SLU as such creates wide price variations and ignores the limitations of the technology. We consider for ComReg to say they are max prices is unhelpful, as the obvious will happen, and prices will rise given to the years of problems we have had trying to make all LLU prices workable. We are continually concerned with ComReg references back to the 2018 Decision which we know from the European Commission comments was made on old data. In our view the prices should remain unchanged during this price control period given the legacy nature of LLU and the importance of the SLU price to the FTTC pricing given it's a cost input to that service.

Q12. Do you agree with ComReg's preliminary views that the maximum monthly charge for Dark Fibre should be based on fibre costs associated with Leased Lines access? Please provide reasons for your response.

BT Response

We note the highly limited nature of this service, i.e. where there is no duct capacity available and acknowledge the pricing approach proposed.

Q13. Do you agree with ComReg's preliminary view that the average monthly rental charge for CG SABB should be updated to reflect costs in the Regional WCA Market as well as to provide separate monthly rental prices for Regional and National Handover based on the maximum rates shown in Table 15 in Section 7? Please provide reasons for your response.

BT Response

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Q14. Do you agree with ComReg’s preliminary view that the monthly rental charge for Line Share should be updated to reflect the latest available cost information resulting in a charge of no more than €0.62 per month? Please provide reasons for your response.

BT Response

We agree with ComReg’s preliminary view that the monthly rental charge for Line Share should be updated to reflect the latest available cost information. Given the small incremental costs of adding Line Share to a PSTN line we agree with the order handling and billing costs represented by ComReg, however we would dispute the pair gain removal costs. We would note pair gain systems would have occasionally been used rather than on all lines and the cost of removing them should have been split over all copper broadband services rather than just LLU as all BB other than FTTH would have required this. Also, LLU was largely rolled out prior to NGA i.e. prior to the 2013 launch of VDSL NGA so the costs should have been over recovered by this time. ComReg should remove this charge from the LLU cost.

Q15. Do you agree with ComReg’s preliminary views that the price for FTTC based services should be updated in line with the approach at paragraph 6.82? Please provide reasons for your response.

BT Response

1. We do not accept the approach to the rise of the SLU price as the technology still limits the distance for viable VDSL services to circa 1.6km and at the maximum distance the service is more aligned with ADSL and should no longer be considered as NGA at that point.
2. Whilst we can accept that the cost categories that applied to the 2018 Decision may still apply we cannot accept that the actual values within those categories should just be plugged into the new model. We would expect that some of the 2016 figures will have been used in the 2018 Decision which would have likely been based on data from 2014 and 2015. In our view this data for cost inputs is too old to be used. We are also aware of substantial cost reductions within Eircom in the recent 5yrs so using old data risk overstating Eircom’s costs.

In summary we generally agree with the cost categories, but we don’t agree with using 2018 data that we believe was either from the 2016 Decision or based on inputs from the 2016 Decision that were likely derived from 2014 and 2015 data. We also don’t agree with the substantial increase in the SLU prices as such goes against science. I.e. there are technical distance limitations to the VDSL product and to move away from such into a type of averaging approach is wrong. The ComReg change of approach has a substantial impact on the overall cost of the VDSL services given the large volumes involved and this warrants further work. The failure of ComReg to trigger the reduction of FTTC pricing within the WACC Decision and the new approach within this consultation largely negates the WACC rate reduction. Commentators could think the pricing of FTTC is being held artificially high which is to the detriment of competition and end users.

Q16. Do you agree with ComReg’s preliminary views that the price for CG Bitstream services should be updated in line with paragraph 6.86? Please provide reasons for your response.

BT Response

We agree with ComReg’s preliminary views that the price for CG Bitstream services should be updated in line with paragraph 6.86. We agree with ComReg’s analysis and consider CGA has

become the legacy broadband market and ComReg's published Quarter Market Report data supports the substantial migration from current generation bitstream to NGA FTTC/FTTH. We also agree that for roll-out and technical reasons it's not possible for all customers to have the opportunity to migrate to NGA FTTC and FTTH, so CGA services whilst declining in numbers will still be around for many years and at least at the end of this price control period. We agree that the updated WACC should apply as this addresses the wider economic environment and the prices should change in line with those proposed in Table 16.

Q17. Having outlined ComReg's initial assessment of relevant factors for the costs associated with connections and migrations, do you consider that they are relevant and complete? Do you consider that any other factors are relevant? In response please provide well justified reasons and provide data to assist in ComReg's consideration of this matter

BT Response

We welcome that ComReg has provided the opportunity for us to review the proposals which are extensive and complex. However we consider the following factors are also relevant.

1. WLR and VoIP – We are concerned at the lack of an announcement from Eircom for the withdrawal of copper supply and secondly its actual withdrawal. In the absence of clarity from Eircom we can understand that ComReg has considered market trends and what is happening elsewhere to help estimate a cut-off of 2025 for Copper non-supply, but we would caution that this is an educated guess and ComReg certainly need to keep its options open in this matter.
2. WLR pricing and the Margin Squeezing of VoIP. We consider that VoIP is highly vulnerable to Margin Squeeze until it reaches critical mass and we ask that ComReg also carefully consider and apply an MST for the pricing relationships of Standalone FTTC with VoIP vs FTTC with WLR pricings. We are already concerned that there are obstacles to migrate from the WLR to VoIP within the FACO market as described in our response to the recent ComReg FACO consultation hence we ask that ComReg's pricing does not add to these problems.

Q18. Do you have any views as to the market impact of the existing FTTH connection and migration charges on the potential competition problems that ComReg identified in the WLA market? If you consider that the existing price control obligation is materially failing to address these problems, please provide supporting evidence and reasoning

BT Response

We were surprised and disappointed by the Decision of ComReg in the D10/18 to make the connection and migration price the same and would disagree with clause 8.22 that different prices stifles competition. At that time the number of customers who had purchased FTTH was tiny, the regulatory framework was still uncertain as we awaited the outcome of D10/18, some operators had not yet completed their developments to enter the market and the decision did not align with the consultation. We agree with the original intention of the consultation that led to D10/18 where part of the cost of connection is recovered through the rental. We would like to offer the following comments to support our views:

- a. The activity to migrate customers does not cost the 170 Euros being charged and is probably closer to the 2.5 Euro charged for FTTC migrations. Hence in terms of cost causation regulation the ComReg approach is clearly wrong.
- b. We note that a key principle of regulation is to enable the end user to change provider and indeed the EECC proposes to further assist this process in Article 106. So its incorrect in our view for ComReg to act to impede this right with the use of high prices. We do not agree with the approach to restrict switching that ComReg has imposed.

Q19. Do you agree with ComReg’s preliminary view that Eircom should, for PSTN WLR, provide annual information on key demand and cost metrics as part of its AFI submissions? Please provide reasons for your response.

BT Response

In our view the preliminary views of ComReg in the FACO are wrong with respect to de-regulation of the urban areas as there is no viable workable path to bulk migrate customers from WLR to VoIP. In addition we believe ComReg were incorrect in their analysis and should have separately reviewed the fixed access from the call origination aspects as occurs in other jurisdictions.

Notwithstanding our views above, if the decision were to be taken we would agree to the proposal leading to Q19 provided a deeper review is carried out every three years.

Q20. Do you agree with ComReg’s preliminary view that Eircom should review the ANM annually for material / exceptional changes, and that such material/exceptional changes are brought to the attention of ComReg for consideration? Please provide reasons for your response.

BT Response

We agree with ComReg’s preliminary view that Eircom should review the ANM annually for material / exceptional changes, and that such material/exceptional changes are brought to the attention of ComReg for consideration. This should ensure that ComReg is aware if any changes, however if such is not declared ComReg need to indicate the consequences of such omissions, otherwise the requirement is meaningless.

Q21. Do you agree with ComReg’s preliminary view on the price control periods at paragraph 9.10? Please provide reasons for your response.

BT Response

We are concerned that VoIP is increasingly vulnerable to MST behaviour as ComReg de-regulate both the WCA and FACO markets. Hence, a combination of difficulties migrating customers and unstable WLR and WCA pricings in urban areas can act to stunt the growth of VoIP.

Q22. Do you have any comments on the Regulatory Impact Assessment and in your opinion are there other factors which ComReg should consider in completing its Regulatory Impact Assessment? Please provide reasons for your response, clearly indicating the relevant paragraph

numbers to which your comments refer, along with relevant factual evidence supporting your views.

BT Response

We would like to offer the following comments to the Regulatory Impact assessment which we understand is focused on the WLR FACO price changes.

1. We are concerned at the activities of Eircom described in clause 10.25 around extending the life of copper service. Our concern is why Eircom is choosing to invest in legacy products when the efficient and modern approach would be to encourage the migration to VoIP. We consider ComReg should not promote investment in inefficient investments.

Q23. Do you believe that the draft text of the proposed Decision Instrument in relation to the WLA and WCA Markets (ComReg Decision D10/18) is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

BT Response

Notwithstanding that we don't agree with ComReg's view of the SLU pricing which we believe creates an artificially high value we would like to add the additional comment.

1. We welcome that ComReg is specifying that no additional pricing should apply, such as in clause 12.75 of this Draft Decision Instrument, however our current experiences with CEI where a similar view was taken by ComReg suggests this approach is not working, with unexpected charges being sought on an ad-hoc and non-transparent basis. We would ask for ComReg to modify the Draft Decision that should ComReg explicitly allow a new price as stated in 12.7.5 then such a price or prices must be published in the appropriate and transparent price list with the appropriate notification's periods. Also ComReg should add such charges to the ANM as they will alter the revenue that Eircom is earning and should be accounted for in modelling costs.

Q24. Do you consider that the draft text of the proposed Decision Instrument and Direction (in relation to ComReg Decision D11/18) is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

BT Response

We don't agree with ComReg's view of the SLU pricing which we believe creates an artificially high value for VUA and regional bitstream plus. We also do not agree with the Cross subsidy in the form of additional overhead costs that ComReg are effectively transferring from the NBP IA to the Commercial Area. The NBP IA has already been subject to state aid and ComReg actions appear as an additional artificial and unauthorised form of aid to the NBP area.

Q25. Do you consider that the draft text of the proposed Decision Instrument for the Regional Low-Level FACO Market, in the context of this Consultation, is from a legal, technical and practical

perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

BT Response

We welcome that ComReg is specifying that no additional pricing should apply, such as in clause 7.1 of this Draft Decision Instrument, however our current experiences with CEI where a similar view was taken by ComReg suggests this approach is not working, with unexpected charges being sought on an ad hoc and non-transparent basis. We would ask for ComReg to modify the Draft Decision that should ComReg explicitly allow a new price as stated in 7.1 then such a price or prices must be published in the appropriate and transparent price list with the appropriate notification's periods. Also ComReg should add such charges to the ANM as they will alter the revenue that Eircom is earning and should be accounted for in modelling costs.

End

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Response to ComReg Consultation:

Regulated Wholesale Fixed Access Charges

Review of the Access Network Model and Specification of the Price Control for Public Switched Telephone Network Wholesale Line Rental

ComReg Document 20/101



8 January 2021

DOCUMENT CONTROL

Document name	eir response to ComReg 20/101
Document Owner	eir
Status	Non-confidential

The comments submitted in response to this consultation document are those of Eircom Limited and Meteor Mobile Communications Limited (trading as 'eir' and 'open eir'), collectively referred to as 'eir Group' or 'eir'.

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EXECUTIVE SUMMARY

Given the importance of ComReg's Consultation and its implications for the broadband market, the commercial roll-out of superior high-speed broadband, and for the contingent success of the €3 billion State funded national broadband plan for rural Ireland, it is worrying that eir's detailed review of the Access Network Model ('ANM') found changes in the model to be incorrect, illogical, inconsistent and in parts to be based on changes and assumptions that are not consulted on transparently.

ComReg's Consultation essentially considers the wholesale price that eir can charge operators, for the cost of a copper telephone line and the cost of a copper broadband line, in those parts of Ireland where ComReg has considered eir to be dominant.

ComReg's proposed price control obligation for a wholesale copper line service (referred to as 'PSTN WLR') based on cost-orientation — in a small and declining geographic subset of the Irish market — as well as its proposal to impose price reductions for copper broadband services will not only reduce migration incentives for consumers to switch or migrate from copper-based services to a high-speed broadband network (referred to as fibre-to-the-premises or fibre-to-the-home ('FTTH') network) but will also significantly undermine further commercial roll-out of FTTH to the detriment of Irish consumers. It will also negatively impact the Irish Government's €3 billion FTTH investment and potentially require additional intervention through higher tax payer support. Consequently, ComReg is directly laying the foundation which will inevitably delay Ireland's transition to a fully digital and green economy.

Contrary to its regulatory obligations, ComReg's model prevents eir from legitimately recovering close to \times of eir's capital investment. This number is understated as ComReg has incorrectly forecast the future capital expenditure required by eir over the price control and discarded additional capital expenditure not recovered within the review period.

For wholesale copper telephone line prices, correcting for various other errors identified, even before taking account of the \times that is stranded, the ANM generates values that are higher than the existing national rates. This is to be expected, as the current national rate is cross-subsidised by the lower cost of urban routes. The remaining small and declining subset of the rural market on which the model is based is also the subject of the State

funded FTTH network. Therefore, as customers move from eir's legacy network to the State funded FTTH network it means that the higher cost of copper lines needs to be recovered from a smaller and declining rural base. This means that the wholesale price required to ensure cost recovery will need to increase further.

Finally, in the case of calculating the cost of a wholesale broadband line, ComReg has made a number of material errors. In particular, in calculating the local loop cost of Fibre-to-the-Cabinet ('FTTC') Bitstream, ComReg's model has made a fundamental and significant error in that the geographic footprint used to calculate the cost includes those local loops that are no longer regulated and therefore are not subject to cost regulation. As currently modelled, ComReg is incorrectly cross-subsidising the national FTTC Bitstream price by the lower costs from deregulated areas. This is ultra-vires to ComReg's regulatory powers.

In addition, one of the underlying assumptions in the NGA Cost Model namely that eir will not overbuild its FTTC network is no longer accurate or valid. eir has announced that it is to spend an additional €500 million in investments to upgrade the broadband connections for an additional 1.4 million homes and businesses to FTTH. Consistent with the 2013 EC Recommendation, ComReg must recognise the shorter economic asset lives of FTTC as a result. The required accelerated depreciation charge will significantly increase the modelled cost not only in the ANM but also in the NGA Cost Model.

Finally, our consultants BRG, have produced a report (the 'BRG Report') which documents their view of the ANM identifying a number of modelling errors, poor modelling practices, and policy issues. In particular, ComReg has not respected eir's 'fair bet' investment when it made its decision to undertake its FTTC deployment given its approach changes the regulatory and economic conditions as they presented themselves to eir at the time of investment. Similarly, ComReg has failed to recognise that in updating certain parameters in the model it breaks the payment path (referred to as an annuity) which resulted in lower initial regulated wholesale prices on the condition that future prices would compensate. In simple terms, ComReg assumes because the average hypothetical cost of funds is lower today that one could simply go back in time as if that cost was always in existence. This is not accurate, mathematically sound or consistent with the "return on capital" obligations that ComReg must adhere to when making regulatory decisions.

Given the limited functionality of the model, BRG have only been able to correct certain parameters. Notwithstanding this limitation, the resulting prices are in all cases higher than those proposed by ComReg and, more significantly, either higher than or in line with the wholesale prices today.

As the errors and required model updates were not identified by either ComReg or its consultants, eir submits that it would be appropriate that interested parties should be provided the opportunity to review whether the corrections / changes identified have been made. Furthermore, given that ComReg's current Mid-Term Assessment of the broadband market (ComReg 20/114) will further reduce the number of bitstream exchanges that are relevant for cost modelling purposes, when the revised footprint is used in the ANM (and NGA Cost Model) it should be shared with interested parties to ensure that it is still capable of generating sensible and reliable outcomes.

The way forward

eir notes that Ofcom (ComReg's peer) has adopted an approach where charge controls imposed are not cost based but rather held flat in nominal terms. The Ofcom approach in recent years, has been to set prices that are intended to encourage investment in competing networks, rather than solely by reference to costs. eir considers that such an approach is relevant for Ireland not only in the context of PSTN WLR pricing but also for current generation broadband and FTTC services. Such pricing continuity (when appropriately set) has the benefit of promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition but also provides a path to allow migration of consumers to those alternative very-high speed networks when they become available.

eir considers that a price cap for PSTN WLR — in line with its proposed voluntary commitments and expanded upon in this submission — is better suited to ensuring that ComReg's regulatory obligations are met, in particular encouraging efficient investment and innovation as well as regulatory certainty and stability. Such an approach would provide a better balance between allocative and dynamic efficiencies, which should be a key concern to ComReg at this particular juncture.

Further, eir proposes a voluntary commitment to continue to charge a fixed price for FTTC Virtual Unbundled Access ('VUA') and FTTC Bitstream for the duration of price control period. ✂

At this time, pricing continuity would send an important signal to investors that ComReg continues to be committed to setting prices that support investment, thereby creating more stability and certainty over the medium term.

Given the manifest failure of this Consultation to meet most of ComReg's regulatory objectives, the errors and shortcomings exhibited in the cost modelling, lead eir to find at minimum further rounds of consultation are required if ComReg maintains its view to use the ANM to set wholesale prices.

eir is looking forward to engaging on these consultations to arrive at an eventual remedies package that supports ComReg's statutory objectives and the continued evolution of Ireland to a full digital economy.

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RESPONSE TO CONSULTATION

Q. 1 Do you agree with ComReg’s preliminary view that the price control obligation for PSTN WLR in the Regional Low-Level FACO Market should be based on cost orientation? Please provide reasons for your response.

1. eir does not agree with ComReg’s preliminary view that the price control obligation for PSTN WLR in the Regional Low-Level FACO Market should be based on cost orientation. In particular, eir considers that:
 - (i) the geographic scope of the FACO market is in fact national and ComReg’s conclusion that there is an “uncompetitive” small sub-national Regional Market is flawed;
 - (ii) ComReg has failed to adequately consider the voluntary commitments offered by eir in respect of the FACO market; and
 - (iii) given ComReg’s objective to promote competition and investment, and in particular the deployment of very high capacity networks in line with the new European Electronic Communications Code (‘EECC’), the focus of regulation should now shift from legacy services and towards efficient and timely copper switch-off.

Flawed assessment of the FACO market

2. As discussed in eir’s response to ComReg 20/46¹, the geographic differences in competition in the FACO market are clearly not appreciably different to the extent that they justify the existence of sub-national markets. This finding is particularly striking when to eir’s knowledge the remaining few EU National Regulatory Authorities (‘NRAs’) that still continue to regulate Market 2/2007 have defined the market as national in scope. eir considers that the geographic scope of the FACO market is in fact national and by any measure, including premises; access lines; and FACO lines, the sub-geographic “Regional Market” is so small that ComReg’s analysis suffers from three fundamental flaws.

¹ ComReg Document No 20/46, “Market Reviews Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non-Residential Customers Wholesale Fixed Access and Call Origination”. Dated 17 June 2020.

3. First, ComReg’s geographic assessment considers the competitive conditions within an individual exchange only and the approach that ComReg has chosen results in the identification of an “uncompetitive” sub-national market that accounts for 26% of all premises in Ireland, many of which already have access to alternative access products. It is clear that the Regional Market, or indeed the small individual exchanges (with an average of 816 premises) that it groups together, is not an economic market of sufficient size. In this regard, the 80% coverage criterion is overly conservative. This is particularly true when one considers the small nature of the exchanges identified as belonging to the Regional Market and the coverage thresholds chosen by other NRAs.
4. In addition, even when these exchanges, which fail to pass the coverage criterion, are taken collectively as a “Regional Market”, this market overlaps areas where there will be further commercial roll-out of FTTH as well as by NBI the State funded FTTH network rollout within the review period. Therefore, the natural decline of this market will be expedited to such an appreciable extent that it fails today to pass the three criteria test.²
5. It is also important to point out that in addition to not taking into account prospective competition from NBI’s network over the period of the review, ComReg’s geographic assessment does not include an analysis of existing competition from the cable network operator, Virgin Media. It is unclear how ComReg can make any correct determination as to the competitive dynamics in the market absent such analysis. The result is the continued regulation of those premises that are already FTTH passed e.g., just under 3%³ premises covered by eir’s rural FTTH rollout. It is also clear that premises passed by SIRO and Virgin Media NG broadband are in the regulated market given the fact that NGA coverage in Ireland is 96%⁴ it is odd therefore that ComReg only proposes to deregulate 74% of premises.
6. Second, ComReg’s decision to analyse individual exchanges also fails to capture the countervailing buying power arising from the larger and more extensive Urban Market. In an ever declining market, it makes no commercial sense to jeopardise

² See specifically eir’s response to ComReg consultation 20/46.

³ Table A8.10, ComReg Document No 20/46, “Market Reviews Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non-Residential Customers Wholesale Fixed Access and Call Origination”. Dated 17 June 2020.

⁴ Digital Economy and Society Index (DESI) 2020 Ireland <https://ec.europa.eu/digital-single-market/en/scoreboard/ireland>

and forego wholesale revenues nationally — eir cannot act independently of its customers and consumers. The FACO market has been regulated for such an extended period of time that ComReg’s “Modified Greenfield approach” fails to recognise the behaviour of market participants absent regulation. In recently deregulated markets, such as Call Transit and in the WCA Urban Market, eir has been able to offer discounts and enter into commercial arrangements with operators. Given the diminutive size of the Regional Market similar commercial agreements would occur across eir’s FACO products nationally.

7. Finally, ComReg has failed to step back from its analysis and consider whether the Regional Market is in effect a residual part of a national market in which FACO services are offered and whether the theoretical menu-based rota of potential abuses (where such a one-tailed test can be claimed notionally in any market) would actually occur. eir submits that if ComReg had undertaken a further (and more accurate) analysis that it would be apparent that the Regional Market would not qualify as a separate relevant economic market.
8. This is discussed further in a report⁵ produced by Copenhagen Economics (CE) on behalf of eir that questions the economic rationale for continued *ex ante* regulation of the FACO market in Ireland. This report has been separately provided to ComReg but in summary, CE considers that a broad range of market developments constrain eir from exploiting its alleged market power over the coming regulatory period. In particular, CE finds that:
 - a. mobile operators have already overcome any barriers to entry;
 - b. the state-backed NBI rollout will materially alleviate any market failures associated with the deployment of NG network to rural premises;
 - c. ComReg appears to have underestimated the role of alternative operators providing Managed VoB; and
 - d. the market exhibits national-level competition, which is likely to undermine eir’s alleged market power with respect to the (very small) sub-set of FACO-reliant customers.

⁵ Copenhagen Economics “Is there a case for *ex ante* regulation in the Irish FACO market? A review of ComReg’s Consultation and Draft Decision”. Dated 25 October 2020.

9. Taken together with eir's submission, it is evident that ComReg has not sufficiently demonstrated that continued regulation is warranted. The characteristics of the market over the review period do not support ex-ante regulation. The review periods for both the Retail Access Fixed Line and FACO markets have expired and in the case of the retail market the review is in fact 3 years overdue. ComReg must now move to correctly deregulate these markets.

Voluntary commitments

10. eir notes that it has already proposed (in February 2020) a number of voluntary commitments with respect to the FACO markets, including that it would commit to Pricing, Access, Transparency and Non-Discrimination for WLR as well as current market rates for ISDN BRA, ISDN FRA, ISDN PRA and Current Generation FVCO.
11. Even if it was accepted that some geographic subset of the FACO market should continue to be regulated, eir does not agree with ComReg's preliminary conclusions on the proposed remedies, in particular those relating to pricing. In the first instance, they are unnecessary in an environment where eir is willing to enter into voluntary commitments in respect of a declining sub-set of the national market. ComReg has offered no valid reason as to why the proposed commitments are not acceptable, merely asserting in paragraph 10.40 of the FACO Consultation that they '*would have been insufficient to address all of the competition problems identified*' but without setting out any assessment of the proposed commitments to support this claim. As such, ComReg has failed its obligations in accordance to Section 12 of the Act and Regulation 16 of the Framework Regulations and in accordance with Regulation 8 of the Access Regulations, which provides that ComReg must ensure that the proposed obligation is based on the nature of the problem identified, and proportionate and justified in light of ComReg's statutory objectives. Instead ComReg merely seeks to rely on a process point in terms of the timing of the implementation of the European Code in stating that '*there is no basis in legislation to accept voluntary commitments*' as the Code was not due to become law in Ireland until December 2020.
12. However, this point does not stand up to scrutiny. ComReg itself states that it will not be making a final Decision until Q2 2021 and while the Code has not been transposed as anticipated on 21 December 2020, ComReg could not have foreseen

that at the time. Furthermore, in correspondence received from ComReg on 4 August 2020, ComReg relies on the fact that the Code will be transposed for not conducting as required a new market analysis for both the WLA and WCA market by 2021 – stating that “ComReg does not accept the contention that the absence of a completed analysis of the WLA and WCA markets by November 2021 would be in breach of Regulation 27. By that time, the provisions of the European Electronic Communications Code (EECC) Directive will have been transposed into Irish law. Contrary to what you suggest, the extension by the EECC of the market review time period to five years is directly relevant to ComReg Decision D10/18”. In any event, given that the publication of a final Decision is not expected until Q2 2021 this should facilitate the legal basis upon which ComReg can have regard to eir’s proposed commitments.

13. Further as ComReg itself states in ComReg 20/46 “it is appropriate that, on a forward-looking basis, any such changes [arising from the implementation of the Code] are acknowledged in this Consultation”. ComReg states that it will ‘consider interested parties views on this matter’ (presumably on the preface that eir’s commitments ‘would not be sufficient to address the competition problems identified.’). As eir’s voluntary commitments largely mirror the remedies provided by the extant regulation it is unclear what this view is based on and ComReg has not provided sufficient detail to enable eir to understand how those commitments were lacking and to provide eir the opportunity to respond to that position. eir therefore considers that ComReg should properly consider the proposed voluntary commitments and allow eir to respond to ComReg’s views as provided for under Article 6 of the Framework Directive.
14. In addition, eir considers that a price cap at current price levels is better suited to ensuring that ComReg’s regulatory obligations are met, in particular encouraging efficient investment and innovation as well as regulatory certainty and stability. In Section 6, ComReg considers three potential options in terms of setting cost-oriented prices for PSTN WLR as follows:
 - (i) setting a price cap that would maintain the existing PSTN WLR price for the entire period of the price control;
 - (ii) setting a price cap for the price control period that is informed by the outputs of the ANM; and

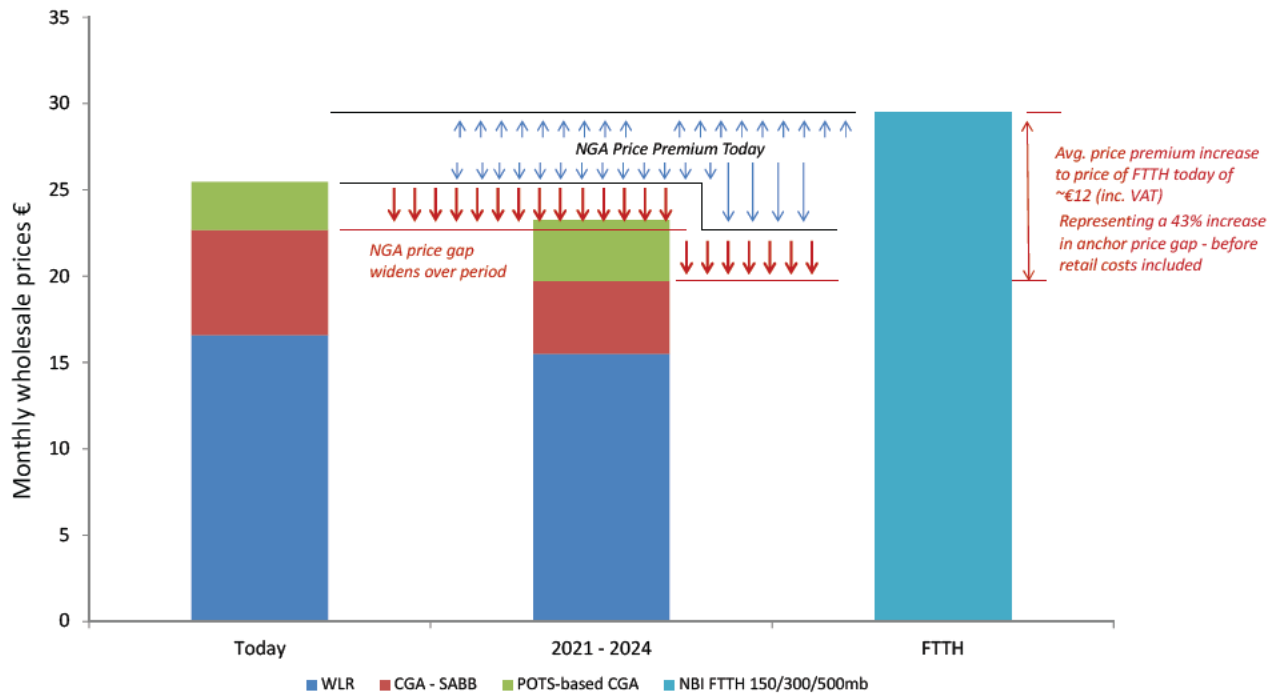
- (iii) setting a price per year for each year of the price control period based on the modelled outputs for that year.
15. ComReg is of the preliminary view that the third option best meets the objectives of ensuring cost recovery and providing stability of prices. However, and as noted by ComReg at paragraph 6.19, the first option would provide “*maximum stability of prices in the Regional Low-Level FACO Market*”. Nevertheless, ComReg proceeds to dismiss this option on the basis that such an approach would purportedly lead to excess recovery. eir submits this view is not only short-sighted (contrary to long-term policy objectives ComReg should be striving to achieve) but also incorrect.
16. As set out in eir’s response to Question 9, there are a number of adjustments required to eir’s historical profits to get a better view of the economic profits that are available on PSTN WLR. As demonstrated by eir, when properly adjusted those economic profits are consistently below the regulated WACC of 8.18%. Finally, to the extent that past profits were generated for PSTN WLR services, ComReg has already justified offsetting those gains against consistent and cumulative historic FTTC losses which eir incurred.⁶ For ComReg’s argument to hold true it simply cannot be that ComReg again uses the same reasoning for entirely different purposes to merely suit the case in hand.
17. eir notes that Ofcom (ComReg’s peer), in its Wholesale Fixed Telecoms Market Review (WFTMR), has adopted an approach where charge controls imposed are not cost based but rather held flat in nominal terms. The expectation being that while this may lead to modest over-recovery of costs it was better than imposing cost-based charge controls which could risk undermining investment. Ofcom noted in the WFTMR that the evidence suggests its approach to date is having the desired effect, in that it is seeing competitive network build develop. In addition, Ofcom allows Openreach to recover enough of the FTTH investment cost from copper services to make the business case for investing profitable, whereby the cost of legacy services would continue to be entirely recovered from the consumers that purchase legacy services. This is in stark contrast to the allocation of costs proposed by ComReg to FTTH in this Consultation.

⁶ See paragraph 145.

18. The Ofcom approach in recent years, has been to set prices that are intended to encourage investment in competing networks, rather than solely by reference to Openreach's costs. eir considers that such an approach is relevant not only in the context of PSTN WLR pricing but also for current generation broadband and FTTC services and that ComReg should exercise its discretion in setting pricing controls in favour of an approach that supports investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition.

19. Ofcom also considers that pricing continuity sends an important signal to investors that it continues to be committed to setting wholesale prices that support investment, thereby creating more stability and certainty over the medium term. Investor reports have demonstrated how these pricing signals contribute to investor confidence and a positive regulatory environment. A departure from this strategy and return to cost-based pricing would undermine the incentive for telecoms providers to build new networks. eir considers that such an approach would also be appropriate in the Irish context. In particular, in the Regional Market where eir is proposed to have SMP and which will be directly subject to FTTH investment by the State funded FTTH programme. ✂ the combined lower price (compared to today) of an adequate broadband and voice services for consumers could fundamentally not only decrease consumers migration incentives to FTTH in the commercial areas but significantly undermine the Irish Government's €3 billion fibre-to-the-home intervention. ComReg is laying the foundations for the delayed migration of Ireland towards a full digital economy. See Figure 1: ComReg reducing consumer migration incentives to the State funded FTTH network and Figure 4: ComReg reducing consumer migration incentives to FTTH network.

Figure 1: ComReg reducing consumer migration incentives to the State funded FTTH network



Implications for State Funded FTTH Network

- i) Slower migration by end-users*
- ii) Downward pressure on FTTH price*
- iii) Detriment to business case leading to a potential increase in taxpayer contribution*

20. Furthermore, the imposition of obligations in respect of PSTN WLR pricing has to be considered in the context of a declining market. Prices act as a signal to consumers and service providers in that, consumer preferences determine how much they are willing to purchase at a given price. In this manner, price controls can encourage inappropriate economic activity. There is much discourse around the effect of access pricing on investment incentives for new technologies as well as on the migration from old to new technologies. Regulation can affect the adoption of innovation especially in highly regulated industries. As network infrastructures are expected to be a strong contributor to economic activity, growth and indeed recovery in light of the COVID-19 pandemic, a fast transition from old network technologies to new ones will be a key challenge for policy makers. Full migration from copper networks is both socially and economically desirable.
21. Declining demand, and its implications for regulation, is an especially prevalent feature of telecommunications markets, which are characterised by technological

development and accompanying innovation, as well as changing consumer preferences. Demand for certain services, e.g., PSTN WLR, which utilise the fixed telecommunications network are in a permanent state of decline. Such decline can be identified in the sense that it is not temporary but rather has been sustained over a number of years and is expected to continue and that it is not isolated to specific geographic areas. In the face of such decline it is important to consider how best to balance short-term allocative and long-term dynamic efficiency goals.

22. eir considers that a price cap at current price levels, in line with its proposed voluntary commitments (and expanded in this submission), would provide a better balance between allocative and dynamic efficiencies, which should be of key concern to ComReg at this particular juncture. This method would also benefit from increased ease of application as opposed to a strict cost-orientation pricing obligation and more appropriately take the utmost account of the EC comments to ComReg's 2015 FACO market analysis which called *"upon ComReg to take the opportunity of the forthcoming parallel consultations to streamline the existing pricing remedies, thereby enhancing transparency and legal certainty for market players"*. See also eir's response to Question 9 and 10.
23. Where potential concerns in relation to the transition from an ex ante to ex post regulation regulatory regime arise and can be adequately justified, eir notes that it would of course be appropriate for an NRA to consider any voluntary commitments made by the former SMP undertaking. Ofcom, for example, in its consultation on its WFTMR, noted that while the Wholesale Fixed Analogue Exchange Line ('WFAEL') market was no longer suitable for ex ante regulation, it was conscious that there would remain a substantial number of WLR customers through the early years of the market review period. It therefore considered whether transitional regulation was required to support those customers but ultimately determined that it was not necessary to impose a sunset period on the basis of voluntary commitments made by Openreach. ComReg has committed a significant process flaw in failing to adequately consider eir's voluntary commitment as part of the Consultation and in its apparent rejection in ComReg 20/46 for failing to consider that preliminary view as part of its Regulatory Impact Assessment ('RIA').

Copper switch-off

24. The retirement of copper services is an important part of the business case for the roll-out of fibre networks and the faster that customer migration from copper to fibre occurs, the stronger the business case for investment in fibre becomes. Given ComReg's objective to promote competition and investment, and in particular the deployment of Very-High Capacity Networks ('VHCNs') in line with the EECC, the focus of regulation should now shift from legacy services.
25. Investment in fibre is part of a wider transformation of Ireland's telecommunications infrastructure, comprised of both the migration of voice services to IP technology and the overall withdrawal of copper-based services, and will be an important enabler of green and digital transitions and as such recovery in the wake of the COVID-19 crisis. ComReg can support each of these objectives in the following ways:
- (i) price controls, or indeed the removal of same, that ensure an efficient and timely migration for different types of operators and users at different points in the migration process ; and
 - (ii) a specific work stream aimed at the development of a copper retirement strategy, which should underpin all other regulatory work items.
26. eir notes that the availability and take-up of very high capacity networks (VHCNs) and connectivity, namely fibre to the premises (i.e., homes and businesses and collectively referred to in this paper as 'FTTH') and 5G, have been elevated to core objectives of the new EECC, which was due to be transposed by the end of 2020. In particular, Article 3 promotes connectivity and access to, and take-up of, VHCNs by all citizens and businesses of the EU.
27. This objective is at the centre of the EU's ambitions for a Gigabit Society, which sets non-binding targets for connectivity across Member States to be achieved by 2025;
- access by all households to download speeds of at least 100 Mbps and upgradeable to gigabit speed;
 - connection speeds of 1Gbps for socio-economic drivers e.g. schools, transport hubs and businesses.

- commercially available 5G mobile communications systems in all urban areas and major transport corridors in Europe.

28. Gigabit connectivity has been further highlighted as a priority of the European Commission for the 2020-2024 legislative cycle. In particular, the Commission's Communication on Shaping Europe's Digital Future⁷, the Recovery Plan for Europe⁸ and the Commission's Recommendation on Connectivity⁹ focus on widespread availability of ultrafast broadband.

An approach to pricing that encourages efficient and timely migration

29. On the first issue, as discussed earlier in this response, eir considers that a price cap on the basis of eir's proposed voluntary commitments would provide a better balance between allocative and dynamic efficiencies, which should be of key concern to ComReg at this particular juncture. In addition, such an approach would ensure that ComReg's regulatory obligations are met, in particular encouraging efficient investment and innovation as well as regulatory certainty and stability.
30. The migration of users from the legacy network is currently customer demand driven and it is anticipated that this will continue to be the case in the short term. As consumer's assessment of whether to switch to full fibre will depend on the relationship between the on-going charges for such a connection and the charges paid for their existing connection. If the prices of copper-based services are low (either through commercial or regulatory intervention) then adoption rates for full fibre broadband will also be low.
31. In addition, low wholesale access prices for legacy networks delay infrastructure investment in NGA by alternative operators, as it increases their opportunity cost of investment. This is also true for resellers. The more alternative operators invest in their own infrastructure, the more the incumbent is incentivised to invest in

⁷ European Commission, *Shaping Europe's digital future*, 19 February 2020, https://ec.europa.eu/info/sites/info/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf

⁸ https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/recovery-plan-europe_en

⁹ Commission Recommendation on a common Union toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum, https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=69383

response. eir considers that the interaction of these effects necessitates wholesale access prices for copper services that remain stable over the short term and have the flexibility to increase over the medium term, in order to create the correct signals for different types of operators and users at different points in the migration process.¹⁰

32. In recognition of this, a number of regulators have already started to move away from the classic ladder of investment based pricing remedies of cost plus, even for copper prices, in recognition of the dual role that copper plays in funding NGA deployment including incentivising other operators and migration incentives for legacy networks. Where pricing models for legacy copper services the 2013 EC Recommendation is clear that *“A costing methodology that leads to access prices replicating as much as possible those expected in an effectively competitive market is appropriate to meet the objectives of the Regulatory Framework. Such a costing methodology should be based on a modern efficient network, reflect the need for stable and predictable wholesale copper access prices over time, which avoid significant fluctuations and shocks, in order to provide a clear framework for investment and be capable of generating cost-oriented wholesale copper access prices serving as an anchor for NGA services”* [emphasis added]. ComReg’s Consultation is not consistent with the 2013 EC Recommendation. Intuitively under such a costing methodology the modelled Modern Equivalent Asset (‘MEA’) cost of PSTN WLR will increase – however, consistent with eir’s voluntary commitment set out in our response to Question 9 (and Question 10) such modelled outcomes would not impact the maximum monthly price eir would charge for this service over the price control period.

¹⁰ This holds true in the Intervention Area where legacy broadband prices can impact the migration incentives to the State funded FTTH network as well as in commercial areas.

An overarching policy for copper switch-off

33. eir remains subject to existing regulatory remedies on legacy copper products in the WLA and WCA markets and under the USO regime. It is also proposed that it will continue to be subject to the entire suite of regulatory remedies in a sub-set of the legacy FACO market. eir does not consider that a continued focus on regulation of legacy services underpins the goal of effectively transitioning from copper to fibre.
34. eir submits that a policy objective of timely copper retirement that is beneficial from a consumer, commercial and efficiency perspective should be forward looking and holistic. It should not, as would appear to be ComReg's preference from its current analysis of the WLR-PSTN FACO market, be silo-based and divorced from considerations of the interaction between regulatory obligations in the context of the overall market and technological development.
35. Such a forward looking and holistic approach has already been adopted by other NRAs. For example, in its WFTMR, Ofcom noted that since the 2017 Narrowband Market Review (NMR) Statement, Openreach has consulted on its plans to withdraw WLR products and transition to IP voice services by the end of 2025. This will mean that Openreach will no longer provide voice services in this market and that from 2025 BT will no longer be in a position to assert market power in this market. Ofcom is also reviewing the WLA market and noted that any regulation arising in this market ensures that there is no barrier to the provision of broadband lines. It therefore considers that there no longer remain specific barriers to the provision of voice services that it needs to address with regulation in this market and as such proposes to remove all regulation of the PSTN WLR market. It is unclear, given eir's voluntary commitment why such an approach could not be adopted by ComReg. Pursuant to Section 12 of the Act and Regulation 16 of the Framework Regulations and in accordance with Regulation 8 of the Access Regulations, which provides that ComReg must ensure that the proposed obligation is based on the nature of the problem identified, and proportionate and justified in light of ComReg's statutory objectives – eir submits that ComReg must provide interested parties the opportunity to provide submissions on ComReg's justified reasoning for deciding (if ComReg maintains appropriate for it to do so) to not accept eir's voluntary commitment.

Q. 2 Do you agree with ComReg’s preliminary view that the monthly charge for PSTN WLR in the Regional Low-Level FACO Market should be set using the TD FAC approach based on Eircom’s HCAs for the copper loop component and a BULRAIC+ approach for the active equipment? Please provide reasons for your response.

36. Please see eir’s response to Question 1 and Question 9.

NON-CONFIDENTIAL

Q. 3 Do you agree with ComReg’s preliminary view that the monthly supplemental charge for POTS based FTTC in the Regional Low-Level FACO Market should be set using the TD FAC approach based on Eircom’s HCAs for the incremental copper access component and a BU-LRAIC+ approach for the active equipment? Please provide reasons for your response.

37. Please see eir’s response to Question 1 and Question 10.

NON-CONFIDENTIAL

Q. 4 Do you agree with the assumptions and approaches used to model demand in the Service Demand module? Please provide reasons for your response.

38. The Service Demand Module is an essential part of the ANM. It forecasts copper and fibre volumes that are used as inputs to other modules. Assumptions and approaches used in the Service Demand Module can therefore have a large impact on the outcomes of the ANM. ComReg has provided two versions of the Service Demand Module: a non-confidential version containing the logic and formulae of the module, but with anonymous inputs and a version containing only the outputs that feed into the other modules, but stripped of all input data and underlying calculations.
39. Weir does not agree with ComReg's preliminary view that their approach to modelling demand in the Service Demand Module is appropriate. We base this view on two overarching observations:
- a. lack of documentation and / or discussion of how the module has been calibrated; and
 - b. failure to consult on the key inputs used as per the requirement in Article 6 of the Framework Directive.

We cover both these points below in addition to copper switch-off where ComReg specifically ask for views from interested stakeholder.

Lack of Calibration

40. The Service Demand Module is large and complicated with multiple inputs and over 16 calculation sheets, each with thousands of rows. This reduces traceability and increases the chances of inconsistencies and errors. Good modelling practice would dictate that any outputs should be carefully reviewed and subject to sensitivity testing to understand whether the modelled inter linkages are correct (i.e., are working as they should) and whether the outcomes makes sense (i.e., compared to real work outcomes and expectations). In particular, without calibration to real world outcomes, there is no way of knowing whether the model is performing as intended and ultimately capable of ensuring cost recovery.

41. BRG has reviewed the Service Demand Module and conclude that it does not function as it should and that the assumptions and formulae do not meet the criterion of being internally consistent. BRG find several examples of the Service Demand Module not providing outcomes that are plausible and logical. For example, BRG refer to the counter-intuitive outcome of FTTH lines creating demand for ADSL. Specifically, the number of FTTH lines in the IA is forecasted to increase from zero in 2019 to 34,288 in 2024 while in the same period, the number of non-cable, non-FWA broadband lines increase from 89,817 to 206,431. Another example relates to the assumption in the Non-Confidential Service Demand Module that there is a 5% uptake of FTTH in the first year it reaches an exchange-footprint, and 5% more per year thereafter. Logically this should imply that in the first year after it begins FTTH roll-out in the IA, NBI would have a 5% customer share in the exchanges it has rolled out to, compared to Eircom's 95% share. However, the Non-Confidential Service Demand Module currently predicts only a 2.7% share for NBI compared to Eircom in these exchange footprints. eir submits that ComReg should engage in a proper calibration exercise to ensure that any counterintuitive outcomes are identified and corrected.
42. Given the importance and implications of this decision it is worrisome that ComReg's consultants have not included a sensitivity analysis or a top-down calibration of the results to ensure the adequateness of modelled outputs. See also paragraphs 71-77.
43. In addition to the above, eir submits that the crude method used to spread demand for telephony-only and ADSL broadband (both POTS-based and Stand Alone) across urban commercial, rural commercial, and IAs has resulted in a serious distortion in the outputs of the Service Demand Module. Specifically, remaining active physical copper lines are allocated across the three regions in each exchange in proportion to the un-served delivery points in each region. This specifically fails to recognise two key features of provincial and rural demand for telephony and CGA broadband. First, the typical rural exchange is located in the largest village or town in the catchment area that has a higher proportion of business customers than does the surrounding countryside. These business customers have a higher demand for copper services often taking multiple PSTN services. Second, the performance of CGA broadband degrades with increasing

distance from the exchange and the extremities of the exchange coverage area typically do not support high ADSL speeds. In reality, the penetration of air physical copper lines by delivery point in the IA exchange footprints is substantially below that in the urban commercial footprints - even when VDSL services are excluded from the latter.

44. Errors and inconsistencies in the Service Demand Module will have compounding and non-trivial effects on other modules and final outcomes. Take for example, the ComReg assumption that total active lines are apportioned to exchange-footprints based on: *“the total count of premises in each-exchange footprint after considering whether competing services were active at these premises”*. In practice, the split of services between footprints and exchanges is entered into the Service Demand Module as percentages. In the Non-Confidential Service Demand Module, the split of ADSL and voice only services between the Urban Commercial Area, Rural Commercial Area and IA uses a ratio of 30:30:40, while FTTC is allocated 100% to the Urban Commercial Area. As set out in the BRG Report such rough allocation approximations based on total premises will skew towards the IA and away from the Urban Commercial Area because *“A large number of premises do not have an active fixed-line service, and these premises are not evenly distributed across footprints. The Urban Commercial Area has the highest penetration rate of active fixed line services, followed by the Rural Commercial Area and the IA.”*¹¹ This means that any allocation based on total premises will be incorrectly skewed towards the IA and away from the Urban Commercial Area, resulting in proportionally more copper services being allocated to the IA and fewer to the Urban Commercial Area than is actually the case”. While such an approach may have been appropriate when ComReg historically set prices either nationally or between the Larger Exchange Area and Non-Larger Exchange Area, those footprints were still regulated and still resulted in regulated prices in all areas — this allowed for a certain level of comfort regarding overall cost recovery. However, in this circumstance, where parts of the geographic market will be deregulated and where ComReg prevent the allocation of costs within small sub-geographic markets (i.e., corporate common costs are not proposed to be recovered from those areas subject to State Aid

¹¹ The current modelling contains a trend to increase the penetration of fixed-line services in the Rural Commercial Area and the Intervention Area to the level seen in the Urban Commercial Area. See Consultation 5.42. In the Non-Confidential Service Demand Module, 81% of Urban Commercial premises have an active fixed line service, compared to just 49% of IA premises.

intervention) then allocation of services to geographic areas through simple rules of thumb begin to undermine eir's ability to recover its costs. See also eir's response to Question 5.

45. Another example is a particular error in the Service Demand Module in relation to the recording and forecasting of PSTN connection volumes. The "Top Down Output" tab and the "Output OPEX" tab both show just under 12,000 PSTN connections for the financial year from 1 July 2018 to 30 June 2019. However, there were actually over 21,000 connections that required a "truck roll" (i.e., required a new copper path or could not be electronically enabled). This error is then compounded in the Opex Module by forecasting the 12,000 PSTN connections to fall by 3,000 in each of the next three years and then by using this forecast number of PSTN connections as the driver for provisioning costs. See also eir's response to Question 6.
46. In addition, it is not apparent how ComReg have taken account of premises with multiple lines and the distribution of these premises and failure to do so could lead to allocation errors between the IA and Urban Commercial Area.
47. Errors in allocation to the IA in the Service Module will also have repercussions for the other modules such as PAM and DAM which when used in conjunction with apportioning costs using the per customer method results in eir incorrectly bearing the largest proportion of those costs. Further, these allocations will also impact recovery of common costs in the IA given corporate common costs are only recovered in ComReg's proposal from commercial areas.

Failure to consult

48. As noted above the Service Demand Module is large and complex and does not allow for easy scrutiny. In addition, inputs are anonymised and only a version containing outputs that feed into the other modules is provided. While eir appreciates that confidentiality of certain operator specific inputs is required, ComReg should have consulted more extensively and specifically on the demand assumptions and forecasts used in ANM. For example, it is unclear whether ComReg has used historic information on eir's uptake of FTTH (i.e., in the 300k) as a guide/sense check/sensitivity to the forecasts provided by NBI (which foresees that it will take 15 years to migrate services to its network), and if so whether

adjustments have been made due to timing differences (for example, whether the State funded FTTH network will see a faster migration in comparison to eir's initial 300k take-up due to the increased demand for remote-working and learning due to COVID-19). As it stands, there is limited transparency of the sensitivity of key forecast growth rates and migration assumptions used.

49. An additional concern relates to assumptions provided by NBI. To the extent that these are used, ComReg should consider how they accord with NBI's commercial incentives to roll-out fibre and recover money over time. The amount, and timing, of the state aid is based on NBI achieving an agreed business plan. If NBI revenues are larger, and earlier, than forecast they keep a share of the difference; if they are lower, and later, than is in the plan NBI bear the full loss. eir submits that ComReg must take these considerations into account when relying on assumptions from the NBI business case.
50. ComReg has also failed to provide documentation for how key assumptions in the Service Demand Module affect the outcome of the ANM. It is good modelling practice to stress test a cost model. This is done by changing key assumptions and inputs to assess how it performs and also understand the boundaries under which the model will produce sensible results. Such analysis should have been shared with interested parties as part of the Consultation process. This will give ComReg comfort that the model is working as intended and allow stakeholders to better understand the implications that certain assumptions and modelling approaches have on outputs such as monthly wholesale prices. It is significantly important to allow stakeholders to understand how wholesale prices could evolve overtime. ComReg provided such transparency in consulting on the mobile termination rates in Ireland – see for example ComReg 15/19 — where interested parties were provided the impact of rates under alternative service demand and forecast scenarios. It is unclear why ComReg has not provided interested parties the opportunity to consider or at least observe the impact of alternative migration scenarios than that presented by NBI and accepted by ComReg.

Copper switch off

51. Copper switch off is a crucial part of the modelling services over the time period considered. It is without question that it will occur and hence the ANM should reflect

this reality. In the Service Demand Module it is assumed that copper switch off will commence from 2025 and will be no earlier than 5 years after an exchange-footprint becomes fibre-enabled (either by Eircom or by NBI). ComReg makes reference to the Spanish regulator who has directed a 5-year period for copper services to be maintained after fibre is deployed and ask for comments from stakeholders on this timeframe.

52. Despite the importance of copper switch off regulatory guidance from the European Commission is limited. The 2010 NGA Recommendation states that SMP (access) obligations in relation to Market 3a/b can be changed if agreement is reached between SMP operator and access seekers on an appropriate migration path. If there is no such agreement, the SMP operator must inform alternative operators no less than 5 years in advance of any network changes and/or decommissioning. The EECC provides more flexibility and is more specific than the 2010 NGA Recommendation. Specifically, Article 81 states that NRAs must ensure that *“the decommissioning process includes a transparent timetable and conditions, including an appropriate notice period for transition, and establishes the availability of alternative access products of at least comparable quality providing access to the upgraded network infrastructure substituting the replaced elements if necessary to safeguard competition and the rights of end-users”*. The EECC therefore foresees a procedure and conditions, including an appropriate notice period for transition, before a SMP operator can switch off its legacy network including the provision of alternative access products to access seekers where the copper network is decommissioned. However, there is no mention of the notice periods or time periods for which legacy copper services are to be maintained after fibre is deployed. On this specific related matter ComReg has completely failed to provide its views to eir’s voluntary commitment presented to it in February 2020.
53. International experience in this area is varied. In a recent report for the FTTH Council Europe WIK has catalogued notice periods on exchange closure.¹² WIK find that 5 years notice is typical, although this period can be shortened to between 1-3 years for exchanges where there are no co-located operators and/or where suitable wholesale products are made available. Further, widespread coverage of

¹² https://www.wik.org/fileadmin/Studien/2020/Copper_switch-off_whitepaper.pdf, see table 7

alternative technologies in the relevant area is another condition that has been linked to switch-off. They also note that the timeframes in many European countries are longer than those applying elsewhere in the world (e.g. Australia and the US).

54. eir submits that the ComReg blanket assumption of 5 years notice and the earliest switch-off beginning in 2025 is wholly inappropriate and unrealistic. First, 5 years should be regarded as an absolute maximum notice period that only applies in exceptional circumstances. A period of 1-3 years should be the norm and be guided by the specific circumstances related to the exchange area, i.e., the availability of alternatives products and services. Second, in terms of timing of the notice period this requires a specific evaluation of individual exchange areas.
55. In addition to the specific assumptions related to notice period and the specific modelling of switch off must be adjusted. The Service Demand Module currently assumes that switch off will occur at a different time for each exchange footprint. This implies that within a single exchange area there can be three different switch-off dates. While this would technically be possible, in practice this is not realistic. Switching off a copper exchange (or groups of exchanges) would normally only occur when the delivery points in all three exchange-footprints have been indexed to fibre distribution points (DPs) due to current regulatory obligations across a number of markets. Importantly, for the modelling of costs, even if an exchange footprint has been switched-off costs cannot be avoided or “saved”. Savings will only occur when all lines within an exchange have migrated and / or eir is allowed to remove access to its copper services. This approach is also in line with ComReg’s decision D04/11 on the USO net cost methodology which recognises that certain costs within an exchange area are considered unavoidable even where there is a disconnection of “uneconomic” customers.
56. In short, eir will be unable to fully avoid costs in any exchange until all the copper service in that exchange has been disconnected. These issues are also discussed in our response to Question 5.
57. An additional complicating factor is that the NBI plan is not to roll out FTTH by eir exchange but by NBI OLT. There are between 200 and 250 NBI OLT sites (many co-located at eir exchange sites) but the coverage planned for those OLTs does not

map to complete eir exchange areas. Some eir exchanges will be entirely included in the footprint of a single NBI OLT but many will require the completion of two or more NBI OLTs before they are candidate exchanges for copper switch-off.

58. Finally, we note for consistency that paragraph 3.53 of the Service Demand Module Specification Document shows that the “ISDN switch-off year” parameter (I.Par.30) has been set at 2023. Despite this treatment of ISDN in the ANM ComReg has recently refused the eir proposal to move ISDN BRA to end-of-sale at 30 January 2021 and to end-of-life at 31 December 2024.

Summary

59. Given its central role in the ANM, and the use of forecasts to set prices that are the basis of ComReg 20/81 and ComReg 20/101, the Service Demand Module as currently constructed and populated is not fit for purpose. There is a complete lack of meaningful calibration and as such it is not clear how it can support ComReg’s regulatory objectives.

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Q. 5 Do you agree with ComReg's preliminary views that the Geospatial module is appropriate for dimensioning the access network (copper and fibre) of a HEO with Eircom's network presence in Ireland? Please provide reasons for your response.

61. The Geospatial Module is used to determine the passive network elements required for 100% coverage of premises nationally using a BU approach. It outputs a table of network element asset counts by exchange. There is one output table for each of the following four geographic model scenarios: Urban Commercial, Rural Commercial, IA Copper Only and All Footprints, i.e., the whole country, assuming copper services in all footprints, and fibre services only in the urban and rural commercial footprints. The latter scenario therefore attempts to estimate eir's access network deployment for the whole country.
62. ComReg take as a "modified scorched-node" approach where the dimensioning of the access network is constrained by the location of eir's cabinets and exchange nodes and assigning premises to the nearest cabinet and exchange. ComReg claim that this approach will avoid many of the inefficiencies in eir's historic network layout and be a better approximation of the network layout that would be adopted by "a hypothetically efficient network operator deploying a fixed access network in Ireland today".
63. eir submits that the Geospatial Module is not appropriate for dimensioning the access network (copper and fibre) of a hypothetical efficient operator with eir's network presence in Ireland. eir considers that ComReg has:
 - a. provided insufficient transparency of the methodology and tools used;
 - b. failed to recognise the complexity of multiple demands for individual premise;
 - c. modelled unachievable efficiencies in rural areas; and
 - d. failed to provide evidence of meaningful calibration with eir's actual network.

We discuss each in turn below.

Insufficient transparency

64. It has not been possible for eir within the timeframe of this consultation to review in detail the workings of the Geospatial Module. Given the nature of the analysis and the data inputs used it is natural to use a database management system like PostgreSQL, however, this also increases non-transparency of the model. In particular, the Docker and PostGres application and proposed tools have not been used by ComReg before and our pricing and modelling analysts are not familiar with its functions. A clear example of is the Sky request to ComReg for assistance on restoring the draft ANM geospatial database extract.¹³
65. The description of the Geospatial Module in the Consultation paper only provides a brief overview with a sample of the engineering rules. Further, the description in the Specification Document is far too high level to adequately assess the detailed workings of the module. The most comprehensive section in the specification document on the Geospatial Module is on data preparation but it essentially only provides a list of sources with schematic diagrams and tables on how the database is populated, which again is of limited use to adequately assess the workings of the model. With regard to data cleansing the only reference is to 60 eir street cabinets with incorrect coordinates on the basis that map locations are not on the island of Ireland, or are outside the state. It is unclear whether other issues arose from data cleansing exercises and / or whether other data sources were simply taken at face value.
66. In summary, there is insufficient transparency of the methodology and tools used in the Geospatial Module for eir to develop an informed view of the appropriateness of the techniques used. ComReg's approach in this Consultation is not consistent with the meaning of consultation as provided for under Article 6 of the Framework Directive. ComReg provided workshops with interested parties as part of its consultation process to develop a model for mobile termination rates in 2016 and also invited interested parties to have bilateral workshops with ComReg – see ComReg 15/19. eir considers that ComReg must invite bilateral workshops with interested parties.

¹³ Information Notice - Operators correspondence on clarifications concerning the Access Network Model, Posted: 24 December 2020, Reference Number: ComReg 20/129

Demand driven problems

67. There is no evidence in the Consultation or specification document as to how the Geospatial Module addresses the issue of multiple service demands from an individual deliver point. The main sources of multiple service demands at an individual delivery point are the small businesses that characterise Irish towns and villages. Many of these have a requirement for several PSTN lines and a single broadband service but are too small to justify an ISDN FRA/PRA service. As discussed in the response to Question 4, the Service Demand Module has failed to address this issue which gives rise to a serious distortion in the division of service demand between Rural Commercial and IA regions.
68. In the context of the Geospatial Module there is an associated risk that the “per delivery point” approach will underestimate the assets used to serve towns and villages.

Unachievable efficiencies

69. In paragraph 5.58 of the consultation document ComReg acknowledges that a scorched earth bottom up modelling approach “*runs the risk of modelling a network with an unrealistic level of efficiency*” but then states in the following paragraphs “*that applying a scorched node approach ... avoids many of the inefficiencies that are inherent in Eircom’s existing network layout*”.
70. eir agrees, subject to adequate calibration, that a scorched node approach is a reasonable approach to modelling the access network for urban areas where there is a reasonable density of street cabinets per MDF, and premises to be served are reasonably close together. However, the approach is potentially problematic for provincial and rural exchange areas, where there may not be any street cabinets, or only a small number of cabinets serving only local housing demand. Here the approach can result in the modelled network having levels of efficiency that cannot be achieved in reality. Additional circuit routes and new capacity will arise over time, in order to meet demand. Therefore, while a network could theoretically be designed using cost optimisation algorithms, in practice incremental investment is unavoidable, rendering any network 'sub-optimal' compared with a desk-based exercise. While ComReg has acknowledged this fact it cannot be the case that ComReg also argues that the scorched node avoids inefficiencies as to how the

network was historically deployed. For example, existing circuit routes are tied to physical and local planning that not only play a major role in the design of the access network but also impose barriers to change – even on a hypothetical basis. Such constraints can also change over time – such as planning applications with local authorities but that is not to say the deployed network is inefficient or capable of being better deployed afresh today as proposed by ComReg’s model.

Lack of meaningful calibration

71. Calibration is especially important for the ANM as it aspires to forecast service demands and calculate investments and unit costs for over 3,000 distinct exchange-regions. ComReg claim that outputs have been validated and the model has been calibrated against eir’s actual numbers. However, detail or evidence of this calibration activity is lacking in the Consultation and specification document.
72. Paragraph 4.82 of the specification document refers to “output validation” in two instances. The first states: “*Outputs were validated and the model calibrated against eir’s actual numbers where available (e.g. eir has 1.5m poles, etc.)*”. This compares to 2.4m poles in 2022 identified by BRG in their review of the Capex Module. eir does indeed have ~1.5 million poles, but eir pole routes do not pass many remote rural delivery points. It is eir’s understanding the Geospatial Module builds an access network to pass all delivery points in the State, hence without further explanation this validation appears to identify a discrepancy. The second reference is the statement: “*Cartesian also compared the geospatial outputs against those produced by the Revised CAM where they can be compared*”, where footnote 51 makes clear that copper cable length is an example of one such comparison. eir submits that this is not a meaningful, nor sufficient, calibration for the cable asset. For example, in the original CAM the calibration for network assets such as copper cable was carried out directly with eir surveys for a sample of exchanges.
73. As part of the Consultation, there should be a top down calibration of the costs produced by the model against real costs experienced by eir in exchange areas and these should be presented to eir for consideration. The model specification document provides no factual evidence to assess the appropriateness of the assumed capex and opex cost split — a key determining factor of assessing

whether the basis of the building of assets across regions is robust. In this regard, a calibration must be carried out with respect to the dimensioning of the hypothetical efficient operator's network against the actual network of eir — in particular as the model purports to divide each exchange into regions of different levels of competition and range of services we consider it essential that we can validate the methodology as described.

74. When developing the CAM and the Revised CAM ComReg's consultants validated the bottom-up modelling of network assets (i.e., the outputs of the model) by comparison with the eir inventory. The table below is a view for the Revised CAM that was then discussed with eir to see if differences arose from the scorched node approach or from fundamental errors – and whether the differences were material in effect. No such calibration check has been provided as part of this Consultation.

Table 1: Example of previous calibration approach ✂

75. There was also a subsequent stage of calibration and validation check where three eir exchanges were selected for a more granular comparison to the outputs of the model for those exchange areas. There is no evidence of any such validation with the ANM. The limited levels of comparison of asset volumes available to eir from the Geospatial outputs into the Capex Module indicate serious concerns about copper cable asset volumes. eir has serious concerns regarding the integrity, robustness and general accuracy of the model, and must reserve its position to raise these concerns in the future, if these issues are not addressed to the satisfaction of eir in subsequent consultation procedures.
76. Further, copper cable volumes modelled on a bottom up basis using the Geospatial Module in Urban Commercial region are used as the basis for the calculated prices for LLU and SLU. These services are key inputs into the EVDSL and FTTC cost stacks. Hence, it is necessary to ensure, not only that the total copper asset per exchange is correctly modelled, but that it is correctly modelled within the Urban Commercial exchange-region, and further correctly modelled between E-side cables and D-side cables. There is no evidence that the necessary granular degree of calibration has been undertaken.

77. In summary, it is not possible for eir to evaluate whether the model is performing correctly and whether outcomes are consistent with those found in the real world. This is a material flaw. Without a proper calibration of the model there is no way of knowing whether the outcomes of the ANM provide a sound basis for cost-oriented price control.

NON-CONFIDENTIAL

Q. 6 Do you agree that the approaches to modelling costs in the Opex module are appropriate? Please provide reasons for your response.

78. The Opex Module uses as a starting point operating expenditure calculated from eir's 2018 and 2019 AFI. ComReg consider eir's accounts to be representative of an efficient operator operating eir's legacy network. These costs are then "re-based" by ComReg to reflect the costs that it considers a hypothetical efficient operator would incur operating and maintaining a recently deployed network and scaled to forecast opex in the selected year for the BU model. Further, operating expenditure is divided into four categories: direct cost, network cost, indirect cost and common cost. Direct, indirect and common cost is allocated between FTTH and copper lines on a per-line basis. Operating expenditure specific to pole and duct access are extracted and input into the PAM and DAM.
79. While eir agrees with the use of the eir AFI as a starting point, there are elements of the subsequent adjustment to the BU model and allocations to which we fundamentally disagree. These include:
- a. the use of unfounded efficiency adjustments;
 - b. problematic scaling of repair and maintenance costs;
 - c. using a small time period to calculate an average storm opex cost;
 - d. inappropriate allocation of operating costs to FTTH services;
 - e. recovery of common costs; and
 - f. incorrect modelling of provisioning operating costs;
 - g. inappropriate split between fixed and variable common costs;
 - h. failure to consult on working capital.

We cover each point in turn below.

Unfounded efficiency adjustments

80. In terms of efficiency adjustments, ComReg has taken the preliminary view that eir's TD costs, as recorded in the two most recent HCAs, are representative of an efficient operator, given the series of cost reduction programmes undertaken by eir

since 2013. Nevertheless, the ANM still includes significant efficiency adjustments when modelling BU costs.

81. eir has extracted operating cost from the confidential version of the Opex Module as shown in the table below.

Table 2: Overview of opex in ANM model ✂

Source: eir calculations

82. From the table it is clear that ComReg indeed has made significant efficiency adjustments to eir's actual costs and that these are forecast to reduce significantly over time. The majority of the purported efficiency adjustment is made to direct operating costs. From the AFI there is a reduction of nearly 40% to the direct operating costs used in ANM (not taking into account the reduction for CEI). eir understands that ComReg has used the Revised CAM to make this adjustment, but we have not been able to confirm the accuracy of the calculations made. eir submits that the level of the adjustments made in the ANM has not been justified by ComReg.
83. First, the efficiency adjustment is made to a cost data set (the AFI) which already contains considerable efficiency improvements in recent years. It is therefore unclear what further savings could be made. Indeed, the field force level after the proposed ComReg adjustment, would not be able meet the eir commitments on fault clearance, even at a much lower fault incidence rates.
84. Second, while most PSTN and FTTC faults are cleared to a cable clear code a substantial minority are cleared to the final drop or to the associated pole. Replacing an old copper feed cable with a new one, as would the case in the hypothetical network, will not affect the rate of faults cleared to drop poles and leads. It is also generally the case that time worked per service restored is greatest for faults in the final drop. This is in part due to travel time and in part that a fault in a drop wire generally only affects one service.
85. Third, we refer ComReg to the BRG analysis of the Opex Module. BRG identify several elements of the Opex Module that are questionable. For example, opex cost trends that are unrealistically set to 0%. As BRG notes, a generic cost trend would

at least be expected to take account of wage increases. Other cost trends should be based on best-estimate forecasts. It is unrealistic to assume that a new network could be more efficient than eir's existing deployed network and for that new network to become even more efficient over time to the extent that it offsets positive opex cost trends. As set out in paragraph 78, and as recognised by ComReg, eir has undertaken a significant cost efficiency transformation and given the level of SLAs and USO obligations any further opex savings assumed by ComReg is unrealistic.

86. All in all, eir submit that further efficiency adjustments to an already efficient data set of operating costs based on actual incurred costs must be based on a detailed analysis confirming that further cost reductions are in fact possible. This could include a benchmarking or technical analysis of operating practices. As it stands, eir submits that the current version of ANM contains unsubstantiated operating cost reductions leading unattainable levels of "hyper-efficiencies" and ultimately an under-recovery of properly incurred efficient costs — leading to a failure to meet regulatory obligations including Regulation 13(2) which requires that to encourage investments by the SMP operator, ComReg, when considering a price control, takes into account the investments made by the operator and allow the operator a reasonable rate of return on adequate capital employed.

Problematic scaling of R&M costs

87. While repair and maintenance (R&M) costs is initially derived from eir's accounts as discussed in the previous section, ComReg has modelled a decline over time as the number of users on the copper network declines per the Service Demand Module. The assumption that R&M is relatively a variable cost based on demand is incorrect. See our response to Question 9 for more detail on this point.

Failure to account for variance in storm opex

88. A significant proportion of annual operating costs are impacted by weather conditions. For assets in the access network poles and the lines that run on them are particularly exposed to the storms and other related extreme weather conditions. Year on year, the operating costs eir faces to deal with particular weather conditions can therefore vary considerably. In the table we have summarised the storm related operating costs from the AFI.

Table 3: Storm Opex related to copper repair 2016 – 2020 ✂

Source: eir calculations

89. As can be seen from the table there is a significant variance in cost during the past 5 years. While there would appear to be downward trend in the costs from 2016 to 2020 it should be noted that in FY16 Ireland had a significant windstorm season and was the most active to date leading to particular high opex in that year. The season was especially notable for the amount of rainfall that caused flooding. Given that climate models show that, with climate change, the planet is likely to experience more extreme weather in the future it would be reasonable to expect a repeat (or worse) of the FY16 windstorm season also in the future. To cater for this variance in storm opex eir submit that ComReg should average over a larger number of years from the AFI. Specifically, taking an average over 5 years from the AFI instead of two would appear to be more appropriate. This is also particularly relevant as ComReg has proposed a five year price path and this should lead to a more stable path as opposed to re-opening the price path to account for changing weather conditions on an ad-hoc basis.

Inappropriate allocation of costs to FTTH

90. See paragraphs 269-280.

Recovery of common costs

91. ComReg proposes that common cost is only allocated between copper and fibre based on the number of services in the commercial areas. For the reasons set out in paragraphs 269-280, it is not appropriate to include FTTH lines in that calculation. In addition, as noted in the BRG Report “A large number of premises do not have an active fixed-line service, and these premises are not evenly distributed across footprints. The Urban Commercial Area has the highest penetration rate of active fixed line services, followed by the Rural Commercial Area and the IA.¹⁴ This means that any allocation based on total premises will be incorrectly skewed towards the IA and away from the Urban Commercial Area, resulting in proportionally more copper services being allocated to the IA and fewer to the Urban Commercial Area than is actually the case. This will then affect other allocations in the ANM

¹⁴ The current modelling contains a trend to increase the penetration of fixed-line services in the Rural Commercial Area and the Intervention Area to the level seen in the Urban Commercial Area. See Consultation 5.42. In the Non-Confidential Service Demand Module, 81% of Urban Commercial premises have an active fixed line service, compared to just 49% of IA premises.

modelling. In particular, it would appear to affect the common cost allocation: as described...common cost is allocated between copper and fibre based on the number of services in the commercial areas, so having fewer copper services in the Urban Commercial Area will reduce the amount of common cost allocated to copper". As such, this needs to be corrected for in the ANM.

92. Finally, consistent with ComReg's approach to re-distribute the recovery of those costs, and in light of the fact that the prices proposed by eir under on a voluntary commitment basis are below that provided by the ANM, eir proposes that all unrecovered cost from those services based on those prices is re-allocated across the remainder of eir's legacy services. This also recognises that as services migrate from eir's network the ability to recover those total costs will fall on its remaining wholesale products.

Incorrect decline in provisioning operating costs

93. The ANM incorrectly assumes a rapid decline in provisioning operating costs over the price control period. The ANM assumes that provisioning costs are directly linked with number of new PSTN WLR connections which per the model have a very rapid decline and is zero by 2025.
94. Even though the total number of copper telephony services is declining year-on-year there is still a substantial provisioning cost of which only a small part is due to new (to the network) connections. Therefore, there is a manifest error in the Opex Module where the total level of this cost is projected forwards pro rata to new connections as modelled by the Service Demand Module.
95. The AFI for FY 19 shows these new connections at 11,988. The output from the Service Demand Module then reduces the volume of connections by 3,000 for each of the next three years - so that by 2022 the actual provisioning costs from FY19 is reduced in the Opex Module in FY 22 to . However, as stated above, the bulk of the provisioning costs are driven by service moves and re-connections which is a form of activity driven by the size of the fixed telephony base and not solely by the demand for new services.

96. In short, PSTN services will continue to be provisioned in range of ways (irrespective of the actual number of new to network connection) until very shortly before copper switch-off is completed and the provisioning costs output from the Opex Module must reflect this to ensure that the legitimate costs can be recovered from PSTN WLR rental revenues.
97. eir proposes, consistent with the approach set out in the BRG Report, that in order to correctly account for the decrease in provisioning costs over time the ANM should instead scale the provisioning operating costs in line with the decline in total active copper lines.

Inappropriate split between fixed and variable common costs

98. eir has undertaken significant efficiency adjustments across the business in recent years and it is unclear whether further savings can be made.¹⁵ For a costing perspective this means that operating costs, and common costs in particular, to a larger extent will be fixed rather than variable. This should be recognised by ComReg in the ANM. The ANM model uses a number of parameters to estimate the split between fixed and variable common costs. ComReg has not provided any justification for their choice of parameters. We discuss each in turn below:
99. The Consultation states that *“Common IT costs relate to general IT costs such as corporate systems and infrastructure but exclude IT systems which have a specific function such as billing systems, network management systems, etc. 60% of common IT costs are assumed to be fixed with the remaining costs varying depending on the amount of direct costs compared to the base case scenario”*. eir has critically reviewed these costs and considers that given the current sizing of the IT division and the fact that the renegotiations with vendors in terms of support contracts are largely complete these costs are mostly fixed. The IT cost base has never been substantially driven by headcount. In conclusion we believe a figure of 90-100% is more appropriate.
100. The Consultation states that *“Common Accommodation costs primarily relate to accommodation associated with the other common cost categories, e.g. office*

¹⁵ See for example eir annual report for year end 30 June 2020 (page 8 and 9) on the on-going focus on cost control through IT transformation, simplification and process improvement.

space associated with central finance, corporate strategy, central IT, etc. and 90% of common accommodation costs are assumed to be fixed". eir considers that this is appropriate given the rationalisation of our property portfolio.

101. The Consultation states that "Common Transport costs include transport management and 30% of common transport costs are modelled as being fixed". eir considers that a higher % needs to be deemed fixed as we have moved away from leasing vehicles to purchasing our own fleet again. The majority of fleet depreciation is booked to the transport cost centre rather than being assigned to individual cost centres. Given the difficulty in disposing of specialised vans and trucks we believe that a figure closer to 90% is appropriate. The transport team that manages the fleet is also in the range of 1 to 2 FTE so rescaling such costs is not reasonable.
102. The Consultation states that "Common Personnel Administration costs include the costs of the human resources function and 90% of personnel administration costs are modelled as being fixed." eir considers that given that there are only 30 full time employees in human resources to support the whole eir group of over 3,000 employees that this represents a significant level of efficiency and effectiveness and therefore should be updated as being 100% fixed as it is not capable of being rescaled.
103. The Consultation states that "The Other Common cost category includes corporate functions such as finance, legal, regulatory, strategy and other business management functions, and 100% of these costs are modelled as being fixed. Working capital is also included in the Other Common cost category." eir considers that given the recent reorganisation of Central Services this is appropriate.

Failure to consult

104. The ANM now also includes working capital. However, there are only two brief references to this in the Consultation and only to the extent that it included in "Other Common cost category" and that the ANM has "elements of working capital such as debtors, creditors, stock, etc.". There is no consultation or guidance provided by ComReg as to the assumptions it has used in deriving this figure.

105. From reviewing the model eir has been able to ascertain that, under MCE there is a line item “Common Other” with a value of negative \pounds that is assumed to be the assessment of working capital for the AFI year in question relating to the eir access network services. Under depreciation there is also a line item “Common Other” with a value of negative \pounds that is assumed to be a depreciation charge on the negative working capital in the AFI year. The full “depreciation” and a “return on capital employed” (MCE x 5.61%) is then applied as a negative common cost of \pounds per annum to all access network services on the same basis as the positive common costs. This negative cost is treated as being 100% fixed (i.e., no decline in direct costs or revenues will give rise to a decline in the negative working capital).
106. There are two issues of serious concern to eir in the treatment of working capital evident in the Opex module of the ANM. The first is that this treatment is without precedent. In previous cost modelling used to inform access network service price controls working capital was excluded. This was done in recognition of the possibility of levels fluctuating considerably from year to year due to changes such as policy on supplier payment periods and billing policy.
107. The second issue relates to the use of the AFI reports to populate the Opex Module with a figure that purports to be a full assessment of working capital for access network services. In the preparation of the Separated Accounts – of which the AFIs are specific outputs – the revenues from wholesale access services include internal revenues from the downstream retail businesses. The accounts do not include internal debtors. As a result of this treatment directed by ComReg the working capital calculation for the wholesale access service is not complete. The direct use of the AFI as an input into the Opex module presents a distorted view of working capital at the wholesale level.
108. eir submits that working capital should be removed from the model. The characteristic between the time difference between paying and collecting receipts is part of ordinary course of business and is subject to commercial financial decisions and subject to change. In any event, as set out above, the assumptions as to ComReg’s calculations have not been explained and interested parties must be provided the opportunity to understand its calculation which is not described.

NON-CONFIDENTIAL

Q. 7 Do you agree with ComReg's preliminary views that the costing approaches adopted in the Capex module are appropriate? Please provide reasons for your response.

110. The Capex Module calculates the value of capital expenditures, it collates the inputs from the other modules of the ANM to derive unit costs for services. A bottom-up approach is used for LLU, SLU, NGA Link, POTS based FTTC¹⁶, dark fibre and FTTH connections, and a top-down approach for PSTN-WLR and CG SABB.
111. In their review of the Capex Module, BRG note that the calculations are conceptually straightforward, but complex. A key part of the parameters used in the Capex Module to cost the network is sourced from the Geospatial Module. BRG state that the bottom-up approach is unusual since the forecast of the number of network elements is static and is not linked to volume of premises. Further, they find multiple ad-hoc calculations which are not well documented that reduce the transparency of the model and make difficult a thorough review. Regarding the top-down approach BRG views it as overly complicated with results that rely heavily on subjective assumptions by ComReg on future network developments and projections. See also paragraph 66.
112. BRG specifically consider two issues that have a significant impact on results, namely the i) assumption that in the period 2020-30 the capital costs related to copper is 50% of those recorded in 2019 for those exchanges where copper is forecast to remain active; and ii) the impact of copper switch-off on stranded assets.
113. With regard to the 50% reduction BRG find that ComReg's assumption is inappropriate and will lead to a significant understatement of the cost of WLR and SABB. eir agrees. The reduction in the investment in the copper network will be minimal. BRG estimate the impact on the unit cost of PSTN-WLR of the reducing the 50% assumption to 0%. Their results are presented in the table below. Additional scenario calculations are presented in section IX.2 of the BRG report.

¹⁶ There is a significant inconsistency as to how the POTS-based FTTC costs are calculated which the Consultation paper describes as being largely calculated Top-Down and the Specification Document stating that it is Bottom-Up. In addition, the version of the model eir received the BU methodology was also the default parameter.

Table 4: Impact of reduction of Capex on the price of PSTN-WLR (€/line/month)

	2020	2021	2022	2023	2024	2025	2026
50% cost reduction	16.13	15.79	15.45	15.10	14.93	14.87	14.94
No cost reduction	16.28	16.06	15.84	15.61	15.57	15.69	15.99

114. Regarding the timing of switch-off and of the deployment of FTTH fibre networks BRG note that the Capex Module fails to account for the impact that copper switch-off will have on the ability of eir to recover fully the investment it has made in the network. The ANM indicates that a significant proportion of copper related capex will not be depreciated at the time of switch-off. Specifically, BRG note that the ANM indicates that the NBV of copper assets in 2028, the year in which ComReg assumes all premises other than some in the IA will have copper switched off, is \approx ¹⁷. This means that such assets will be stranded if an adjustment is not made to model, ultimately leading to an under recovery of investment by eir. This would be against ComReg's regulatory obligations. An accelerated depreciation will need to be calculated to allow eir to recover the relevant cost over the price control period.
115. The latter point on the ANM's inability to recover costs can be exemplified by the 7 year MSAN asset life used in the model. MSAN deployment has just started (mid FY21) and will take three years to complete. In the current version of the Service Demand Module copper switch-off starts in FY25 and finishes in FY30. The combination of these two suggest that the median of the MSAN deployment will be end of FY22 and the median of the copper switch-off will be at the end of FY27. This indicates that the average economic life of the MSAN will be close to five years and not 7 years as used in the Capex Module.
116. The key driver of asset stranding and inability to recover costs is the simplified and inappropriate implementation of the copper switch-off in the ANM. Without a significant adjustment to the model (not just the Capex Module) to properly account for copper switch-off the outcomes of the ANM will be erroneous. Without

¹⁷ This is ComReg's estimate of NBV of copper assets at the end of 2028, i.e. after all copper links in the commercial footprints and most premises in the intervention area have been switched off. This figure does not include all assets which were stranded due to premises switched off in the period 2025 to 2028.

correction ComReg's proposal is inconsistent with Regulation 13(2) which requires that ComReg takes into account the investments made by the operator and allow the operator a reasonable rate of return on adequate capital employed. Accordingly, eir submit that costing approaches adopted in the Capex Module are not appropriate at this stage.

NON-CONFIDENTIAL

Q. 8 Do you agree with ComReg's preliminary view that the assumptions made around FTTH connection costs in the ANM are appropriate? Please provide reasons for your response.

117. In the Consultation, ComReg distinguishes between standard and non-standard configurations. The discussion of these is a reasonable characterisation of the situations encountered during the connections made to the rural commercial FTTH deployment. The characteristics of the standard connection are that the premises is sufficiently close to the fibre DP and to the pole delivering an overhead drop to a building with 50 metres of the curtilage, or is served through a cleared duct carrying and existing copper drop. In rural FTTH the principal instances of non-standard connections are where new poles are needed to deliver an overhead drop and/or new duct must be provided or cleared.
118. In urban FTTH deployment, the bulk of eir connections over the price control period for standard and non-standard connections will differ significantly from that of the rural commercial cases. As urban poles are generally only used for copper drop wires, and as fibre DPs will only be deployed at every second pole a substantial number of standard deliver fibre drops will travel both down footway duct and overhead from the final pole to the premises served. There will also be standard connections from DP in boxes through existing ducted drops delivered underground to the premises served.
119. The urban non-standard connections present at least three additional challenges. At certain stages of urban housing development eir historically deployed armoured and buried copper leads. This infrastructure cannot be re-used so every new FTTH path will require the mole-ploughing of a new duct with the associated cost – this can cost as much as € per home. Finally, many retail businesses, and the residential premises above them, including terraced housing estates, are served with copper drops characterised as “slung leads”. It is not yet clear whether this approach is sustainable for Fibre drops; and, if it is not, how should it be replaced.
120. From a low base in Ireland an increasing proportion of consumers are living in multi-dwelling units (‘MDUs’). Delivering FTTH services to these residences presents a range of challenges and eir is still considering the standard form of deployment. So

it is not clear yet which will be standard, and which non-standard, connections for service to residents in MDUs. Currently there is considerable uncertainty for network operators, property developers, MDU residents, and MDU management as to who has control and rights to access these assets. A clear regulatory policy agreed by those stakeholders will support the more efficient and timely delivery of FTTH to these premises.

121. In summary it is too soon, for a number of reasons, to understand all the circumstances and costs of non-standard connections for urban FTTH. The level of Urban FTTH connection costs implicit in Table 19 of the Consultation paper is consistent with the original eir proposal for urban FTTH deployments. Assuming a 50:50 split between urban and rural connections the implicit cost per urban connection is €250. This would be consistent with a targeted and partial deployment of urban FTTH where only premises with overhead copper drops or ducted underground leads would be passed. However, as noted above the IFN urban FTTH deployment going forward will result in a higher proportion of non-standard urban FTTH connections due to (i) the requirement to use a mole plough for many underground fibre drops, ii) slung leads, and (iii) the requirement to find an internal path within the MDU from the DP location to the end-user dwelling where no mini-ducting is available.
122. See also eir's response to Question 17.

Q. 9 Do you agree with ComReg's preliminary views that the price for PSTN WLR should be based on a price per year for each year of the price control period based on the ANM modelled outputs for that year? Please provide reasons for your response.

124. In ComReg's market analysis consultation 20/46, in which ComReg has determined eir's alleged dominance in error, ComReg has not demonstrated that its proposed set of remedies are appropriate, necessary and the least onerous option available. In particular, given eir's voluntary commitment including pricing behaviour, ComReg's pricing remedies is inconsistent with Section 12 of the Act and Regulation 16 of the Framework Regulations and in accordance with Regulation 8 of the Access Regulations, which provides that ComReg must ensure that the proposed obligation is based on the nature of the problem identified, and proportionate and justified in light of ComReg's statutory objectives. Consequently, eir does not agree with ComReg's preliminary view that the price for PSTN WLR should be based on a price per year for each year of the price control period based on the ANM modelled outputs for that year. See also eir's response to Question 1.
125. Similarly, and without prejudice to this view, eir has identified a number of inappropriate assumptions and modelling errors in the ANM. When corrected the resulting price per month for each year of the price control is materially higher than that proposed by ComReg and is consistently above the extant national price set today.
126. In particular, eir considers that ComReg has;
- a. failed to fully consult on all the adjustments that are necessary in bridging the returns evident in eir's accounts to those envisioned by the Revised CAM;
 - b. proposed a model which is unnecessary complex and results in bewildering modelling outcomes (including Service Demand volumes) which are far removed from both reality and cogent modelling outcomes;
 - c. stranded the recovery of eir's efficiently incurred costs;
 - d. proposed unsubstantiated cost reductions which are not capable of supporting the network;

- e. failed to correctly model how costs will evolve as a result of copper switch off and copper decommissioning; and
- f. made a series of further modelling errors.

127. Each of these is discussed in turn below. At the end of this section the resulting corrected annual PSTN WLR prices¹⁸ are presented (per the non-confidential model received by eir) and a more appropriate price path is proposed by eir.

Failed to consult on all the adjustments required in bridging eir's returns to the outputs of the Revised CAM

128. In paragraphs 3.50 to 3.65, ComReg set out some of the differences that can arise between the returns stated in eir's Historic Cost Accounts and those envisioned by ComReg when setting prices pursuant to ComReg D03/16. Broadly, ComReg explains (without quantification) that certain adjustments are necessary to eir's HCA, namely;

- Reported storm costs in a given year may be higher or lower than forecast;
- The line card component in the model is set with reference to a new asset (as modelled by BU-LRAIC+ approach) whereas the costs reflected in eir's accounts are based on existing assets that have been depreciated over time;
- The change in prices of the PSTN WLR element of POTS-based FTTC bitstream compared to that derived from the billing system of eir (used to inform the Historic Cost Accounts).

129. Despite the lack of quantification of these changes in the Consultation, ComReg concludes that it would have expected to see eir's returns align closer to the regulated WACC of 8.18%. It is unclear how ComReg can make such a statement when it has not conducted any analysis to validate its claim.

130. From a transparency consultation perspective this is a particularly alarming presentation of ComReg's view. Not only did eir share the quantification of these changes with ComReg (with the exception of the POTS-based Bitstream change from the billing system) at a meeting on the 16 January 2020 but it identified a

¹⁸ There are a number of identified adjustments and corrections which eir has been unable to adjust.

further required bridging adjustment to eir's HCA which ComReg has failed to surmise. As presented to ComReg in January last year, due to the heavily depreciated nature of the copper network including in the active equipment the accounting returns do not present an accurate reflection of the economic returns available in the market – two further adjustments are required to the Revised CAM than those described in the Consultation. First, an account must be taken of working capital between the Revised CAM and HCAs. Working capital includes for example the difference in the amount currently owed by operators for purchasing PSTN WLR (due to payment terms days) and the accounts payable by eir. Those payment terms influence the Mean Capital Employed and therefore the Return of Capital Employed evident in eir's accounts and those used by ComReg in its comparison to the WACC in paragraphs 3.50-3.65. The working capital of eir in a given year is a function of commercial financial decisions and outside the scope of regulation. Therefore, to correctly present the returns envisioned by the Revised CAM to derive returns of 8.18% (the WACC at the time) to eir's HCA accounts these need to be adjusted for — as there (correctly) is no provision for working capital in the model. Second, storm events can cause both repairs which are accounted for as operating costs and capital expenditure costs. Costs which are capitalised are also captured in the Mean Capital Employed. Conversely, the Revised CAM only assumed storm damage would result in operating costs. Therefore, to make a fairer comparison of those costs eir's HCA returns needs to be adjusted for both operating costs and capital costs associated with storm damage.

131. As is evident from the table below, in the last three financial years when properly adjusting for costs it is evident that the economic returns have been consistently below the regulated WACC.

Table 5: Economic returns of PSTN WLR below the regulated WACC ✕

132. As is evident from Table 5 even before average year storm events are considered the returns evident in eir's accounts when appropriately adjusted do tend towards the regulated WACC in existence at the time of 8.18%.
133. It is also worth noting that ca. 75% of revenues for PSTN WLR year-on-year are derived from eir retail. Historically there have also been concurrent regulatory retail

margin squeeze obligations set by ComReg which used the PSTN WLR wholesale price as an input in their assessment. This included a retail-minus 14% obligation which set the wholesale price of PSTN WLR for the period 2007-2016 (at the same time ComReg also imposed a retail price cap on PSTN at €20.96 per month – which is still in existence today). Over that period the Irish market successfully attracted a number of international retail providers. In that sense, it could be considered that both the regulated wholesale price and retail price set by ComReg delivered positive outcomes for Ireland. However, ComReg now appear to be incorrectly retrospectively altering the conditions of those outcomes.

134. Finally, given that the accounts are reported on a national basis and are already tending towards the new WACC of 5.61% and that the higher cost lines (i.e., the more expensive and longer network lines required to connect a customer and overall deployment) are based in the Regional FACO market which will be subject to increasing migration to NBI (and other alternatives including mobile), means that the extant price for PSTN WLR at €16.59 for the Regional FACO market appears low to ensure continued cost recovery. This is indeed the case, when the assumptions in the ANM are corrected (as identified in this response and the BRG Report) and the PSTN WLR price increases significantly over time (which is also intuitively to be expected). This is one of the reasons why in February 2020, eir made a voluntary commitment to ComReg to fix the wholesale price of PSTN WLR for 5 years at €16.82.

Proposed a model which is unnecessary complex and results in bewildering modelling outcomes

135. The over-arching problem with the ANM is the complexity of the model structure with linked excel spread sheets that requires iterative feedback from later modules to run the necessary scenarios making it unclear whether correcting cost, volume, and annuity treatments in individual modules will result in a robust whole. As noted in the BRG Report “*Worksheets are not always built linearly, with some cells drawing on information that is above them in the worksheet, and others drawing on information that is below them. This circularity within the worksheet structure is not good modelling practice” [emphasis added].*

136. It is surprising to eir, that for such an economically important matter that a more robust and functioning model is not available to allow eir to properly assess whether the approach and costing adopted by ComReg is reasonable or realistic. In terms of modelled outcomes there is a number of materially concerning modelling assumptions that depart materially from actual real world outcomes.
137. It is clear that no evaluation of the model has been undertaken and no calibration to eir's top down accounts or actual network has been considered by ComReg to ensure that the model is functioning correctly and is therefore capable of ensuring cost recovery. As presented it is evident that the ANM is not fit for purpose. See eir's response to Questions 4, 5, 6, and 7.
138. Similarly, ComReg assumes that PSTN WLR volumes will continue to be reasonably constant during most of the forthcoming price control period and will only decline significantly at the end of the price control period, as a result of the deployment of FTTH. ComReg does not present any sensitivity analysis of the impact of PSTN WLR prices against a range of scenarios for migration from eir's copper network to the State funded FTTH network in the Regional FACO market. Instead ComReg has only used the voluntary information provided by NBI regarding its business case. Of particular relevance here is that the actual recovery of serving higher rural cost areas of eir is dependent on the timing of roll-out and migration/take-up rates of the State subsidised national broadband intervention plan. As set out in paragraph 135, given the lack of flexibility of the ANM provided to eir and the lack of consultation by ComReg on the impact of varying migration scenarios on PSTN WLR prices over the period — coupled with the fact that ComReg proposes to favour not revisiting the price path over the price control period — increases the level of uncertainty for eir's actual cost recovery. In particular, as NBI deploys its network the Regional FACO market will become smaller (i.e., more eir exchanges will become competitive and equally the remaining regulated area is smaller) and the remaining regulated PSTN WLR lines on eir's network will represent the longer more costlier copper loops which will be subject to continually decreasing demand (and therefore requiring corresponding higher wholesale prices over time to allow cost recovery).

Stranding eir's efficiently incurred costs

139. In paragraph 6.16 of the Consultation, ComReg states *"It is also possible that not all cable costs will be fully depreciated before the copper network is switched off. However, prior to the 2018 Pricing Decision Eircom has been recording excess returns for copper access services and ComReg expects that these should be sufficient to ensure that Eircom will have fully recovered all of the investments it has made in the copper cable network over the economic life of the assets."*
140. In other words, ComReg are proposing that the proportion of costs not recovered from both existing assets and new assets (to be incurred by eir over the price control period) by the time customers have migrated over to the State funded FTTH network will not be recovered from regulated prices. This is commonly referred to as *asset-stranding*. For regulatory policy reasons, NRAs avoid implementing pricing methodologies and other regulatory levers which could result in asset stranding. As stated recently by Ofcom (ComReg's peer) *"If such stranded assets are not appropriately taken into account in setting the price for BT's other services, this could lead to perceived regulatory instability or uncertainty which could reduce BT's incentives to invest in infrastructure in the future"*. It is important to note that the incentive to invest is a broader policy question as result of regulatory certainty overall as opposed to investing in a specific geographic area or service/technology.
141. It is also important to note that the main risk of asset cost recovery where certain wholesale services are mandated by ComReg is a regulatory one. By imposing cost-orientation on eir's wholesale services, ComReg is implementing a commitment and regulatory signal/certainty (as explained by ComReg in 2016 pursuant to ComReg D03/16 when setting PSTN WLR for the forthcoming period) that:

"(a) Impact on Eir

- This approach should ensure that Eir does not under / over recover costs – this approach should allow Eir to recover its actual efficient costs plus a reasonable rate of return nationally.*
- This approach should ensure that any money efficiently invested by Eir in maintaining or upgrading its network should be recouped by it in line with the*

HCAAs. Therefore, this should encourage further investment by Eir as it is assured that what it invests can be recovered.

(b) Impact on OAOs

- *This approach should provide the appropriate build or buy signals in the Modified LEA.*
- *This approach should ensure that OAOs only pay for those actual investments made by Eir especially for investment Outside the Modified LEA.*

(c) Impact on end users

- *This approach should ensure that end-users are not subject to excessive prices while appropriate incentives are in place for continued investment and competition in the relevant areas.”*

142. For ComReg to now propose in 2020 that it is stepping away from those very regulatory commitments pursuant to ComReg D03/16 is alarming to eir in the context of regulatory certainty and its future investment. In particular, not only is ComReg’s proposal not allowing eir the full recover of its capital expenditure on copper assets, i.e., depreciation and a fair return to cover the cost of capital that it has already deployed since 2016 but it is also signalling that all additional investment by eir in copper asset expenditure incurred for on-going maintenance/repair and provisioning requiring during the price control period will not be recovered. Such an approach is also wholly inconsistent with ComReg’s regulatory objectives provided by Section 13 (2) of the Access Regulations and ComReg’s reasoning set out in paragraph 4.50 – which for the benefit of the reader is given here in full:

“While the 2013 EC Recommendation is not specifically relevant to FACO (PSTN WLR), ComReg considers that the objective of the 2013 EC Recommendation remains important in the context of PSTN WLR, i.e. to ensure that ‘operators can cover costs that are efficiently incurred and receive an appropriate return on invested Capital’. This indicates that the pricing for PSTN WLR should allow recovery of the efficiently incurred costs of the copper loop in the Regional Low Level FACO Market” [emphasis added].

143. For reasons of fluctuation in local demand, preventative maintenance and service assurance including Universal Service Obligations, during the price control period, eir will be required to invest in new overhead copper cable (asset life 15 years) and underground copper cable (asset life 20 years) despite declining demand for copper services and copper switch-off with a median arrival at the end of FY27.
144. ComReg's policy intervention is failing to mimic the outcomes of competitive markets. eir submits that there is a requirement to adjust the use asset lives that reflect the effective economic life for the projected new investments – consistent with ComReg's interpretation of the 2013 EC Recommendation set out in paragraph 4.50 of the Consultation. The same adjustments should also apply to the lives of recent copper investments where the period that revenue is available from that investment is shorter than the regulated asset life. Without adjustment, ComReg's proposal is perversely signalling that it may be more economical to pay penalties for missing service assurance commitments than undertaking new required copper investments. This situation only deteriorates the closer investment is to the proximity of being migrated to the competing State funded FTTH network, since the quantum of unrecovered cost increases.
145. Finally, ComReg's view that *"prior to the 2018 Pricing Decision Eircom has been recording excess returns for copper access services and ComReg expects that these should be sufficient to ensure that Eircom will have fully recovered all of the investments it has made in the copper cable network over the economic life of the assets"*, is concerning from a regulatory certainty perspective and creates regulatory instability (as outlined in paragraphs 140-141). ComReg has entirely failed to consider the positions and decisions it has previously made. For example, in ComReg's 2018 Pricing Decision, in response to eir's submission that ComReg is not allowing eir a fair bet on its FTTC investment (which consistently posted returns below the regulated WACC for six years, five of which posting significantly negative returns), ComReg reasoned that *"Eircom began to deploy its network in 2013 and the published Separated Accounts for the following years indicate that Eircom continued to record returns above the regulated cost of capital in the Wholesale Access Market, as the higher level of returns in wholesale fixed narrowband access more than compensated for the lower returns experienced in*

wholesale fixed broadband access. Despite the price reductions for copper based services following from the 2016 Access Pricing Decision, the level of returns reported in the Wholesale Access Market in the 2016/2017 Separated Accounts are still above the regulated level of return of 8.18%, indicating that, even allowing for the increase in NGA investment as it deploys a rural FTTH network, Eircom is not being prevented from getting a ‘fair bet’ on its investments” [emphasis added]. In other words, ComReg considered that the losses incurred by eir for its FTTC investment were offset by its profits in PSTN WLR and therefore eir had recouped its ‘fair bet’.

146. Consequently, ComReg cannot now suggest that historic profits in PSTN WLR can (now also) justify the deliberate stranding of copper costs in the Regional FACO market as ComReg has already reasoned that those profits¹⁹ offset other losses. ComReg’s current proposal therefore represents a significant turning point and in order to provide a regulatory environment that enshrines ComReg’s statutory objectives of promoting competition, investment, cost recovery and benefits to end-users it must correct its current proposal and ensure that copper costs are not stranded in the Regional FACO market.
147. In order to correct this error the ANM needs to be updated such that an accelerated depreciation will be applied and spread across the 5 years of the charge control – such an accelerated depreciation approach has been adopted by both ARCEP and Ofcom (ComReg’s peers). ComReg must ensure that the net present value of the existing assets and forward-looking capital expenditure on copper assets costs is equal to the net present value of the depreciation profile plus the net present value of the return on capital profile were the assets to be recovered over their normal book lives. This would allow eir the opportunity (but not complete certainty) to recover efficiently incurred costs and would increase the nominal costs by around 2%²⁰. It is not possible from the versions of the model provided to eir to make this correction. Alternatively, while the above correction would still be required for existing assets eir has provided an additional proposal in respect to forward-looking capital expenditure on copper assets – see Annex 1.

¹⁹ Which as demonstrated by eir in paragraphs 128-0 require further adjustment to accurately reflect the available economic returns.

²⁰ This is ComReg’s estimate of NBV of copper assets at the end of 2028, i.e. after all copper links in the commercial footprints and most premises in the intervention area have been switched off. This figure does not include all assets which were stranded due to premises switched off in the period 2025 to 2028.

Proposed unsubstantiated cost reductions which are not capable of supporting the network

Provisioning

148. The ANM incorrectly assumes a rapid decline in provisioning operating costs over the price control period. The ANM assumes that provisioning costs are directly linked with the number of new PSTN WLR connections which per the model has a very rapid decline and is zero by 2025.
149. Even though the total number of copper telephony services is declining year-on-year there is still a substantial provisioning cost of which only a small part is due to new connections. Therefore, there is a manifest error in the Opex Module where the total level of this cost is projected forwards pro rata to new connections as modelled by the Service Demand Module
150. See also eir's response to Question 4.

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Repair and maintenance

151. While repair and maintenance (R&M) costs is initially derived from eir's accounts, ComReg has modelled a decline over time as the number of users on the copper network declines per the Service Demand Module. However, irrespective of the accuracy of the Service Demand Module (see eir's response to Question 4) the assumption that R&M is relatively a variable cost based on demand is incorrect.
152. Based on the revised Service Level Agreements ('SLAs') framework put in place and the recent "right-sizing" exercise undertaken by open eir Networks, the modelled adjustment that implies that R&M costs can be scaled down is unrealistic and results in costs which are not capable to meet either eir's USO obligations or achieve the SLAs for OAOs.
153. This is because eir has agreed a new repair SLA with industry stakeholders for copper services with a 2-day repair target. In addition, ComReg has directed different national and sub-national service availability targets for open eir under the USO. The service availability results from a combination of the Line Fault Index ('LFI') and Fault Clearance Rates. In general the sub-national areas where the target is challenging have a higher LFI and faults that require more effort to clear so Service Assurance headcount per working line must be higher than the national average.
154. While open eir met the service availability targets for all three sub-national areas in 2017, 2018 and 2019 it is clear that the most challenges are in the NBP sub-national area and because this area does not map to particular exchanges it is not straightforward to understand how many of the Service Assurance field force are deployed in that area. In addition, the State funded FTTH network will be deployed using a ribbon development. This means that it is not possible to re-deploy or stand down teams in certain geographic areas as the USO obligations and SLA requirements remains in those exchange (and combined deployment coverage) areas until the earlier of either all customers in that exchange being migrated to the State funded FTTH network or eir is allowed to undertake a copper switch-off programme for that entire exchange. Until this occurs, R&M costs are largely an unavoidable cost whose value (despite continued decline in the demand for copper service) has remained relatively stable. While ComReg has some discretion in terms

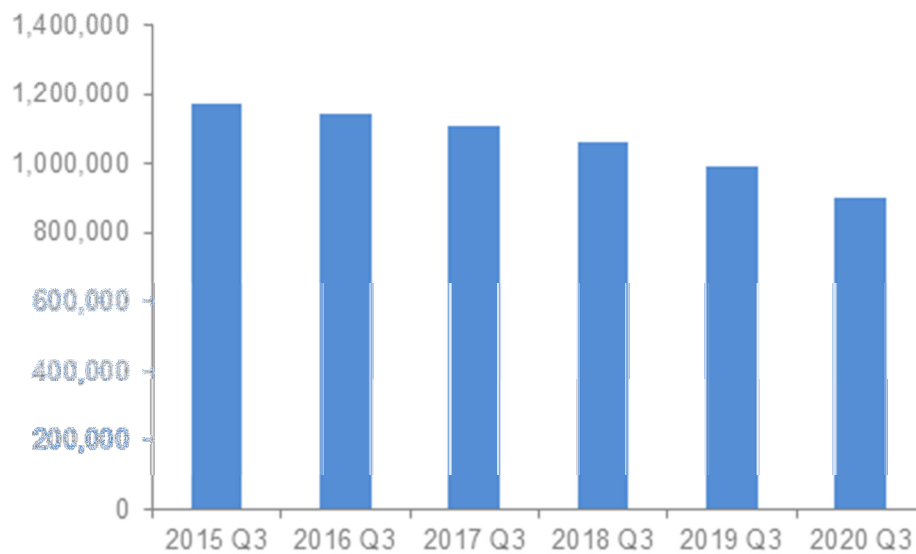
of input values, ComReg cannot knowingly ignore the real costs through “simplified” modelling assumptions —which result in significant costs being understated. See also eir’s response to Question 4, 5, 6 and 7.

155. As currently modelled there is a real danger that ComReg’s level of assumed saving/cost reduction could lead to unrealistic and unattainable levels of efficiency resulting in under-recovery of properly incurred efficient costs and a failure to meet regulatory obligations.
156. We have attached the analysis of e-diary hours recorded in Table 6 and Table 7 for the financial years 2017; 2018 and 2019 for both Service Assurance and Access Network Build. There is an overlap between both areas in terms of reactive and preventive maintenance activities carried out by the Build Teams as well as Capex activities carried out by the Service Assurance Teams. As such, to correctly ensure cost recovery the Build Team activity also needs to be taken into account – it is not evident from the ANM whether these costs have been included.
157. Note there is a substantial amount of training hours due to the 2 year apprentice programme. There is also Health and Safety Training which has to be completed by each technician either on a bi-annual or tri-annual basis including Signing; Lighting and Guarding; Safe Pass; and Work Positioning Systems etc. These are real costs that are incurred in the Irish market.
158. The normal available hours calculated for a field technician is 1,530 hours per year and this needs to be taken account of when scaling the Service Assurance teams.
159. As evident from Table 6 and Table 7 while PSTN access paths declines year on year by ca. 50k (see

160. Figure 2 PSTN access paths in constant decline) the time spent on R&M is relatively stable. This supports the fact that R&M costs are not directly scalable relative to the number of lines.

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Figure 2 PSTN access paths in constant decline



Source: ComReg QKDR

Table 6: Service Assurance – resource utilisation ✂

Table 7: Access Network Build – Resource utilisation ✂

161. The BRG Report highlights three elements of the treatment of direct R&M costs in the ANM that stand out as questionable and which support eir’s conclusions above (and in our response to Question 6 on the Opex Module). First, BRG question the scaling down of the Direct R&M Line cost by the ratio of the number of lines in the ANM to the number of lines in the Revised CAM. They note that the Revised CAM already incorporates significant efficiencies and there is likely to be a large fixed element to the staff and pay costs included in the Direct R&M Line opex. Second, BRG question the appropriateness of opex cost trends set to 0% and finally, they note that in the current modelling (with 0% cost trends), there is a large reduction in cost modelled over time as a result of having fewer active copper lines which is not offset by increases due to having more active FTTH lines. As a result, the levels of direct opex decline over time, with levels in 2022 being approximately €5 million lower than the starting 2019 levels. The BRG report Section IX.2.1 contains a sensitivity analysis of reversing some of the scaling assumptions made by ComReg.

Failed to correctly model how costs will evolve as a result of copper switch off and copper decommissioning occurs

Capital Expenditure

163. The top-down results of the model significantly rely on assumptions which are not well documented. For example, ComReg forecasts a significant drop (50%) in copper capital expenditure in 2020, but has provided no evidence for this. ComReg simply state that it “modelled copper Capex at the 50% rate mentioned above, as ComReg considers that over the 10-year period covered by the ANM, it is unlikely that copper investment will continue at current levels based on the expectation that customers will migrate to the fibre network leading to Eircom’s eventual copper switch-off so that the focus of new build is likely to be fibre-based. ComReg also considers that copper decline is also likely to occur more quickly in commercial areas”. ComReg’s “justification” for applying the 50% reduction to eir’s capex for FY19 is that copper investment will not continue at current rates and that copper switch-off will also occur. Before taking each of these issues in turn, it is also worth stating that the ANM applies a further reduction to future Capex which ComReg has failed to consult transparently on. As the ANM assumes copper switch-off on a per copper line basis the associated Capex is set to zero for future periods. This results in, for example, in 2028 capex for some cost elements dropping by as much as 90% from the 2019 value. See also eir’s response to Question 7.
164. The ANM fails to consider that as the State funded FTTH network will be based on a ribbon deployment it will not be possible (due to regulation) to undertake copper switch-off on an exchange basis based on the migration on a per premises basis until all the copper service in that exchange have been disconnected, or replaced by “fibre-to-the-premises” equivalent services. This is because eir has existing access obligations (including SLA obligations) in a number of wholesale markets and concurrent retail USO obligations. Consequently, the savings forecast in the ANM as a result of copper switch-off programme (overall Capex decrease by 50% from FY19 levels and a further decrease on an exchange by exchange basis) is too aggressive.
165. An examination of recent capital expenditure additions shows a gradual decline in investments in underground copper cable as new housing developments have been served only with fibre optic cable in recent years. In contrast overhead copper

cable investments have held up to the extent that, over recent years, overhead investments run at double the underground rate. Historically underground and overhead investments ran at roughly the same level. Recent investments in overhead copper cable are made largely to ensure the network performs in line with regional service assurance targets. As evident from the FY20 accounts capital expenditure was \times and therefore the 50% reduction assumed by ComReg is unrealistic. The asset lives of those investments also need to be reduced to allow eir those costs between their deployment and copper switch off.

166. eir submits that copper switch-off is indeed evitable and that copper associated capex will decrease over time. As the ANM model already removes associated capital expenditure from an exchange when migration to the State funded FTTH network occurs that on balance a more modest decrease in the year-on-year reduction in capital expenditure is appropriate. eir considers that a 10% reduction is more likely to represent the actual movement of such costs over time.

MSANs

167. For the MSAN there are problems with both the asset life and the fill factor assumed by ComReg. These issues arise from the trend in demand for copper services and the timing of the copper switch off – at which point all FACO service will be delivered as VoIP over FTTP. In the Capex Module the asset life for the MSAN port is set at seven years.
168. The MSAN deployment has just started (mid FY21 and will take three years to complete. In the current version of the Service Demand Module copper switch-off starts in FY25 and finishes in FY30. The combination of these two indicate that the median of the MSAN deployment of the MSAN deployment will be at the end of FY22 and the median of the copper switch-off will be at the end of FY27. This indicates that the average economic life of MSANs will be close to five years. The use of a 7-year asset life for the MSAN represents an internal inconsistency in the ANM.
169. In the Capex Module tab “Dashboard” at row 33 parameter I.Par.11 shows the MSAN fill of ports on each card as 90%. Whether this can be achieved at the point of MSAN deployment is debateable considering the small size of many of the exchanges and the necessity to leave some spare capacity at each site for new

connections that arise, even among the general decline in demand. However what is absolutely clear is that the initial fill will decline continuously after migration from TDM to MSAN/IP technology for the low level FACO service. It is not a correct treatment of the MSAN cost to have a single fill factor through the price control period.

Made a series of further modelling errors

170. ComReg propose that common cost is recovered through a mark-up calculated to be 18.9% in the models. According to the Specification Document, this has been calculated using the total common cost in each year between 2021 and 2025 from the Opex Module divided by the total Capex in that year from the Capex Module. However, when recreating this calculation, it is evident that the mark-up should be set at 23.4%. See BRG Report.

A better way forward

171. The Consultation states that *“as the outputs of the ANM indicate that annual costs are lower than the existing price, it is ComReg’s view that such an approach would lead to excess recovery in the Regional Low-Level FACO Market. Therefore, ComReg does not think it is appropriate to maintain the existing price for the price control period”*. As identified above, this preliminary view is based on a number of inappropriate and incorrect modelling assumptions. When corrected the modelled PSTN WLR prices is roughly consistent with the extant rate and will increase further when the accelerated depreciation charge is redistributed over the price control period to avoid asset stranding. See Table 8. Nevertheless, even from an economic perspective, ComReg’s view is also imbalanced focusing instead on only one of its regulatory obligations without ensuring that this does not distort the balance between allocative and dynamic efficiencies, which should be a key concern to ComReg at this particular juncture. See also paragraph 173.

Table 8: Correct PSTN-WLR prices

		FY 20/21	FY 21/22	FY 22/23	FY 23/24
Prices per Consultation	PSTN-WLR	16.07	15.77	15.41	15.35
Prices per ANM Model (eir)		15.79	15.45	15.10	14.93
Corrections					
i) Common cost – mark-up adjustment from 18.9% to 23.4%		0.08	0.08	0.07	0.07
ii) Direct Opex - removal of unsubstantiated efficiencies (Provisioning opex and R&M-line opex)		0.42	0.62	0.78	1.03
iii) Capex - investment reduced by 10% rather than 50%		0.22	0.31	0.41	0.51
iv) MSAN port reduced from 7 to 5 years		0.15	0.15	0.15	0.15
Total Value of corrections*	PSTN-WLR	0.87	1.16	1.41	1.76
Corrected prices per ANM (eir)					
	PSTN-WLR	16.66	16.61	16.51	16.69
* Before correction of					
a) Faster migration to State Funded FTTH network					
b) Reduced asset lives to avoid asset stranding					

172. eir proposes a voluntary commitment that the extant price of €16.59 will remain in place until 30 June 2022. From 1 July 2023 onwards the monthly price will be €16.82 and will remain unchanged for the remainder of the price control period. As these prices are below the prices derived from the ANM, eir proposes that all unrecovered copper costs should be spread over and recovered from remaining copper services such as leased lines and CGA Bitstream in those areas and all unrecovered common costs recovered over the remaining copper services such as FTTC over the remainder of the price control period. This is consistent with the holistic view of cost recovery which ComReg stated it would consider for this pricing review in correspondence to eir on the 15 July 2019.
173. Under eir’s pricing continuity approach, price caps on WLR would remain as proposed for the duration of the price control. Therefore, customers taking these services would be directly protected from excessively high prices and will not be any worse off than under current regulation (or prospective regulation when the

ANM is correctly updated resulting in significantly higher wholesale prices). eir submits that ComReg must recognise that legacy-based pricing methodologies do not provide the regulatory stability and environment to support deployment and sustainable competition in fibre rich networks. This is why the 2010 EC Recommendation states that *“a costing methodology should be based on a modern efficient network, reflect the need for stable and predictable wholesale copper access prices over time, which avoid significant fluctuations and shocks, in order to provide a clear framework for investment and be capable of generating cost-oriented wholesale copper access prices serving as an anchor for NGA services”*.

In the case of PSTN WLR and current generation broadband prices in the IA these are the anchor the State funded FTTH network prices and ComReg must provide appropriate signals to that network. In that sense the proposals made by eir in this submission are more closely aligned to that being implemented by NRAs throughout Europe.

174. See also paragraphs 17-35.
175. Finally, eir notes that ComReg states that *“Prior to adopting its final decision on the price control for PSTN WLR including prices ComReg will update the ANM as necessary in order that the list of exchanges included in the ANM in respect of the Regional Low-Level FACO Market reflects the final market definition as adopted in ComReg’s final decision following the 2020 FACO Consultation, so that any cost-oriented prices for PSTN WLR that are mandated by ComReg may differ from the draft prices set out in this consultation.”* If ComReg proposes to continue to use the ANM to set wholesale prices then ComReg must consult again using the exchanges that will remain subject to regulation. As evident from eir’s response and the BRG Report changes to the ANM appear to be arbitrary and inconsistent, calling into question the objectivity and reliability of the model. As these outcomes were not identified by either ComReg or its consultants, eir submits that it would be appropriate that interested parties should be provided the opportunity to review whether the corrections / changes identified have been made and that when the revised footprint is used in the ANM it is still capable of generating sensible and reliable outcomes.

Q. 10 Do you agree with ComReg's preliminary views that the supplemental charge for POTS based FTTC should be based on the incremental costs, using the same approach as for PSTN WLR? Please provide reasons for your response.

176. eir agrees with ComReg's proposed approach at a conceptual level. The previous error in D03/16 has been addressed by implementation of *"an upward adjustment to the value of the WLR cost to compensate for under-recovery from LLU and FTTC prices based on SLU and LLU. ComReg recognises that the prices set for LLU and SLU are at a level which is lower than the full top-down cost of the copper loop"*.
177. However, the modelling errors as identified in Question 9 will also impact and correct the supplemental charge for POTS-based FTTC. As evident from Table 9, when corrected²¹ the draft prices for the price control period for POTS-based FTTC Bitstream are in excess of the price path proposed in ComReg D11/18. While based on the limited corrections we have been able to make, the corrected POTS-based VUA is slightly ahead of the proposed by ComReg D11/18.

²¹ It is not possible based on the confidential versions of the model provided to eir to determine the impact of prices by correctly applying an accelerated depreciation to those assets that will become stranded. However, intuitively such adjustment results in an even higher monthly price.

Table 9: Correct POTS based FTTC VUA and FTTC Bitstream prices

		FY 20/21	FY 21/22	FY 22/23	FY 23/24
Prices per Consultation	POTS FTTC	2.48	2.39	2.31	2.24
Prices per ANM Model (eir)		2.39	2.31	2.24	2.18
Total Value of corrections*		0.18	0.18	0.19	0.20
Corrected prices per ANM (eir)		FY 20/21	FY 21/22	FY 22/23	FY 23/24
Prices per ANM (eir)	POTS FTTC	2.57	2.49	2.43	2.38
FTTC VUA (See Question 15)		20.21	20.31	20.43	21.06
FTTC Bitstream (See Question 15)		24.86	25.16	25.34	26.23
Combined POTS based FTTC VUA		22.78	22.80	22.86	23.44
Combined POTS based FTTC Bitstream		27.43	27.65	27.77	28.61
Combined POTS based FTTC VUA (ComReg D11/18)		23.01	23.39	23.81	24.23
Combined POTS based FTTC Bitstream (ComReg D11/18)		27.85	28.30	28.85	29.47
* Before correction of					
a) Fair bet WACC adjustment					
b) Reduced asset lives to avoid asset stranding					

178. Furthermore, pursuant to ComReg's FACO Market Analysis consultation, eir prospectively does not have SMP in 75% of eir exchanges. This means that there could be a divergence in POTS-based pricing depending on whether the market is regulated or not. This is further complicated by the fact that FTTC Bitstream is not subject to SMP regulation in the Urban Market – which is a deregulated market which is expected to continue to increase over time. Consequently, consistent with eir's voluntary commitment proposal to ComReg in February 2020, eir proposes that the price charge in the Regional FACO market will remain as per the regulated supplemental charge for POTS based FTTC price path set out in ComReg D11/18.

Table 10: POTS based per ComReg D11/18

	FY 20/21	FY 21/22	FY 22/23	FY 23/24
Supplemental POTS (per ComReg D11/18)	2.91	3.30	3.17	3.31

179. Due to the construct of eir's billing system, as is implemented today, to meet eir's regulatory obligations pursuant to ComReg D11/18, a POTS based port price for the FTTC broadband variant is added to the standalone PSTN WLR price such that

cumulatively it achieves the intended regulated price per ComReg D11/18. This billing construct will be maintained going forward.

180. Finally, the Consultation has a typographical error in surmising ComReg's proposal in Section 11 of the FACO Market Analysis consultation. paragraph 7.13 of the Consultation states that *"With regards to the supplemental charge relevant to the provision of the POTS based FTTC services in the Urban FACO Markets the prevailing price of €2.91 per month set out in the 2018 Pricing Decision for year ended June 2021 is to remain as a maximum price for the duration of the sunset period applicable to the Urban FACO Markets as set out in Section 11 of the 2020 FACO Consultation"*. However, the FACO Market Analysis states that *"In order to facilitate an orderly transition to de-regulation of the Urban FACO Markets, ComReg's position is that a sunset period is appropriate, starting from the effective date of the Response to Consultation and final Decision. During this period, access to existing FACO services will be maintained at prevailing prices"*. Per ComReg's work programme as a market decision is not expected before 30 June 2021 the prevailing rate will be €3.03 per month as set out in the 2018 Pricing Decision.
181. See also eir's response to Question 15.

Q. 11 Do you agree with ComReg's preliminary views that the prices for LLU and SLU should be derived based on the Urban Commercial Footprint and set by way of maximum prices (rather than the existing price points) as set out in Section 7? Please provide reasons for your response.

182. eir partially agrees that the prices for LLU and SLU should be derived based on the Urban Commercial Footprint. As recognised by ComReg, the prices derived for SLU and LLU are not so much for the purposes of a standalone service (given the level of demand which is continue declining and in the case of SLU non-existent) but as a building block for FTTC prices.
183. eir agrees that the proposal that the Urban Commercial footprint should be set to include only those premises that are close enough to the exchange or FTTC cabinet to avail of a FTTC based service, whereas all lines serving premises that cannot receive a FTTC based service are included in the other footprints is correct but only to determine FTTC VUA prices. This is exception is explained below.
184. However, while the Urban Commercial footprint is also initially correct in order to determine FTTC Bitstream prices the exchanges considered in that footprint must subsequently exclude those exchanges that have been identified as being competitive and not subject to SMP defined in the 2018 WCA Decision as being collectively in the Urban WCA Market. The expansion of the Urban WCA Market is also the subject of a separate consultation by ComReg (ComReg 20/114). As such, the relevant footprint within the Urban Commercial footprint will need to be updated again following the Mid-Term Assessment of the WCA Market.
185. In addition, there is a small exception for the EVDSL services delivered into the Rural Commercial Footprint for about 5% of the 300k+ premises removed from the original NBP IA by the commitment contract between eir and DCEE. The average cost per loop in the Rural Commercial Footprint is substantially higher than a loop of the same length in the Urban Commercial Footprint. As the parameters of the non-confidential model provided to eir is extremely complex it is not apparent what the additional cost and recovery implications are for those lines in the Regional WCA Market. ComReg should ensure that the wholesale price enables the cost recovery for all FTTC lines.

186. As identified in eir's response, ComReg has made a series of modelling errors that must be corrected. In particular, eir considers that ComReg has;
- a. applied an incorrect allocation of cost recovery in the ANM for SLU;
 - b. proposed unsubstantiated cost reductions which are not capable of supporting the network;
 - c. applied an inconsistent modelling approach to determine operating costs for LLU and SLU;
 - d. made a series of further modelling errors; and
 - e. incorrectly calculated the local loop costs to determine FTTC Bitstream prices.
187. Each of these is discussed in turn below. At the end of this section the resulting corrected annual SLU and LLU prices is presented (per the non-confidential model received by eir).

Applied an incorrect allocation of cost recovery in the ANM for SLU

188. In paragraph 6.46 of the Consultation, ComReg states that *"These included deriving the unit costs of LLU and SLU with reference to the line base capable of serving premises in commercial areas and recovering common (corporate) costs on a per service basis, such that the same level of costs are recovered from an LLU based service as an SLU based service"* emphasis added.
189. However, as the ANM incorrectly includes common corporate costs, together with other operating costs more broadly, it incorrectly only apportions 85% of those costs to SLU. This is because while ComReg has reasoned in paragraph 6.39 of the Consultation *"As with LLU, the operating and common (corporate) costs are based on the BU approach. However, the SLU usage factor for Opex is 0.85 for SLU, compared with 1.0 for LLU to recognise the reduction in operating costs associated with not having to maintain the ESide copper pair"* the application of the 85% ratio to eir's entire operating costs is incorrect. The intention, as stated by ComReg in 6.38 of the Consultation states *"those common corporate costs should be recovered on a per service basis, i.e. the same level of common corporate cost is recovered regardless of whether the commercial service uses an LLU or SLU cost input"*.

190. When corrected this results in an increase of ~€0.37 per month.

Proposed unsubstantiated cost reductions which are not capable of supporting the network

191. As set out in paragraphs 148-150, ComReg has proposed a level of assumed saving/cost reduction which is unrealistic and result in unattainable levels of “hyper-efficiencies” with the consequence of eir not being able to recover its properly incurred efficient costs.
192. Similarly, ComReg proposes to adjust the Direct R&M evident in eir’s accounts by ca. 40%. However, that decrease discussed paragraphs 5.112 and paragraphs 5.128 of the Consultation is the total decrease in R&M-line costs between the TD method and the BU method. This is derived from two sets of inputs: costs from the AFI are input for the Top-Down method (€ million in F17 of Input_AFI_Costs) and adjusted costs from the Revised CAM are input for the Bottom-Up method (€ million in F82 of Input_AFI_Costs). The difference between these two gives the 40% reduction.
193. The second input which adjusts the outputs of the Revised CAM from € million and rescales into the ANM to derive a lower value of € million is flawed. ComReg reasons that the € million is appropriate because the Revised CAM was for a bigger network, so the € million should be scaled down proportionately to the difference in the number of lines between the ANM and the Revised CAM. However, this fails to consider that the outputs of the Revised CAM have already been adjusted below eir’s actual costs – including for a scorched node approach deploying new lines with different and shorter routes that appear on a desk-top exercise today but when deployed in reality required longer more extensive routes. Therefore, ComReg’s proposed adjustment in the ANM from the outputs of the Revised CAM is another “efficiency” adjustment on top of an already amended hypothetical “efficient” adjustment. It is not appropriate for ComReg to push the bounds of what an efficient network operator would incur today. In particular, as the resulting outputs from the Revised CAM are based on a number of hypothetical and interlinked assumptions by ComReg of what a “reasonable LFI representative of a new efficient network” would cost. Given that the risk of cost of under-recovery is greater the further ComReg layers on additional assumptions, eir proposes in this

instance that the calculation of the Direct R&M costs should directly be used from the Revised CAM without further adjustment in the ANM.

Applied an inconsistent modelling approach to determine operating costs for LLU and SLU

194. Our consultants BRG have identified several differences in the inputs between the ANM DAM and ANM PAM models provided as part of this Consultation and the Draft CEI DAM and Draft CEI PAM provided to eir as part of the CEI Consultation. Please refer to BRG's Report.
195. In addition, BRG has identified that *"The approach of only using Top-Down opex in the Draft CEI DAM and the Draft CEI PAM was consistent with the use of primarily Top-Down costing for the asset base. If the asset base costing for the PAM and DAM Modules are maintained at primarily Top-Down levels even when running the ANM for BU Tilted Annuity, the opex costing for these modules should likewise be maintained at Top-Down levels"*. Using two significantly different costing approaches to provide significant inputs into the same products means that the two sets of inputs may well be inconsistent with each other, particularly since these two approaches give very different results. ComReg must apply a consistent approach to ensure appropriate cost recovery.
196. We have corrected the Opex in the PAM Module and the DAM Module to the Top-Down levels, in line with the Capex inputs into these modules and in line with the models provided as part of the CEI Consultation. See correction iv) in Table 11.

Made a series of further modelling errors

197. As set out in paragraph 170, ComReg propose that common cost is recovered through a mark-up calculated to be 18.9% in the models. According to the Specification Document, this has been calculated using the total common cost in each year between 2021 and 2025 from the Opex Module divided by the total capex in that year from the Capex Module. However, when recreating this calculation, it is evident that the mark-up should be set at 23.4%. See BRG Report.

Incorrectly calculated local loop costs for FTTC Bitstream

198. As the costs for SLU and LLU is based on the Urban Commercial Footprint, in the context of FTTC Bitstream prices, the footprint must not contain those exchanges that have been deregulated in the WCA Market and exchanges that have been identified in ComReg 20/114 as no longer being susceptible to ex-ante regulation. Consequently, as currently modelled by ComReg the FTTC Bitstream price is based on the cost of local loops in deregulated areas cross-subsiding regulated areas. This is a material error.
199. In order to derive the correct cost of local loops in the Urban Commercial Footprint those exchanges that have been defined by ComReg as being in the Urban WCA market pursuant to ComReg D10/18 needs to be removed from the calculation. Similarly, those exchanges that will be designated and added to the Urban WCA market following conclusion of ComReg consultation process in ComReg 20/114 will also need to be removed.
200. This is discussed further in eir's response to Question 15.

Impact on LLU and SLU prices correcting for modelling errors

201. When the modelling errors are corrected both the SLU and LLU prices increase above those modelled rates by ComReg. See Table 11.

Table 11: Corrected SLU and LLU prices per Confidential ANM (eir)

		FY 20/21	FY 21/22	FY 22/23	FY 23/24
Prices per Consultation	SLU	10.43	10.39	10.39	10.82
	LLU	12.72	12.72	12.79	13.44
Prices per ANM Model (eir)	SLU	10.11	10.07	10.06	10.41
	LLU	12.93	12.93	12.98	13.5
Corrections					
i) Allocation of cost recovery in the ANM for SLU	SLU	0.38	0.38	0.37	0.37
	LLU	-	-	-	-
ii) Common cost – mark-up adjustment from 18.9% to 23.4%	SLU	0.05	0.05	0.05	0.05
	LLU	0.05	0.05	0.05	0.05
iii) Direct Opex - removal of unsubstantiated efficiencies (Number of lines)	SLU	0.14	0.14	0.14	0.14
	LLU	0.16	0.16	0.16	0.16
iii) Direct Opex - removal of unsubstantiated efficiencies (Provisioning opex and R&M-line opex)	SLU	0.32	0.47	0.59	0.73
	LLU	0.37	0.55	0.69	0.85
iv) Constant level of opex from PAM and DAM	SLU	0.13	0.12	0.11	0.10
	LLU	0.13	0.12	0.11	0.10
Total Value of corrections*	SLU	1.02	1.16	1.26	1.39
	LLU	0.71	0.88	1.01	1.16
Corrected prices per ANM (eir)		FY 20/21	FY 21/22	FY 22/23	FY 23/24
	SLU	11.13	11.23	11.32	11.80
	LLU	13.64	13.81	13.99	14.66
* Before correction of					
a) Fair bet WACC adjustment					
b) Reduced asset lives to avoid asset stranding					

202. Note that eir has only able to do a partial correction of modelling errors given the nature of the model and the results in the table therefore only reflect a subset of the corrections eir believe are required. Other corrections that should be done include: 1) changing the WACC to take account of the different regulated rates of return that were in existence when eir undertook its invest to a) ensure a fair bet return on eir's FTTC investment or b) to correct the tilted annuity calculation; and 2) reducing the existing asset lives in the ANM to avoid asset stranding and to shorten pro-rata on-going investment over the price control period. Based on a rough estimate undertaken by BRG – assuming copper asset lives are capped at 15 years results in

a further average price increase of €0.43 and €0.81 per year for SLU and LLU respectively over the price control period.

203. eir agrees with ComReg's preliminary view that the prices derived for LLU and SLU from the ANM should be considered maximum prices. The overall demand for LLU is in continuous decline and demand for SLU has never materialised due to the lack of business case to unbundle at this local level of demand.
204. eir proposes a voluntary commitment to continue to charge the extant rates for both SLU and LLU for the duration of price control period. Currently SLU and LLU are charged at €6.12 and €11.52 per month respectively.²² However, the actual prices charged for LLU and SLU should not be used in modelling the cost for FTTC – those should be set based on the costs derived from the corrected ANM. See paragraphs 198-200.

NON-CONFIDENTIAL

²² Monthly LLU prices excludes fault repair costs and monthly connection/ provisioning costs. The monthly SLU price includes fault repair costs.

Q. 12 Do you agree with ComReg's preliminary views that the maximum monthly charge for Dark Fibre should be based on fibre costs associated with Leased Lines access? Please provide reasons for your response.

205. eir agrees with ComReg's preliminary view that the maximum monthly charge for Dark Fibre should be based on fibre costs associated with leased line access. There are a number of reasons that eir finds this to be the correct treatment.
206. The ComReg determination on remedies for eir SMP in the WLA market only includes Dark Fibre as a fall back remedy where access to CEI is not available, and that eir is only required to provide access to Dark Fibre where reasonably available.
207. The Revised CAM modelled the cost of Dark Fibre based on the widespread deployment of eir FTTC from 2013 to 2015. As such this deployment is limited to the E-side of the copper network where the fibre backhaul from the street cabinet where VDSL service is launched back to the exchange where telephony service is launched. The result is that the price for Dark Fibre was based on the costs of a specific deployment that only uses a particular element of the access network.
208. ComReg's view that the demand for Dark Fibre would be similar to the point to point demand for leased line services such as to business parks, or to city centre offices is likely to be a better representation of the potential use of Dark Fibre. eir therefore agrees with this view as Dark Fibre has many of the characteristics of the fibre deployed by eir to deliver leased line services. As such eir agrees that the fibre costs modelled for eir leased line access are a reasonable proxy and basis for a price control by cost orientation for Dark Fibre.
209. There is a change required in the treatment proposed by ComReg in the ANM for the setting of prices for access to eir Dark Fibre. When eir made the investment in the fibre that will be used by operators it was done on the basis of a different WACC. The tilted annuity calculation that utilised that higher WACC had the effect of deferring revenues because of price trends in the assets used. The effect of this deferral must now be adjusted for the new lower WACC. The necessary adjustment is laid out in more detail elsewhere in this response and in the BRG Report attached to this response.

210. The BRG Report also identifies a number of modelling corrections which will impact the price of Dark Fibre from that originally consulted on by ComReg.

NON-CONFIDENTIAL

Q. 13 Do you agree with ComReg's preliminary view that the average monthly rental charge for CG SABB should be updated to reflect costs in the Regional WCA Market as well as to provide separate monthly rental prices for Regional and National Handover based on the maximum rates shown in Table 15 in Section 7? Please provide reasons for your response.

211. eir is in broad agreement with ComReg's preliminary view on the updating of the cost basis for CG SABB price control by cost orientation..
212. As the modelled costs is with reference to those exchanges in the Regional WCA Market, the model will need to be update with reference to the revised list of exchanges which continue to be determined to have SMP following ComReg's mid-term assessment. See also paragraph 175.
213. The approach that ComReg has proposed to updating the copper costs for CG SABB in the Regional WCA market is consistent with the range of price controls implemented in D03/16. For this reason eir supports this element of the calculation of the cost stack for CG SAAB.
214. The use of BU-LRAIC for active assets is generally used to send build-or-buy signals to operators over the term of a price control. For this signal to be consistent (including the signal to eir for investment decisions to refresh or upgrade DSL investments) the return available should be consistent across the period. For ComReg to send a signal at the beginning of a price control based on the current WACC and then to use a lower WACC to review prices mid-control is effectively to confiscate a portion of the return considered appropriate when the investment was made during the economic life of the asset. This needs to be corrected for by ComReg.
215. On the issue of separate monthly rental prices for Regional and National handover of CG SABB Bitstream services eir is in broad agreement with the ComReg approach. Although the eir CG Bitstream service is only designed for efficient national handover - and eir could not justify the additional investment, given declining demand, required to implement lower cost regional routing.

216. Note that for the reasons explained to ComReg on the 8 May 2019, as the required Regional Handover discount is higher than the available billing element of Bitstream usage using the D11/18 pricing structure, eir created a billing solution which provides the required level discount (in order to meet its cost-orientation obligations) on the fixed port element only as opposed to applying regional handover discount to both the fixed port and variable port elements. This will be the continued way eir will implement the regional handover discount, or as referred to by eir as Same Area Handover discount, going forward.
217. The NGN Core model is the correct tool to determine the cost of carrying Bitstream traffic regionally and nationally. However, there is two aspects of the updated calculation leading to the preliminary rates published in Table 15 that eir does not agree with. Once again the WACC has been reduced from 8.18% at the beginning of the price control to 5.61% in this mid control review. This has the effect of reducing the returns available from NGN active assets when decisions made to extend or refresh the NGN Core early in the price control are affected by a subsequent change by ComReg – within the economic life of that asset. This is not a legitimate form of cost modelling for the purpose of setting a price controlled by cost orientation for a new service that requires an investment in a new technology. Such an approach is inconsistent with Regulation 13 (2) of the Access Regulations. The second is that the NGN Core model will need to be revisited to ensure that it only captures the cost of core for those exchanges in the Regional WCA Market.
218. The ADSL technology used to deliver CG SABB is a legacy technology. At this point eir has over-built the bulk of the ADSL footprint with FTTC, EVDSL, and FTTH and is rolling FTTH out to many of the urban in-fill areas not currently reached by high speed broadband providers. The only substantial area of the country reached by ADSL and no other fixed broadband is the NBP intervention area (IA) – and only portions of this area are served with ADSL. As the State funded FTTH network has commenced passing delivery points in the IA with their FTTH service and retail service providers will very soon be seeking to move customers served with ADSL to FTTH. This also has the impact of asset stranding and ComReg must correct this in the model to ensure the model is capable of meeting ComReg's obligations pursuant to Regulation 13 (2) of the Access Regulations.

219. In this context any cost modelling decisions that have the effect of reducing the wholesale prices for ADSL services send entirely inappropriate price signals to a market where the price for NBI Bitstream is known to be close to €29 per month. See Figure 1: ComReg reducing consumer migration incentives to the State funded FTTH network. A more correct price signal would be to remove the price control by cost orientation and to set a price cap based on movement from the current price level at $\Delta\text{CPI}^{23} + 5\%$ so that retail service providers can anticipate the pressure to move the remaining CGA customers to FTTH as soon as possible.
220. eir proposes a voluntary commitment to continue to charge a maximum rate for CGA SABB, CGA BMB and Bitstream BIP at $\Delta\text{CPI} + 5\%$ for the duration of price control period.
221. Currently CGA SABB is charged at €22.17 and €23.17 per month for 8MB and 24 MB respectively – eir proposes that there will be no adjustment to the wholesale price using $\Delta\text{CPI} + 5\%$ for the first two years of the price control period. Bitstream usage will be charged at 0.47 per MB for the duration of the price control period and will not be subject to change.
222. CGA BMB will initially be charged at €8.88 per port – eir proposes that there will be no adjustment to the wholesale price using $\Delta\text{CPI} + 5\%$ for the first two years of the price control period. Bitstream usage will be charged at 0.47 per MB for the duration of the price control period and will not be subject to change.
223. Bitstream BIP will initially be charged at €9.37 per port – eir proposes that there will be no adjustment to the wholesale price using $\Delta\text{CPI} + 5\%$ for the first two years of the price control period. Bitstream usage will be charged at 0.47 per MB for the duration of the price control period and will not be subject to change.

²³ Where ΔCPI means the annual percentage change in the CPI from June to June in the year preceding the financial year the price change is proposed to take effect, as published by the Central Statistics Office (Ireland).

Q. 14 Do you agree with ComReg's preliminary view that the monthly rental charge for Line Share should be updated to reflect the latest available cost information resulting in a charge of no more than €0.62 per month? Please provide reasons for your response.

224. eir agrees that the Line Share price should be based on the incremental cost of supporting the ADSL broadband service on the copper line where the costs of that line are already recovered in the PSTN WLR price.

225. However, eir does not agree that the monthly rental charge for Line Share should be updated. This charge was set to recover only the incremental costs of the billing, and the removal of carrier systems. Billing activities are continuing and the investment to allow every pair where Line Share is sought was made some time ago and the price set only allows this to be recovered over the regulated life of the copper cable. The relevant lives are 15-years for overhead cable and 20 years for underground cable.

226. This investment can only be recovered from the Line Share revenue for copper pairs over the remaining life of the copper loops. As the use of these loops for Line Share has declined substantially the opportunity for eir to recover these costs has also declined. Similar to the reasons already set out in eir's response, two further corrections are required to the calculation;

a. The remaining life of the copper loops needs to be reduced to recognise their shorter asset life due to the migration from the copper network to the State funded FTTH network.

b. The WACC cannot be simply updated in the model as if the newly determined rate of 5.61% was always in existence. This is incorrect and ComReg's simple update results in a mathematical error which means eir's cost will not be recovered.

227. eir submits that there is no appropriate basis in cost analysis to now reduce the charge for Line Share and ComReg should simply cap the charge at the existing nominal level of €0.77 per month.

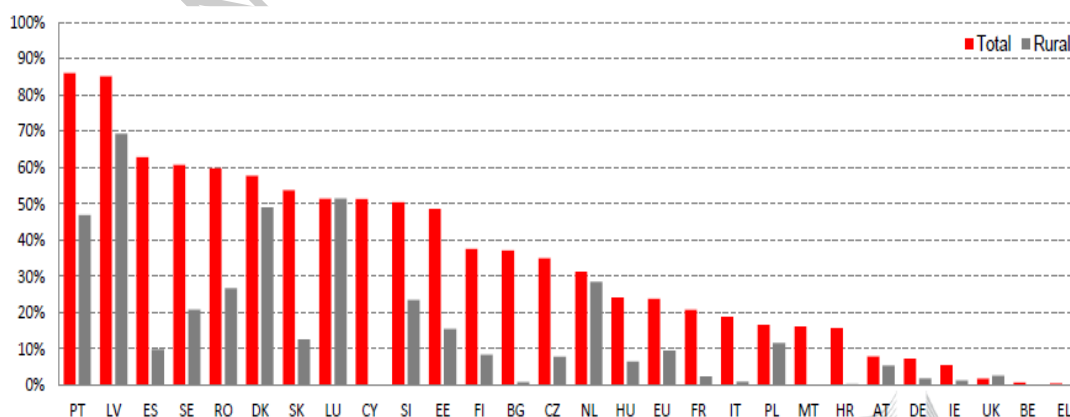
Q. 15 Do you agree with ComReg's preliminary views that the price for FTTC based services should be updated in line with the approach at paragraph 6.82? Please provide reasons for your response.

228. ComReg proposes that the monthly rental charge for FTTC based services should be amended to reflect the updates to the LLU, SLU and NGA Link cost inputs as modelled in the ANM, and by applying the regulated WACC of 5.61% in the ANM, the NGA Cost Model and the NGN Core Model. eir does not agree that such an approach is appropriate or justified. In particular, eir considers that ComReg has;
- a. departed from the EC recommendation of focusing policy towards VHCN (including full fibre) deployment;
 - b. failed to respect the 'fair bet' assumptions (again) relative to the investment risk as it presented itself to eir as well as to other operators when ComReg set cost-oriented tariffs;
 - c. applied an approach which is inconsistent with the 2013 EC Recommendation;
 - d. erroneously modelled a number of inconsistent deployment and cost-recovery outcomes; and
 - e. incorrectly calculated FTTC Bitstream prices.
229. Each of these issues is discussed in turn below. At the end of this section the resulting corrected annual FTTC VUA and FTTC Bitstream prices is presented (per the non-confidential model received by eir) and a more appropriate price path is proposed by eir.
230. Note that for the reasons explained to ComReg on the 8 May 2019, as the required Regional Handover discount is higher than the available billing element of Bitstream usage using the D11/18 pricing structure, eir created a billing solution which provides the required level discount (in order to meet its cost-orientation obligations) on the fixed port element only as opposed to applying regional handover discount to both the fixed port and variable port elements. This will be the continued way eir will implement the regional handover discount, or as referred to by eir as Same Area Handover discount, going forward.

Encouraging VHCN deployment and take-up

231. Air considers that ComReg’s approach of reviewing the ANM and as such the price for FTTC based services is incorrect. First, from a theoretical perspective it does not make sense to model a HEO rolling out a FTTC network given the fact that FTTH is being deployed at the same time.
232. The BRG Report finds that ComReg fails to apply the "hyper-efficient" principle logically and thus “in allocating common costs in the commercial area between copper (including FTTC) and FTTH, ComReg in effect assumes that an efficient new operator would roll-out simultaneously both FTTC and FTTH networks. This is hardly likely. ComReg is also inconsistent in implementing this assumption because it does not consider that deploying FTTH would inevitably shorten the life of copper and FTTC assets, which would become obsolete once FTTH is deployed. A similar issue applies in the case of LLU and SLU prices, which are based (in part) on the costs that an efficient operator would incur in replacing copper network assets, even though an efficient operator today would not invest in a copper network.”
233. Moreover, overall FTTH coverage in Ireland as of June 2016 was 5.5% and at that point in time, Ireland was well behind its European peers in terms of both total and rural FTTH coverage.

Figure 3: FTTH/B European coverage, June 2016



Source: Europe’s Digital Progress Report 2017 – Connectivity

234. In comparison, FTTC coverage in Ireland was 80.6% in 2016 and the market transition was, as a result, at a very early stage. For nascent technologies, pricing is far more complex and there are a number of interrelated variables, for which the outcome of intervention is inherently difficult to forecast.

Table 12: Broadband coverage in Ireland, 2013-2016

	2013	2014	2015	2016
DSL	92.5%	92.5%	92.5%	92.5%
VDSL	33.2%	60.8%	70.6%	80.6%
FTTH	1.7%	1.7%	4.5%	5.5%
Cable	42.4%	42.4%	42.7%	43.3%

Source: Europe's Digital Progress Report 2017 - Connectivity

235. However, in the intervening period, FTTH rollout has advanced and overall FTTH coverage in Ireland was 21% at the end of 2019²⁴, although this still lags behind the majority of EU member states and the EU average of 34%. Nonetheless, the effects of regulatory intervention with regard to copper based services (xDSL) on both pricing signals for migration and VHCN (including FTTH) rollout have become more apparent. The dual role that copper pricing plays in migration and funding NGA deployment has been increasingly recognised by progressive NRAs.

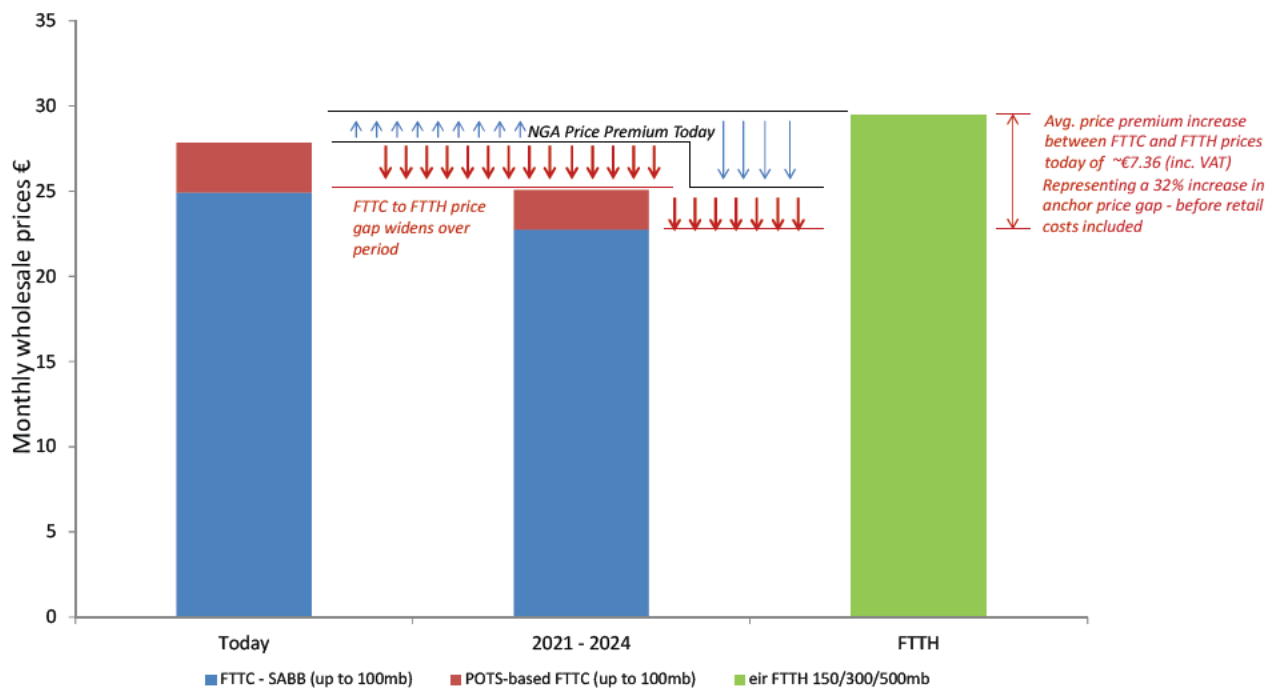
Migration incentives

236. It is important to understand the impact of the reduction in wholesale prices for FTTC based services on both the wholesale and retail prices for FTTH based services. In the context of a competitive retail market, reductions in wholesale prices will be reflected in retail prices. Customers are sensitive to the differential between the prices of various services and if this differential grows, take-up of higher speed services is adversely affected. Reductions in the price of FTTC, as proposed by ComReg will critically undermine the migration path for customers from FTTC to FTTH.

²⁴ Digital Economy and Society Index (DESI) 2020 Ireland.

237. In this manner, FTTC pricing effectively anchors pricing for FTTH services. The FTTC service that ComReg intends to impose price reductions on is capable of meeting the needs of a large cohort of users over the short to medium term, particularly where the consumer is close to the street cabinet. Higher bandwidth products delivered over FTTH can command a premium, however if the price of the substitute FTTC product falls, the price of those premium products will tend to fall by the same or a similar amount.

Figure 4: ComReg reducing consumer migration incentives to FTTH network



Implications for FTTH roll-out in Ireland

- i) *Slower migration by end-users*
- ii) *Downward pressure on FTTH price*
- iii) *Detriment to business case – potential smaller deployment and lower availability of Very High Capacity Network for Irish consumers*

238. eir notes that this effect is also present and indeed magnified by proposed reductions in the prices for CGA Bitstream, which will ultimately affect migration incentives for customers in the NBP IA. This is discussed further in eir’s response to Question 16, but it does not appear that ComReg has given any consideration to the likely impacts in this regard. The only mention of such a migration in ComReg’s Consultation is at paragraph 3.30, which states that “[i]n the NBP IA customers on

Eircom's existing legacy copper network are likely to transition to NBI's fibre network as it becomes available...".

Investment incentives

239. These collateral effects have the potential to significantly undermine the economics of investment in FTTH. Further price reductions for FTTC (and CGA Bitstream) will limit the scope for FTTH investment in Ireland and will result in retaining an outdated focus on competition based on regulated access to active products. This is in direct contrast to the Commission's vision for the telecommunications sector in Europe. As evident from Figure 4 the average price gap using ComReg's proposed prices over the three years between FTTC and FTTH would now increase by a further 32%. FTTC wholesale price reductions have already directly impacted the price eir is able to charge for FTTH. Further wholesale price reductions for FTTC will again negatively impact the migration incentives to FTTH and further compress available returns on FTTH. See also paragraph 279.
240. eir notes that the availability and take-up of very high capacity networks (VHCNs) and connectivity, namely FTTH and 5G, have been elevated to core objectives of the EECC. In addition, and in the current context of the on-going COVID-19 pandemic, there has been widespread recognition of the absolutely crucial nature of communication networks and the necessity of digital connectivity at both a national and European level. The pandemic has highlighted the need to ensure that telecoms networks are future proof. These are the networks that underpin the Irish economy and society.
241. Gigabit connectivity has been further highlighted as a priority of the European Commission for the 2020-2024 legislative cycle, including in the Commission's Communication on 'Shaping Europe's Digital Future'²⁵ and the 'Recovery Plan for Europe'²⁶. In particular, the former notes that "*Gigabit connectivity, powered with secure fibre and 5G infrastructures, is vital if we are to tap into Europe's digital growth potential*" and "[t]o this end, adequate investments at EU, national and regional levels are necessary to achieve the EU 2025 connectivity objectives".

²⁵European Commission, *Shaping Europe's digital future*, 19 February 2020, https://ec.europa.eu/info/sites/info/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf

²⁶ https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/recovery-plan-europe_en

242. Moreover, on 18 September, the Commission adopted a Recommendation on Connectivity²⁷, calling on Member States to boost investment in very high-capacity broadband connectivity infrastructure. In particular on the issue of wireless rollout, the Commission advises that any delays in auctions due to the COVID-19 crisis should be avoided or minimised, spectrum auction formats and pricing should be pro-investment and passive and active infrastructure sharing as well as joint roll-out should be viewed favourably. On 18 December²⁸ the Commission completed the first milestone in the recommendation: a list of best practices collected by Member States on policies supporting network rollout and spectrum auctions. These best practices will serve as the basis for a toolbox that is to be implemented by all Member States. Through this process the Commission hopes to achieve short-term improvements in national policies to support high-speed network rollout, including efficient spectrum assignments.
243. The renewed focus on connectivity and the heightened sense of urgency in this regard, are evident. As such and given the levels of investment that will be required to ensure ubiquitous gigabit connectivity, eir considers that ComReg's proposals should explicitly recognise the implications for FTTH investment and migration incentives. In this manner, ComReg can effectively play its part in ensuring that Ireland meets the European connectivity targets.
244. As noted in eir's response to Question 1, the approach taken by Ofcom is an example of best practice in this regard. Ofcom's approach in fixing FTTC prices in nominal terms (and away from cost-oriented pricing models) recognises that while customers may not benefit from price reductions in the short term, they are better off over the longer term given increased investment in (and migration to) FTTH networks. In addition, the approach seeks to allow Openreach to recover enough of the FTTH investment cost from copper services to make the business case for investing profitable. The approach also recognises that there is a significant and positive relationship between higher wholesale prices and network build and that pricing continuity sends an important signal to investors that Ofcom continues to

²⁷ Commission Recommendation on a common Union toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum, https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=69383

²⁸ <https://ec.europa.eu/digital-single-market/en/news/eu-member-states-present-report-best-practices-fast-network-rollout-first-step-towards>

be committed to setting prices that support investment, and thereby creates more stability and certainty over the medium term. Investor reports have demonstrated how these pricing signals contribute to investor confidence and a positive regulatory environment.

245. Such an approach is in stark contrast with ComReg's own, which appears to favour strict cost orientation for cost orientation's own sake without due consideration to the overall market context and policy objectives that are beneficial to the economy and society as a whole e.g., the intertwined digital and green transitions. Further, eir notes that regulation is supposed to replicate the outcomes of a competitive market and in a competitive market, a commercial operator would continue to recover the majority of its costs from FTTC given that it cannot fully recover those costs from FTTH.

Respecting the 'fair bet' principle

246. ComReg states at paragraph 6.74 that "[a]bsent any change to the WACC rates, updating the NGA Cost Model with the revised cost inputs from the ANM would lead to an increase in the modelled costs of FTTC based VUA rental across the price control period" but further states at paragraph 6.75 that in the 2018 Pricing Decision it "noted that it was planning to consult on the WACC rate and that it reserved the right to require prices to be updated depending on the outcome of any decision that would be taken on the WACC rate as a result of that consultation process."
247. However eir does not consider that ComReg merely stating that it reserves the right to update prices constitutes an effective signal for investors or that putting forward this mere statement from 2018 as sufficient reasoning for imposing price reductions for FTTC based services. Such a position is outweighed by ComReg's obligations to ensure regulatory predictability between review periods pursuant to Regulation 16 (2) (a) of the Framework Regulations and by the 2013 EC Recommendation which states that "a costing methodology should be based on a modern efficient network, reflect the need for stable and predictable wholesale copper access prices over time, which avoid significant fluctuations and shocks, in order to provide a clear framework for investment and be capable of generating cost-oriented wholesale copper access prices serving as an anchor for NGA services". ComReg's approach

should respect the 'fair bet principle' in allowing eir the opportunity to make higher returns on successful investments, to compensate for risk. While the risks for FTTC investments differ from full-fibre investment the principle remains consistent.

248. At an investment to revenue ratio, eir is one of the highest spending telecommunications operators in Europe. ComReg should not appear to be seen to retrospectively take such commercial decisions for granted, i.e., eir's intention to overbuild its FTTC investment with FTTH which will facilitate the connection of over 1.8m homes to very high speed broadband should not be dampened by regulation. Capital investment programmes, like eir's FTTC and FTTH IFN programmes, are not without their risk. In fact eir's FTTC wholesale broadband service, which commenced in 2013, has only recently become profitable on an annual basis and eir is yet to make a full return on that investment. With the WACC that applied when eir made its initial decision to investment in 2013 it is clear that the fair bet principle was broken when ComReg imposed cost-orientation in 2018 and the breakeven point of that investment continues to be pushed out due to continued revision by ComReg of the proposed prices. See Figure 5: Cumulative P&L and Fair Bet Return.
249. During the time leading to D10/18, eir raised concerns that engagement with ComReg had solely focussed on the wholesale pricing model and that there had been no engagement on pricing principles such as 'fair bet' or alternative regulatory pricing approaches. In its 2018 Pricing Decision, ComReg merely states at paragraph 7.1332 that for alternative operators planning to rollout, regulated access prices can act as a price constraint and affect the return on investment and that "[a] similar effect could be considered with regard to Eircom's investment, where Eircom could reasonably expect a 'fair bet'." However, no consideration is given to this effect and ComReg further states "that in now deciding that cost orientation is required for FTTC-based services, ComReg notes that the regulated access price includes a reasonable rate of return (WACC) that takes into account the risk of investing in these kind of assets. As a consequence, efficient infrastructure deployment can be profitable (from the SMP operator's or from alternative players' perspective) in the presence of this price constraint. Therefore, ComReg does not consider that cost orientation will undermine investment in NGA networks" [emphasis added].

250. ComReg adds at paragraph 7.1333 of D10/18 that with respect to eir “cost orientation provides a stable view on revenues which might be used in making future investment decisions and a level of certainty regarding what is required of it in terms of complying with regulatory pricing obligations. Therefore, ComReg does not consider that cost orientation will undermine investment in NGA networks, whether by Eircom or by alternative operators.”
251. ComReg has therefore not only failed to consider the fair bet principle but has subsequently undermined the very principles upon which it considered the move to cost orientation for FTTC based services appropriate, namely that the included WACC (at that time) and stable and foreseeable revenues would not undermine investment in NGA networks.
252. In addition, given that: (i) some investors will wait for ComReg’s proposals to crystallize before making decisions (ComReg’s consultation on FTTC, FTTH pricing commenced in 2016 and ended in 2018) and; (ii) investment will not be complete (or even start in some cases) since ComReg’s 2018 Pricing Decision, ComReg revisiting the pricing remedies so quickly after implementing its Decision only serves to create regulatory uncertainty for infrastructure-based providers and increase the benefit of the wait and see approach for re-sellers. ComReg’s pricing remedy actions not only undermine infrastructure (build) decisions through an unstable regulatory environment it supports resellers on the very bottom rungs of the ladder of investment and discourages them from investing in infrastructure as the pricing policies seemingly ensures that copper prices will continually reduce (by revisiting and updating pricing decisions within the price control period) and provide access to legacy wholesale products in (apparent) perpetuity.²⁹ Such an approach will not only undermine FTTH pricing in the Commercial area but impact the business case of the State funded FTTH network estimated currently to cost €3 billion.
253. BRG also finds that the "hyper-efficient" and frequently updated approach to pricing is based on applying a theory that is suited to the dynamics of markets where entry and exit are rapid and cost-less and that “[t]here is no clear-cut case for applying this ‘contestable markets’ approach to last-mile fixed telecom

²⁹ eir notes that it is ComReg’s intention, as proposed in consultation ComReg 20/46, to impose an ISDN BRA access obligation on Eircom in 2021 for a period of up to 5 years, over 10 years after production of the necessary equipment ceased.

infrastructure, either from the perspective of preventing the incumbent operator from earning excess returns or from the perspective of sending the right signals for entry and investment. There is simply not a thick supply of entrants who will respond to short-term changes in costs and demand. Further, the approach has negative consequences for investment and cost recovery, and it risks violating the 'fair bet' principle if the approach is applied in a way that prevents firms from recognising the 'upside' (positive shocks to cost and demand) but not the downside (negative shocks)."

254. eir therefore considers that ComReg should instead focus its regulatory approach on encouraging new networks, with a priority to supercharge full fibre investment, including in rural areas. It is imperative that ComReg's approach recognises that there must be a compelling investment case. Shareholders and fund managers have plenty of choices over where to put their money. At a minimum, an investment in fibre networks should offer a healthy and fair return. Every investment carries some uncertainty, so it follows that investors should be compensated for accepting that risk and requires certainty that the regulator understands this.
255. Telecoms networks are a long-term investment, taking more than a decade – if not two – to pay back and while it may be impossible to predict exactly how the market will evolve over that time, if companies play by the rules it should be envisaged that the regulator would not expect to intervene during the investment cycle in a way that hampers that investment. Instead, the regulator should aim to allow all companies to achieve a fair return over their whole investment period. ComReg's primary duty is to citizens and consumers and they need better, faster networks at a fair price. Interventions focussed on the short term that discourages investment incentives of those building these better and faster networks is not in the long-term interest of consumers.

Continual updates of the WACC

256. When calculating the level of depreciation for an investment based on a tilted annuity or economic depreciation, a pre-determined payment schedule is defined at the time of the investment that allows for the full recovery of the investment made and a return on the capital employed throughout the life of the asset. This will generally take the form of a fixed annual/monthly payment in real terms for a tilted

annuity or a fixed real payment for each unit of output in the case of economic depreciation. Such payments will depend on the value and the timing of the investment, the lifetime of the assets and the WACC that is associated with the investment.

257. The expected payback of investing in FTTC is backdated over a number of years using pricing tilts allowing for cost recovery. ComReg's regulated prices are based on an annuity which calculates the charge that, after discounting, recovers the asset's purchase price and financing costs in equal annual sums (or in the case of economic depreciation the recovery of those costs that matches the demand profile). As such, the original "tilt" resulting in different year on year prices will cumulatively recover the original investment. From a business and regulatory perspective this appears reasonable.
258. However, in proposing an update to the WACC year on year, ComReg is in effect resetting that path afresh each year. As such, updating the WACC over the course of the regulatory review period and applying it afresh to existing price controls confuses the time horizons of the (notional) investor and the expected life of the telecommunications assets employed.
259. ComReg is aware of this and acknowledged such issues in the past – in particular in ComReg D03/16, ComReg states that "*deviating between alternative tilted annuity approaches over the asset life for each asset may lead to an expectation of under-recovery and underinvestment, and we would generally agree with this*". It is unclear why ComReg has not also considered the similar implications in this case with regard to the proposed amendment to the tilt every year as a result of the proposed annual reviews.
260. Updates that retrospectively apply the WACC into existing pricing decisions effectively imply that the investor could annually liquidise their assets including unwinding debt obligations and re-capitalise and invest in telecommunications infrastructure afresh each year (as if previous price paths and build/buy decisions were just artificial and without consequence).³⁰

³⁰ This is also particularly relevant to associated investment in FTTH by operators including Siro and eir where the recent price path set for FTTC by ComReg act as a signal to undertake riskier full-fibre network investment.

261. If ComReg maintain the view that a change in WACC is implemented as part of new decision, a new annuity (or unit cost of demand) will need to be calculated which takes into consideration the impact of the historic WACC on the ability that an operator had to recover its initial investment. This calculation needs to consider the value of the NBV of the investment at the time of the rate change, over the remaining life of the investment. If this is not done, the impact of a reduction of WACC would result in an under-recovery of the initial investment. The BRG Report provides a useful explanation of how changing the WACC over time distorts the required payback. In addition, given the FTTH deployment the relevant asset lives of the FTTC network needs to be shortened to ensure (but not guarantee) cost recovery.
262. It is wholly incorrect from a regulatory perspective to retrospectively distort those anticipated returns, such that the expected return from that investment should now be wholly different based on a notional hypothetical re-calculation year-on-year of the cost of debt and equity. This is not credible or consistent with ComReg's regulatory objectives. In particular, as there is a difference between the actual cost of capital and the theoretical WACC proposed for regulatory purposes.
263. Put simply, ComReg is not pricing a hypothetical network for build/buy signals it is also required to ensure, pursuant to Regulation 13 (2) of the Access Regulations, that it *"allow[s] the operator a reasonable rate of return on adequate capital employed, taking into account any risks involved specific to a particular new investment network project"*.
264. eir's historic FTTC returns are set out below. At the time the majority of eir's investment was made the WACC was 10.21%. The cost oriented prices determined by ComReg in 2018 used a WACC of 8.18%. As is apparent from the cumulative cashflows – even before a risk premium is considered for the risky investment undertaken by eir in 2012/13 — eir has yet to make a return on this investment.

Figure 5: Cumulative P&L and Fair Bet Return ✂

Inconsistent with the 2013 EC Recommendation

265. A regulatory policy incentivising the migration from copper-based services as recognised by the European Commission is needed from ComReg. The 2013 EC

Recommendation in particular paragraph 40 provides that any intervention in NGA costing (which ComReg has done for FTTC pursuant to ComReg D11/18) “should be accompanied by documented projections of copper network prices showing that ... they will remain stable”. For operators it is highly cost inefficient to invest in and operate two network infrastructures in parallel if all potential customers could be served by one modern infrastructure. In addition, ComReg must also ensure that there are appropriate migration incentives both in commercial and NBI areas to encourage FTTH deployment and effective use of taxpayers’ money.

266. In the Consultation ComReg states in paragraph 6.78 that “the NGA Cost Model uses an Economic Depreciation (‘ED’) approach to cost modelling, which considers demand and costs across a model time horizon of 50 years. The ED approach is consistent with the approach taken by ComReg in the NGA Cost Model to model VDSL as an anchor technology, with the result that VDSL based services, such as FTTC, are modelled as remaining active for the entire 50 year period of the model time horizon. As stated in paragraph A1.27 of the 2018 Pricing Decision, “... because VDSL is being considered as an anchor technology, ComReg assumes that Eircom will not overlay its FTTC network with FTTH in the future, so the NGA Cost Model does not include migration from FTTC to Eircom’s FTTH.” [emphasis added] and further in paragraph 6.79 that “Consequently, the HEO in the NGA Cost Model is assumed to continue to deploy VDSL specific assets such as FTTC cabinets and DSLAMs over the 50 year time horizon and the demand for the VDSL services that use those assets is also assumed to persist for that period”. The Consultation then footnotes the justification for this approach in ComReg D11/18. Before reviewing the D11/18 it is already apparent from the text in ComReg’s consultation paragraph 6.78 that “ComReg assumes that Eircom will not overlay its FTTC network with FTTH in the future, so the NGA Cost Model does not include migration from FTTC to Eircom’s FTTH” is no longer accurate. As noted in paragraph 5.22 of the Consultation “Eircom has rolled out its FTTC network in the Urban Commercial Area and is expected to overbuild FTTH over the next few years”. As such the NGA Cost Model is no longer sufficient and needs to be updated. Furthermore, with reference to the justification of an anchor technology, ComReg sites Ofcom as also using this approach. However, for the benefit of the reader the Ofcom document reference by ComReg is from 2011 and has been surpassed by not only more recent Ofcom thinking but also the 2013 EC Recommendation.

267. The 2013 EC Recommendation states that *“When setting the economic life time of the assets in a modelled FttC network NRAs should take into account the expected technological and network developments of the different network components”*. Consequently, in order to be compliant with the 2013 EC Recommendation, it can no longer be the case, for example, as assumed in ComReg’s model that the NGA Cost Model uses a 50 year time horizon to model FTTC costs and that the average FTTC connection cost is modelled over 20 years (see paragraph 275). The most recent Ofcom approach while still recognising an anchor technology approach to FTTC specifically recognises that some assets could become redundant due to the introduction of new technologies and that adjustment to the asset lives in the BU model should be made to reflect the faster depreciation of the underlying network assets. Specifically, Ofcom note that in *“...specifying the bottom-up model we have recognised that in times of technology change the economic life of assets may become shorter than their physical life (i.e. resulting in stranded assets). For this reason, ... we have set the lifetime of some of the FTTC assets used to provide Openreach’s GEA services to provide Openreach with recovery of its costs in full over the economic life of the assets.”*³¹ ComReg make clear in D11/18 that the NGA Cost Model uses VDSL as an anchor technology approach and hence like Ofcom must ensure that adequate account is taken technological change and asset stranding in its cost models — in order to be compliant with the 2013 EC Recommendation. Furthermore, the 2013 EC Recommendation ensures *“adequate remuneration for the SMP operator and at the same time provide regulatory certainty for both the SMP operator and access seekers over time”* which is consistent with ComReg’s regulatory objectives.

268. As noted by ComReg’s consultation on the WACC, ComReg 19/54, in respect to changing existing tariffs with a new revised WACC, ComReg reasoned that it would not be appropriate to do this in isolation as *“ComReg is of the preliminary view that this method may not be appropriate as arguably, other parameter changes should be considered in tandem.”* It is unclear therefore why ComReg has proposed in this Consultation to do just that. In this Consultation it is proposing to update only the WACC and the cost inputs of the local loops and ignoring the other parameter

³¹ Ofcom [2018], Wholesale Local Access Market Review: Statement – Volume 2, Charge control design and implementation, paragraph 2.33, available here: https://www.ofcom.org.uk/_data/assets/pdf_file/0023/112487/wla-statement-vol-2.pdf

changes that need to be considered. In particular, as identified 266, as the conditions for the assumptions underlying the model no longer holds (i.e., eir's FTTC network is being overbuilt by a newly deployed FTTH network).

Erroneously modelled a number of inconsistent deployment and cost-recovery outcomes

269. In this Consultation, ComReg has assumed that the hypothetically efficient operator is a new entrant to the market (in order to set appropriate build/buy signals) and will deploy an FTTC network. At a conceptual level a new hypothetical efficient entrant is unlikely to deploy an FTTC network, at this time, given that the advent of FTTH technology will quickly make its investment obsolete. As a real world sense-check, it is clear from the deployment of Siro's FTTH network, eir's Irish Fibre Network and the Irish Government's state aid requirement of a future proof network resulting in FTTH that building (and modelling) a new FTTC network deployment is completely removed from real world competitive outcomes.
270. The dynamic evolution of the market, including the award of the NBP contract and commencement of deployment, since ComReg first decided to move to cost orientation for FTTC and model the cost of a new hypothetical FTTC network is very different today in 2020 than compared to ComReg's first iterations of an FTTC network in 2016. It is for this reason that market analysis reviews are typically conducted over 3-5 years. Given that ComReg's previous market analysis was concluded in 2018, the proximity of this pricing review is closer to the requirement of conducting a fresh market analysis than merely updating a pricing remedy (which ComReg has chosen). As markets continue to evolve, including the number of listed markets susceptible to ex ante regulations, the piece-meal and ill-sequenced review of remedies rather than the underlying market reviews will likely result in regulatory failure.
271. eir notes that Article 68 (6) requires NRAs to "*consider the impact of new market developments, such as in relation to commercial agreements, including co-investment agreements, influencing competitive dynamics.*" eir considers that the award of the NBP contract and the commencement of NBI route rollout constitute new market developments in the relevant markets that will influence competitive dynamics.

272. In addition and in line with the updated 2020 Recommendation on relevant markets susceptible to ex ante regulation and the associated Staff Working Document, which foresee the possibility that NRAs may consider delineating a separate Physical Infrastructure Access ('PIA') market, eir understands that ComReg is undertaking a review of this potential new market and will begin engagement with industry in this regard in January 2021. eir considers that a new review of the WLA and WCA markets should run in parallel to any review of the PIA market, given the related nature of the markets.
273. In conjunction with the future direction of travel for regulatory policy, the market developments since the 2018 review of the WLA and WCA markets warrant a market review to be commenced now, in advance of the 5 year review timeline.
274. ComReg's hypothetical new entrant further diverges from reality in that the operator deploys both a new FTTC network and then simultaneously cannibalises and scraps the new deployed copper element of this network with a new FTTH investment. It is at this juncture that ComReg's modelling assumption inconsistencies begin to compound and regulatory failure of ComReg objectives begins to manifest.
275. First, from the ANM Service Demand Module, copper switch-off will be complete by 2030 with a median completion date of 2028. However, the NGA Model assumes that an FTTC connection has an asset life of 20 years. This is inconsistent with the modelled assumptions and needs to be corrected to ensure appropriate cost recovery. Migration costs in the NGA Model should now fall to 7 years for new migrations, and should be no more than 7 years for existing services as the new entrant will have already started upgrading to FTTH within that time period as the FTTH network is modelled to be complete by 2024.
276. Second, from a cost recovery perspective, the new entrant is assumed to commence allocating costs to FTTH as soon as it is deployed. This is inconsistent with real world outcomes for two reasons;
- a) As more costs are allocated to FTTH, the new entrant (as modelled) has lower costs to recover from FTTC and therefore charges lower prices (as a result of

cost-orientation on FTTC). However, this will directly impact the migration incentives for consumers to move from its FTTC network to its newly deployed and more risky and expensive FTTH. As a result the new entrant's FTTH network take-up and business case is significantly impacted. The new entrant would at this point likely delay further FTTH roll-out; and

- b) As more costs are allocated to FTTH, the new entrant would need to increase its wholesale prices for FTTH to ensure overall cost recovery. This is similarly problematic to a) above as the lower anchor price of FTTC directly impacts that premium consumers are willing to pay for FTTH and either FTTH is “priced out of the market” or must sell below cost.

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277. In both scenarios as those costs cannot be recovered from FTTH the new entrant is now also under recovering relative to the price it should be charging (i.e., a higher price) for FTTC. Cumulatively, ComReg's approach;
- fails in “*promoting efficient investment and innovation in new and enhanced infrastructures*” contrary to Regulation 16 2 (a) and (d) of the Framework Regulations – as the incentive to deploy FTTH network is dampened due to regulatory intervention;
 - fails the requirement under Article 13(1) of the European Access Directive to allow operators a reasonable return on adequate capital employed; and
 - fails to meet the 2013 EC Recommendation which states that “*Cost recovery is a key principle in a costing methodology. It ensures that operators can cover costs that are efficiently incurred and receive an appropriate return on invested capital*” and “*A costing methodology that provides the appropriate ‘build-or-buy’ signal strikes an appropriate balance between ensuring efficient entry and sufficient incentives to invest and, in particular, to deploy NGA networks and hence deliver new, faster and better-quality broadband services.*”
278. For nascent technologies the impacts failing to achieve an appropriate balance can be even more pronounced, especially when the business case for FTTH investments remains challenging. Therefore, any regulation in these areas needs to tread lightly and be sufficiently flexible to ensure that this balance is kept in equilibrium. It is for this reason that Ofcom's Wholesale Fixed Telecoms Market Review (WFTMR), has adopted an approach where charge controls imposed are not cost based but rather held flat in nominal terms. The expectation being that while this could lead to over-recovery of costs (from legacy services such as FTTC) it is better than imposing cost-based charge controls which risk undermining investment.
279. Comparing such developments to real world outcomes, it is clear that there is a limited premium available between FTTC and FTTH wholesale prices. Indeed, eir's introduction of a significantly faster 500 MB product in July 2020 and the collapsing of tiered prices of 300 MB and 500 MB from €28.50 and €33.50 per month to the lower level profile of 150 MB of €23.50 indicate that the price premium relative to FTTC pricing is very elastic. Therefore, it is completely inconsistent with ComReg's regulatory objectives and migration to VHCN that a new entrant

could/would/should lower its price of FTTC and recover higher costs through substantially higher prices from FTTH as currently suggested by ComReg.

280. Third, while the modelled assumptions are inconsistent from a regulatory and commercial perspective, even on a further theoretical level the modelling assumptions fails to pass any level of scrutiny. The hypothetical new entrant is unlikely to suppress FTTC price today and push cost recovery further into the future where both regulatory and technology risk would tend to be higher. In particular, as evident from the current regulatory environment, in ComReg signalling the move to cost-orientation for FTTC in 2016 once the network deployment was completed, not respecting the fair bet on risky returns as they presented themselves at the time of investment and now the consultation to lower (albeit based on incorrect modelling assumptions) FTTC prices further — eir submit that the new entrant would either not invest (or further invest) in FTTH or would at a minimum maintain FTTC prices at current levels to ensure the migration path to FTTH is preserved and to contribute capital for FTTH deployment costs.

Incorrectly calculated FTTC Bitstream prices

281. As identified in eir's response to Question 11, ComReg has incorrectly included the lower local loop costs of deregulated exchanges in the Urban Commercial Footprint in calculating the average local loop costs for FTTC Bitstream sold in the WCA Regional WCA Market.
282. The ANM model and the NGA model use the same LLU and SLU inputs for the FTTC VUA and FTTC Bitstream prices. This is incorrect. The price control for FTTC VUA arises from eir SMP in the national market for WLA services and the LLU and SLU prices calculated for the entirety of the Urban Commercial Footprint (as described by ComReg) where FTTC and EVDSL have been deployed is the correct input for the FTTC/EVDSL VUA service.
283. In the case of the FTTC Bitstream, the price control applies only to services in the WCA Regional Market – the Urban WCA Market has been found by ComReg to be competitive and prices are set by commercial negotiation with the various providers of Bitstream service including FTTC Bitstream. The FTTC Bitstream service provided by eir in the WCA Regional market is subject to price control by cost orientation.

Part of the cost to eir of delivering this service are the costs of the sub-loops and full loops used to deliver the FTTC and EVDSL bearers to the Bitstream end users in the Regional market. These sub-loops and full loops are those in the Urban Commercial Footprint – but only in those regions within the eir exchanges in the WCA Regional Market.

284. To confirm that the correct treatment of sub-loop and full loop costs is the revised one described above in setting the correct level of controlled FTTC/EVDSL Bitstream price it is only necessary to consider the dynamics of the sub-national markets for Bitstream services identified in the ComReg market analysis. ComReg has correctly identified that the national WCA market has two parts – the urban market where there are a number of competing providers offering services and the regional market where eir is considered by ComReg to have market power. If eir is required by the current incorrect implementation of cost orientation to provide Bitstream service in the Regional WCA market at a price that only recovers the average national cost of delivering the service as FTTC services move to FTTC VUA in the urban area and/or FTTC Bitstream prices fall below that average through discounts in the urban area then eir's national FTTC Bitstream revenues cannot recover eir's national FTTC Bitstream costs. In simple terms, as currently modelled the regulated FTTC Bitstream price proposed by ComReg is inappropriately being cross-subsidised by the lower local loop costs that are not subject to SMP. This is inconsistent with ComReg's regulatory obligations.
285. Similarly, as the Regional WCA Market is expected to reduce further subject to ComReg D20/114 then before ComReg can arrive at a final decision those exchanges must also be excluded from the Urban Commercial Footprint to correctly model FTTC Bitstream costs. See also paragraphs 286 and 289-291.
286. While BRG have been able to run the ANM model to include only Regional WCA exchanges in the Urban Commercial Footprint, a similar correction is required in the NGA Model to calculate the additional WEIL and backhaul costs for those remaining Regional WCA exchanges in the Urban Commercial Footprint. eir has not been able to make those changes in the NGA Models.

A better way forward

287. When the modelling errors are corrected both the FTTC VUA and FTTC Bitstream are close to the extant rates – see Table 13 and Table 14. However, this is before correcting for eir's fair bet WACC adjustment and accelerated depreciation to allow appropriate cost recovery.

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Table 13: Corrected FTTC VUA prices per Confidential ANM (eir)

		FY 20/21	FY 21/22	FY 22/23	FY 23/24
Prices per Consultation	FTTC VUA	18.67	18.62	18.62	19.08
Corrections					
i) Update of SLU and LLU prices		0.97	1.11	1.22	1.37
ii) Reduced asset life (NGA Model) impacting migration costs		0.57	0.58	0.59	0.61
Total Value of corrections*		1.54	1.69	1.81	1.98
Corrected prices					
	FTTC VUA	20.21	20.31	20.43	21.06
* Before correction of					
a) Fair bet WACC adjustment					
b) Reduced asset lives to avoid asset stranding					

Table 14: Corrected FTTC Bitstream prices per Confidential ANM (eir) and NGA Cost Model

		FY 20/21	FY 21/22	FY 22/23	FY 23/24
Prices per Consultation	FTTC Bitstream	22.45	22.47	22.59	23.22
Corrections					
i) Update of SLU and LLU prices		0.97	1.11	1.22	1.37
ii) Reduced asset life (NGA Model) impacting migration costs		0.58	0.58	0.59	0.61
iii) Removal of non-regulated areas from Urban Commercial Footprint		0.90	1.03	0.96	1.06
Total Value of corrections*	FTTC Bitstream	2.45	2.72	2.77	3.04
Total value of corrections (interaction of corrections)*		2.41	2.69	2.75	3.01
Corrected prices					
	FTTC Bitstream	24.86	25.16	25.34	26.23
* Before correction of					
a) Fair bet WACC adjustment					
b) Reduced asset lives to avoid asset stranding					

288. In Table 13 and Table 14 eir has not been able to amend:
- a) the WACC to take account of the different regulated rates of return that were in existence when eir undertook its invest to i) ensure a fair bet return on eir's FTTC investment or ii) to correct the tilted annuity calculation; or
 - b) to reduce the existing asset lives in the ANM to avoid asset stranding and to shorten pro-rata on-going investment over the price control period. These corrections; or
 - c) the reduced apportionment of costs to FTTH to recover enough of the FTTH investment cost from copper services to make the business case for investing profitable and whereby the cost of legacy services would continue to be entirely recovered from the consumers that purchase legacy services.
289. Instead of following the regulated price path provided by the ANM, eir proposes a voluntary commitment to continue to charge a fixed price for FTTC VUA and FTTC Bitstream for the duration of price control period.
290. FTTC VUA and FTTC Bitstream will be charged at €20.36 and €25.27 per month respectively. For FTTC Bitstream the price charged for usage will be €0.37 per MB.
291. Furthermore, ✂
292. Finally, eir notes that paragraph 5.166 of the Consultation states that *"The exchanges which were classified as being part of the Urban WCA Market or the Regional WCA Market (1,011 out of 1,148 ANM exchanges), as determined by the 2018 WLA/WCA Market Review Decision. The forthcoming WCA Mid Term Review may move some exchanges currently subject to regulation in the Regional WCA Market into the Urban WCA Market and so those exchanges may no longer be subject to regulation. In making its final decision on the ANM ComReg will use the most up to date definition of the Regional WCA Market"*. For the reasons set out in paragraph 175, if ComReg propose to continue to use the ANM to set regulated prices for the forthcoming period, it must re-consult on the outputs of the ANM based on the smaller footprint of WCA exchanges that remain relevant for the cost model.

Q. 16 Do you agree with ComReg's preliminary views that the price for CG Bitstream services should be updated in line with paragraph 6.86? Please provide reasons for your response.

293. See also eir's response to Question 13.

294. ComReg states at paragraph 6.86 that its "preliminary view is that the monthly rental charge for CG Bitstream services should be revised to take account of the revised WACC of 5.61%". eir does not consider that this proposed approach is appropriate at the current juncture, particularly in the context of a timely migration to fibre and copper switch-off.

295. As noted by ComReg at paragraph 6.83, the 2018 Pricing Decision "recognised that fixed line network operators in Ireland have been focused on investing in NGA infrastructure rather than CGA and this trend is expected to continue for the duration of this price control period. This continues to result in the migration of wholesale customers from CGA to NGA broadband services such as FTTC or FTTH." ComReg further states at paragraph 6.84 that "the build/buy signals for CG Bitstream and FTTC services should remain consistent. Simply altering the prices for FTTC services may affect the incentives for OAOs to migrate end-users to fibre-based services."

296. First, eir considers that the trend of investing in NGA infrastructure is expected to continue but it is important to note that the progress seen to date is in the context of the current pricing levels. The continued migration of wholesale customers from CGA to NGA broadband, in particular FTTH, will as such be prefaced on pricing levels that maintain the incentives established by D11/18. This interaction of copper-based prices and FTTH deployment was also recognised in New Zealand in 2013 when the Commerce Commission originally proposed to lower copper prices which the State identified could then cause a funding issue for operators deploying FTTH.

297. Second, while eir agrees that the pricing for CG Bitstream and FTTC services should remain consistent, eir does not agree that FTTC pricing should be amended as proposed. This is discussed at length in eir's response to Question 15 but of particular relevance in the context of ComReg's proposals for CG Bitstream pricing, is the fact that the migration of users from the legacy network is currently customer

driven and a consumer's assessment of whether to switch to full fibre therefore depends on the relationship between the on-going charges for such a service and the charges they pay for their existing service.

298. If the prices of CGA services are reduced further, the existing price differential will increase with knock-on effects for the adoption rates of full fibre broadband. This is of particular relevance in the NBP IA, where the majority of current CGA users are located. As such, a consumer's assessment of whether to switch to FTTH provided over the NBI network will depend on the price they currently pay for their CGA service. See Figure 1: ComReg reducing consumer migration incentives to the State funded FTTH network.
299. Ofcom considers that the interaction of these effects necessitates wholesale access prices for copper services that remain stable over the short term and have the flexibility to increase over the medium term, in order to create the correct signals for different types of operators and users at different points in the migration process.
300. In recognition of the dual role that copper plays in funding NGA deployment and migration incentives for legacy networks a number of regulators have already started to move away from the classic ladder of investment based pricing remedies of cost plus, even for copper prices.
301. The policy objective of timely retirement, which is beneficial from a consumer, commercial and efficiency perspective would benefit more from a forward looking and holistic approach than it would from ComReg's seeming preference for silo-based proposals that fail to consider the interaction of regulatory obligations in the context of the overall regulatory regime.
302. Finally, ComReg's proposal in paragraph 6.86 is wholly inconsistent with ComReg's statement in paragraph 6.84 which states "*Going forward, ComReg considers that there is no need to encourage further build in terms of current generation services but considers that it is important to protect investments that have already occurred. ComReg also considers that the build/buy signals for CG Bitstream and FTTC services should remain consistent.*" [emphasis added].

303. As such, and consistent with eir's reasoning in paragraphs 19-22, in order to protect the investment incentives for FTTH roll-out (their funding) and successful migration away from lower bandwidth broadband services (including to the State funded FTTH Network) the CGA prices should be capped at the current extant prices and allow to gradually increase by $\Delta\text{CPI} + 5\%$. See eir's response to Question 13.

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Q. 17 Having outlined ComReg's initial assessment of relevant factors for the costs associated with connections and migrations, do you consider that they are relevant and complete? Do you consider that any other factors are relevant? In response please provide well justified reasons and provide data to assist in ComReg's consideration of this matter.

304. While the list of costs for connections and migrations may be complete there are a number of additional considerations before an appropriate price can, or should, be set for FTTH connection and migration services. These factors include the differences between the nature of urban and rural connection configurations, the presence of competing networks, and the different intensity of competition across the three regions.
305. While the cost of urban FTTH roll-out and connection costs are not yet fully known, we consider that the higher potential of off-net churn to Siro, Virgin Media and other competing technologies and substitutes over-time will counter-balance the likely lower network urban cost (if such lower costs do materialise) such that eir has the opportunity to recover its average national connection costs at that rate.
306. In a market with infrastructure competitors and demand uncertainty and evolving technologies the success of next generation broadband access is far from clear cut given the significant cost involved. Recognizing that retailers are partners in selling FTTH broadband access, we believe that charging a national price of €100 per FTTH event provides appropriate signals to the market that eir is committed to its fibre investment.
307. When setting the level of this charge in the context a migration/connection model and cost recovery there are a number of factors that must be assessed. In summary these are;
- a. the investment per connection incurred at the time the eir FTTH deployment is first fitted with a fibre drop cable and ONT.
 - b. the return on that investment to include any additional risk associated with uncertainty in demand for FTTH service over the life of the connection assets.
 - c. the economic life of the various assets used to deliver the FTTH connection service.

- d. the number of connection and migration events over the economic life of the FTTH path into the building served
- e. eir's cost recovery over time.

308. eir considers that the proposed rate per FTTH event is in compliance with ComReg's decision as discussed further below.

Factors affecting the price level – investment per home connected

309. It is important to recall that the eir investment in FTTH currently passes predominantly rural premises. There is less than one premise per pole and the pole route runs on one side of a country road. Where an additional (drop) pole is required to serve a building on the opposite side of the road from the (feeder) pole route carrying the FTTH infrastructure the likelihood of a second service using this pole is low as the new pole can only serve a second building if it is within 80 metres of the first building served (and on the same side of the road). The same holds true for duct built to deliver an individual connection in that the probability of re-use in the rural deployment is very low. As such, the incremental cost from eir's additional investment arises from the retail demand for the FTTH service and the ability to recover that investment is solely dependent on that demand. Under the migration/connection model the recovery of that cost is also dependent on the continued demand of the FTTH service from that premises with the householder obtaining services from a number of different retail providers over a period of time.

Factors affecting the price level – return on the investment

310. As the form of pricing to be directed by ComReg for FTTH connection is a series of individual charges to be raised over the life of the service — to recover an initial investment in that connection — one of the key pricing decisions is the appropriate rate of return on that investment. The default ComReg position is that where a price control is by cost orientation that the allowable return is the open eir WACC of 5.61% per annum (a decrease from 8.18% when eir has already incurred a significant connection cost for existing customer at the time). However, this is not appropriate for FTTH investment.

311. In the current case the service subject to the price control is the connection element of FTTH VUA and Bitstream services delivered over a network where an optical distribution network is overlaid on an existing copper distribution network. The EU Commission and BEREC acknowledge that under these circumstances the SMP operator may be entitled to an additional return above the WACC because of the risk that take-up rates may be lower due to customers continuing to use legacy access services or competing infrastructures.
312. Where ComReg has directed a price control for an FTTH service by cost orientation — and is proposing a price structure where a connection investment is only recovered over the economic life — ComReg must consider those factors that indicate that a risk premium above the standard WACC is appropriate. There are, inter, alia two principal sources of adverse risk for the recovery of a connection investment in FTTH – the economic life of the optical distribution network (and associated electronics), and in the case of the migration/connection model the number of on-net (and off-net) migrations.
313. While the average time between a first connection to FTTH and the final migration of the building connected to a successor technology may indeed be 20 years this is subject to both a risk of slow initial take-up of FTTH and of the early assumption of a successor technology. As a migration/connection model elongates eir's cost recovery for the FTTH connection eir considers that a further risk premium of 5% must be added to the extant WACC. As set out above, such a risk premium is supported in an Irish context. Internationally there is precedent from European NRAs providing this and greater levels of risk premium for NGA investments. eir understands that such risk premia have been applied for example in Belgium, Croatia, the Czech Republic, Denmark, France, Germany, Italy, Finland, Luxembourg, and the Netherlands.

Factors affecting the price level – the economic life of the connection assets

314. The proposal laid in the Consultation is that there is a weighted average asset life of 12 years. However, there are a number of costs associated with the connection investment with differing lives. These assets, in increasing order of economic life are;

- The ONT; this powered electronic/optical unit has a MTBF of between 4 and 5 years, and is likely to be subject to technological obsolescence during service life.
- The fibre NTU is a passive unit placed inside the building close to the ONT with a regulated asset life of 6 years
- The fibre optic drop cable has a regulated asset life of 15 years. As fitting this is the single largest cost for the connection service it is likely that the weighted average asset life for a rural FTTH connection asset mix is less than 20 years.
- Poles; the regulated asset life for network poles is 30 years.
- Duct; the regulated asset life for network duct is 40 years.

315. Aside from the issue of the regulated asset life that is appropriate for the FTTH connection service there must be consideration of the effective economic life that is determined by two factors. The first is the economic life of the FTTH technology that uses the connection. The second is the service life of the connection during that economic life. By this we mean the time from the first connection of the building served to the FTTH capability to the time that the FTTH service is finally removed – reduced by the extent of any intervening periods where the building is not actively served.

316. As such, the systematic risk associated with FTTH returns is higher and as recognised by the 2010 EC Recommendation requires a risk premium to be added to the WACC relevant for legacy copper-based telecommunication investments.³² Specifically, the recent notice published by the European Commission and used by ComReg in informing its recent WACC decision (ComReg D10/10) states that “*The Notice does not address the applicability or the calculation of NGA risk premiums and excludes any consideration of the appropriateness of price control obligations for new very high capacity networks as defined in Article 2(2) of the Code*”. Put simply, there is no service without the underlying deployment of assets that deliver that service. Without demand for the FTTH service after first connection then the ability to recover any or part years of the regulated asset life is truncated. For this

³² The 2010 EC Recommendation states in respect to FTTH that “Investment risk should be rewarded by means of a risk premium incorporated in the cost of capital.... NRAs should estimate investment risk, inter alia, by taking into account the following factors of uncertainty: (i) uncertainty relating to retail and wholesale demand; (ii) uncertainty relating to the costs of deployment, civil engineering works and managerial execution; (iii) uncertainty relating to technological progress; (iv) uncertainty relating to market dynamics and the evolving competitive situation, such as the degree of infrastructure-based and/or cable competition; and (v) macroeconomic uncertainty.”

reason, eir submits that ComReg cannot impose a legacy WACC to FTTH connection/migration charges.

317. Under the migration/connection model the total connection costs are recovered equally over several connection and migration events over the platform life. For the FTTH migration/connection model eir proposes that the life of the platform is 20 years. This is a reasonable and prudent assumption as the roll-out is time consuming as has been demonstrated by the eir 300k rural deployment and the SIRO deployment in provincial towns and cities, and as adoption rates are gradual where many customers already have Broadband that meets their current needs. Within the 20 year time horizon life our experience indicates that a future platform will disrupt FTTH demand and that services will gradually cease (this has been factored into the confidential supporting model already provided to ComReg as part of Wholesale Notification 18_013).
318. In urban areas the economic life of the FTTH platform may be shorter and the risk of off-net churn will substantially be higher.

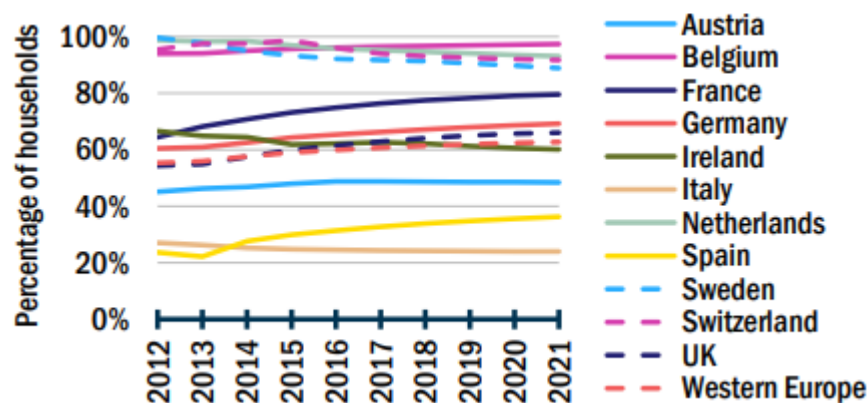
Factors affecting the price level – the probability of a chargeable migration

319. The proposal laid out in paragraph 13.30 in the WLA WCA decision states that network assets should be recovered using “the same assumptions about customer churn as are used in the margin squeeze tests” and as set out in the Consultation is expected to be 42 months, this needs careful consideration. In general the average customer lifetimes for “margin squeeze tests” are for the purposes of calculating certain retail costs. Where wholesale prices are set by reference to a margin squeeze test these tests are used to determine the appropriate retail costs which inform the maximum safe price for a regulated wholesale access service.
320. However, in the case of the migration/connection model the “assumptions about (retail) customer churn” are to be used to recover a large wholesale network investment to serve a single building across the successive lives of multiple retail services. In other words, assumptions about retail market behaviour are directly influencing wholesale cost recovery. As such, the use of the number of typical 42 month lives of a retail broadband service across the economic life of the FTTH connection is too simplistic. This is for two reasons. The first is that the building,

once connected, may have a period over the economic life of the FTTH connection when no retail FTTH service is used. The second is that recent churn data shows that the use of service bundles with multiple retail elements reduces churn. Either, or both, of these factors would lead to the stranding of eir’s wholesale connection costs.

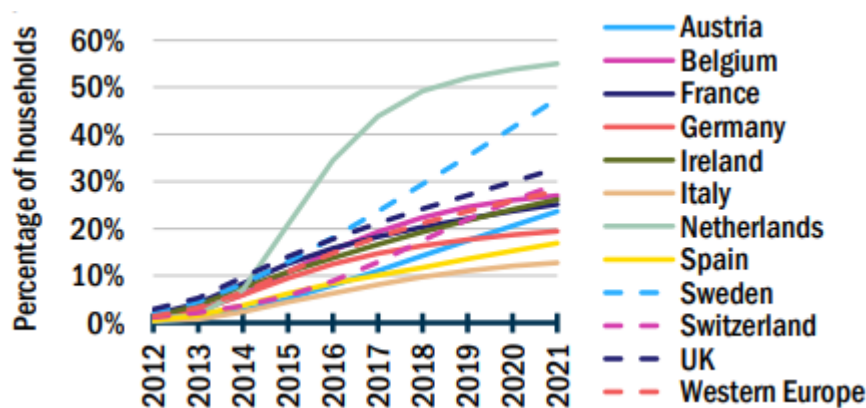
321. If churn is indeed lower and materialises as eir considers likely up to one third of eir’s FTTH connection costs would be at risk of stranding.
322. A factor that affects the length of an individual retail service proposition delivered over eir FTTH is the increasing preponderance of bundled offerings. When Broadband was the only service subject to a retail contract the observed life time was 42 months – \times . As operators started to include TV services in the retail bundle the churn rate dropped. For example, eir retail’s average customer lifetime for NGA services is currently in excess of \times . The inclusion of IPTV by retailers will also reduce churn between operators on eir FTTH network. Vodafone, Sky, and eir retail all market TV propositions as part of their “fibre bundles” – as do Virgin Media on their competing DOCSIS platform. Of particular relevance is that Ireland has a high rate of penetration for paid TV services, both traditional and OTT. According to Analysys Mason, circa 60% of households in Ireland had a subscription to a traditional pay TV service in 2020, while approximately 25% had a subscription to an OTT-to-the-TV set in the same period.

Figure 6: Household penetration of traditional pay-TV services, Western European countries, 2012–2021



Source: Pay-TV services in Western Europe: trends and forecasts 2016–2021, Analysys Mason

Figure 7: OTT-to-the-TV-set subscription penetration, Western European countries, 2012–2021



Source: Pay-TV services in Western Europe: trends and forecasts 2016–2021, Analysys Mason

323. In addition, it appears that Sky’s strategy continues to emphasise growth through continued investment in content and in particular through content aggregation. Sky added Netflix to its premium Sky Q package in 2018 and the acquisition of Sky by ComCast would appear to make it a natural fit for the Peacock streaming service. eir understands that Sky has also been linked to a potential Disney+ hosting agreement. The risk is that by ComReg assuming an average customer lifetime which is significantly different from reality means that eir’s wholesale connection costs will be under-recovered and with perfect information the migration/connection modelled rate should have been set much higher. As noted, this is why the 2010 EC Recommendation and as implemented by other NRAs why FTTH attracts and additional risk premium to the WACC.

324. Some extracts are provided in the hyperlinks below which set out the reduced churn on FTTH networks experienced in Europe. As is evident from the numbers the slower churn is quite apparent on the slide from the Vodafone deck vis-à-vis copper, and even FTTC.

- KPN: <http://www.equitystory.com/Download/Companies/koninkpnnv/Presentations/KPN%20Investor%20presentation%20February%202018.pdf>
- Talk Talk: <https://uk.pcmag.com/talktalk/86054/talktalk-to-drop-ps20m-on-more-satisfying-gigabit-fibre-broadband>

- Vodafone:
https://www.vodafone.com/content/dam/vodafone/investors/conference_presentations/2017-09-19-Vodafone-Fixed-Convergence-Open-Office-Presentation.pdf

325. In rural areas it is not improbable that only one FTTH network will pass any building – eir for the 300k and the State funded FTTH network for the Intervention area. There will be some overlap of buildings passed by eir, SIRO, eNet, and the State funded FTTH network optical distribution networks. However, as the proposed connection/migration model means eir’s cost recovery is extended over a significant period the level of certainty regarding the appropriate assumptions of other competing network deployment decreases — and the probability of off-net churn increases. This is why market reviews are typically required every three years and only consider that period for the purposes of its review. As of today, one of the known unknowns is that there will be some churn off the network due to cessations or migrations to wireless networks – particularly as 5G FWA deployments already announced start to win market share. In order to take account of possible off-net migrations we have included this possibility in the supporting model.
326. In urban areas off-net churn will move services to existing and future networks including Virgin Media and Siro. While we appreciate that some of the figures in Table 19 are illustrative the levels of off-net churn are well below likely outcomes. If we assume a 50:50 urban /rural mix then the implicit level of urban churn is only 17%. A few simple calculations will show that this is substantially too low. The eir urban IFN will pass 1.4 million premises. According to the latest ComReg Quarterly Report Virgin Media currently serve 467,000 of these with cable and FTTP whereas eir with ADSL, VDSL, and FTTH serves just fewer than 700,000. When other providers of FTTP are added in it is likely that just over 500,000 of the IFN premises are served by broadband network providers other than eir. So each time a customer considers changing their broadband provider in the IFN the probability of that customer leaving the eir network is close to 5/12 – or 42%. An additional source of urban off-net churn is the tendency of urban premises to be unoccupied at any given time. Data from recent census returns shows that at any given time 10% of urban dwellings are unoccupied - and that though this figure is constant the actual premises that are empty changes with family circumstances. This factor will also

contribute to about 5% of off-net churn at the end of each customer broadband use.

327. eir has reviewed the input costs assumed for the Average connection cost and considers that the Rural Connection cost of €450 is low, in comparison to the value provided to ComReg in the WS NB BB Connection WO 6 YRs.xlsx, the average connection cost now stands at ✂. There are no other values which we have greater insight on or known variances to that provided by eir to ComReg and it is unclear why these have not been used.

328. However, as demonstrated by eir's recent decrease in the connection/migration price per event to €100 from 1 July 2020, the connection costs for FTTH identified by ComReg as part of this Consultation are largely irrelevant to the level of fee that eir can commercially charge (demonstrated by eir charging consistently below cost).
✂

329. ✂

eir's cost recovery over time

330. It is extremely concerning to eir that ComReg is once again assessing eir's cost recovery within a simplified excel spreadsheet of costs.

331. ComReg's assessment of eir's on-going compliance with its cost-orientation appears to be based on a single spreadsheet relative to the average connection cost, migrations over time and time value of money. This completely fails to consider that i) the risk associated with FTTH is not the same as that of the legacy network WACC recently determined by ComReg to be 5.61%, ii) eir has already invested in FTTH connections when the legacy network WACC was 8.18% (although this is too low relative to the investment risk) and iii) the relevant connection/migration cost of €100 is significantly below the cumulative loss evident in the AFI for FY19. It cannot be the case that even if the "spreadsheet" indicated a lower connection/migration price that ComReg's determination of eir's cost compliance would fail to consider that cumulative loss. That would be inconsistent with allowing a fair return on eir's capital employed. ComReg must clarify its position.

Q. 18 Do you have any views as to the market impact of the existing FTTH connection and migration charges on the potential competition problems that ComReg identified in the WLA market? If you consider that the existing price control obligation is materially failing to address these problems, please provide supporting evidence and reasoning.

332. While FTTH subscriptions have increased, FTTH rollout in Ireland is still at a relatively early stage FTTH coverage in Ireland was 21% at the end of 2019³³ which still lags behind the majority of EU member states and the EU average of 34%. The 2013 EC Recommendation provides guidance on the appropriate cost models that should be used and as demonstrated by NRAs elsewhere there is a range of regulatory tools available to ComReg than those proposed in its Consultation which would lead to better investment incentives and dynamic efficiency. As noted by ComReg at paragraph 8.24, it is required by the EECC to promote connectivity as well as access to and take-up of VHCNs and promote regulatory predictability by ensuring a consistent regulatory approach over appropriate review periods.
333. ComReg states at paragraph 8.22 that *“the large differential between the connection fee and the charge for subsequent migrations in place before the 2018 Pricing Decision had appeared to have stifled competition. It appeared to ComReg that many RSPs were dissuaded from competing for new connections and seemed to be waiting for the opportunity to win customers from other RSPs thereby incurring the much lower migration charge.”*
334. Nonetheless, eir considers that the existing prices set by eir have succeeded in addressing any potential concerns that ComReg may have had prior to D10/18. In particular and as noted by ComReg at paragraph 8.23, wholesale volumes accounted for 37% of eir’s FTTH network volumes as of Q2 2020, an increase of 27% from Q4 2018.
335. ✗. It is disappointing to eir that it appears pursuant to ComReg D11/18 it is not able to offer promotions or discounts for its FTTH services. This may have been a drafting oversight as the conditions for justifying not allowing such promotions and discounts for FTTH services do not hold true. In ComReg D11/18, ComReg states that

³³ Digital Economy and Society Index (DESI) 2020 Ireland

promotions and discounts “can create distortions in terms of products and services which are subject to cost orientation”. However, it is worth noting that FTTH monthly charges are not subject to cost-orientation and eir’s FTTH connection/migration charges are already below cost. As a result there is a commercial asymmetry in the Irish market where both Siro and NBI are able to offer promotions and discounts to its FTTH offering including its connection charge but eir is unable to do so.

336. One interpretation of such promotions and discounts may also prevent \propto . In light of these developments, eir encourages ComReg to revisit this position in updating its current decision.
337. eir notes ComReg’s view at paragraph 8.25 that it ordinarily “would not revisit the nature of a price control obligation in advance of a fresh market analysis, and clear and compelling evidence that the price control is failing to address the competition problems identified in the market analysis would be required prior to ComReg engaging in an early review of a price control.” eir considers that this is the correct approach and is of the view that there is no evidence to suggest that the existing price control is insufficient. However, it is unclear why ComReg has not applied this logic to the remainder of its proposals in this Consultation.

Q. 19 Do you agree with ComReg's preliminary view that Eircom should, for PSTN WLR, provide annual information on key demand and cost metrics as part of its AFI submissions? Please provide reasons for your response.

338. There is insufficient detail in the Consultation for eir to fully respond to this question.
339. Based on the Consultation, it is unclear to eir what ComReg would consider to be the "key demand and cost metrics in the exchanges that are part of the Regional Low-level FACO market". It is important to note that per ComReg's FACO market analysis that this currently would only incorporate ~25% of current WLR lines nationally. As ComReg has identified, with the roll-out of the State funded FTTH network this figure will continue to decline over the price control period. More importantly, the number of exchanges that would be subject to SMP would also decrease as a result over the price control period.
340. eir does not agree that it should provide such annual information to ComReg. The cost of regulatory burden for this reporting which would require the same level of review and analysis from eir's team compared to the variant of the same requirement today (nationally) under the existing regulatory obligations for a market which will be four times smaller and declining, amounts to imposing a significantly greater regulatory burden (including in terms of cost of administration) relative to the size of the market regulated.
341. As noted by ComReg in the Consultation "Therefore, the need to conduct an annual review of these prices may not be proportionate as the cost-orientation of PSTN WLR prices is no longer established on a national basis. Hence, ComReg is of the preliminary view that it is no longer proportionate and justified to continue to require Eircom to prepare the annual reconciliation". It is not clear what analysis ComReg has done relative to the unspecified requirement to determine that it would be disproportionate to look for existing data but that a similar exercise for potentially a more bespoke and granular data set (as eir's data is more readily available at a national basis) could somehow be proportionate.
342. In any event, the Access Regulations require that any obligations imposed must be based on the nature of the problem identified and be proportionate. Put simply,

ComReg considers that absent regulation there is a risk that eir would charge excessive prices. It is clear that the price path proposed under eir's voluntary commitment is not excessive – relative to the regulatory path projected by the ANM (when properly corrected). Therefore, the associated regulatory burden on eir to continue to monitor and analyse “*key demand and cost metrics*” for a market which is tiny and getting smaller is not proportionate and is not warranted.

343. Finally, eir notes that ComReg D08/10 is clear that AFIs are required “*on an ad hoc basis as part of (for example) price reviews*”. Consequently, ComReg pursuant to ComReg D08/10 cannot require this information to be provided annually — as this would fail to be on an ad hoc basis.

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Q. 20 Do you agree with ComReg’s preliminary view that Eircom should review the ANM annually for material / exceptional changes, and that such material/exceptional changes are brought to the attention of ComReg for consideration? Please provide reasons for your response.

345. eir does not agree that it should annually review the ANM for material / exceptional changes. As noted in eir’s response the ANM is significantly complex and involves a large amount of hard-coded and redacted information. Therefore, it is not clear how eir could update the redacted version of the model and determine if those changes are indeed material or exceptional.

346. Similarly, for reasons set out in eir’s response in order to correctly account for tilted annuities etc. it is simply not a matter of updating certain fields.

347. eir would need specific guidance from ComReg as to how the ANM should be updated. For example, does ComReg intend that eir update the model annually afresh with re-base lined data? This of course would give a different cost recovery trajectory relative to the costs it had previously incurred. In that respect it may be more appropriate for ComReg to review the model from time-to-time as it already has the necessary resources and knowledge of how the ANM works. However, it is not clear how this would be consistent with ComReg’s view at paragraph 8.25 that it ordinarily “*would not revisit the nature of a price control obligation in advance of a fresh market analysis, and clear and compelling evidence that the price control is failing to address the competition problems identified in the market analysis would be required prior to ComReg engaging in an early review of a price control*”.

348. Furthermore, there are certain out-turns such as weather conditions in the year that may be better or worse than the average used to generate the projected price path over five years — this along with other changes may not represent a sustainable change and could be off-set in subsequent years.

349. Finally, it is not clear how ComReg’s proposal is consistent with its view in paragraph 9.3 of the Consultation which states:

“an annual review may be less important when costs are modelled on a BU basis and the demand assumptions follow a Hypothetical Efficient Operator approach.

The modelling of Eircom's TD costs in the ANM that informs the proposed PSTN WLR prices is now limited to those active lines in the exchanges of the Regional Low-Level FACO Market. Therefore, the need to conduct an annual review of these prices may not be proportionate as the cost-orientation of PSTN WLR prices is no longer established on a national basis."

350. As the ANM is also used to generate the building blocks for FTTC VUA and FTTC Bitstream which is based on a "BU basis and the demand assumptions follow a Hypothetical Efficient Operator approach" it is unclear how the outcomes of eir on a HCA basis whether material or exceptional or not should be updated in the ANM to reflect that of a new hypothetical operator in the Irish market.

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Q. 21 Do you agree with ComReg's preliminary view on the price control periods at paragraph 9.10? Please provide reasons for your response.

352. The Consultation proposes that;

- The price control period for the WLA and WCA Services should run until 30 June 2024 but in any event, it should remain in place until further notice by ComReg; and
- For PSTN WLR and POTS based FTTC the price control period should run for five years consistent with the forthcoming FACO Decision but in any event, it should remain in place until further notice by ComReg.

353. eir does not agree that the price control period for the WLA and WCA services should run until 30 June 2024. As set out in our submission, ComReg must now undertake a new market analysis as there have been material developments in the market that are not reflected in 2018 WLA WCA market analysis decision. In any event, eir notes that even under the existing market analysis using a five year review period that a revised market analysis should be in place by at least 19 November 2023 and therefore the proposed price control period extends beyond that allowed for by the European Commission.

354. eir remains concerned that ComReg's work programme continues to be characterised by delays. It is notable that since the review of the Recommended Markets in 2014, ComReg only managed to complete its reviews of all four listed markets between the end of 2018 and early 2020. In addition ComReg continues to regulate markets, due to a delay in their review, that have long since been removed from the Commission's list of Recommended Markets. eir notes that the list has been updated at the end of 2020 and there are now only two wholesale markets designated by the European Commission as susceptible to ex ante regulation (the market for wholesale local access provided at a fixed location and the market for wholesale dedicated capacity).

355. eir also remains concerned with regard to the manner in which ComReg is implementing remedies in the Irish market as well as the design and complex nature of such remedies. It would appear that there is a prevailing issue with regard to

sequencing and ComReg continues to implement remedies and devote significant resources to work streams based on out of date market reviews. For example, pricing reviews are frequently undertaken on the basis of out-dated market analyses – which are soon due for review or have already lapsed.

356. While ComReg has signalled on numerous occasions that the market review delays were as a result of a lack of resources, eir notes that all recent Market Review Decisions in the last 10 years have been delayed where the pricing remedies have been imposed in perpetuity or where the regulatory price path is beyond the market review period.
357. As markets continue to evolve, including the number of listed markets susceptible to ex ante regulations, the piece-meal and ill-sequenced review of pricing remedies increases the risk of regulatory failure. The Irish market should not have to remain a laggard in terms of adopting regulatory best practice as a result of delays on the part of ComReg. It cannot be the case that ComReg continues to publish regulatory pricing paths beyond the market analysis review period and as such the WLA and WCA path should at a maximum end on the 30 November 2023. However, it would represent an appropriate signal to all interested parties that the price path would finish on the 30 June 2023 as this would acknowledge ComReg's commitment to undertake its market analysis assessment on time.
358. eir agrees that it would be consistent to implement a price control period (for five years) with that of the time period considered for the forthcoming FACO market analysis decision if pricing remedies are imposed as part of that decision. However, as referenced in eir's response to Question 1, eir does not consider that ComReg's preliminary views set out in its FACO market analysis consultation is correct. Finally, eir notes that the Decision Instrument in Annex 3 contains 6 years of a price control path which is contrary to what ComReg is consulting on in this section.

Q. 22 Do you have any comments on the Regulatory Impact Assessment and in your opinion are there other factors which ComReg should consider in completing its Regulatory Impact Assessment? Please provide reasons for your response, clearly indicating the relevant paragraph numbers to which your comments refer, along with relevant factual evidence supporting your views.

359. The Regulatory Impact Assessment ('RIA') contained in Section 10 of the Consultation and Draft Decision document 20/101 is not fit for purpose and is deficient in a number of important aspects.

360. The ultimate aim of a RIA is to ensure that all measures being proposed by ComReg are appropriate, proportionate and justified. As such they should include a detailed and accurate examination of costs, benefits and impacts on stakeholders as well as consideration of alternative regulatory options. ComReg itself notes at paragraph 10.1 that a RIA *"should help identify regulatory options and should establish whether the proposed regulation is likely to have the desired impact. The RIA is a structured approach to the development of policy and analyses the impact of regulatory options on various stakeholders"*. RIAs should seek to identify any negative impacts of regulation and therefore seek to minimise unintended consequences, such as promotion of the continuing use of legacy technologies at the expense of the uptake of Next Generation Services. Real market impacts should therefore be assessed.

361. In this regard, eir notes that ComReg has not given any consideration to the maintenance of strict cost orientation obligations and the proposed price reductions for FTTC and CG Bitstream services as a result of updating the model, proposals that should also be subject to a RIA. Neither has ComReg given any consideration to other regulatory options – including eir's voluntary commitment and conducting a review of the WLA and WCA markets to determine whether such options may better be suited to achieving the desired impacts of timely migration and switch off. We therefore consider that the RIA contained in Section 10 of the Consultation and Draft Decision document 20/114 is deficient and not fit for purpose.

362. Without prejudice to this, eir has provided comments on steps 1, 3 and 5 identified by ComReg as being necessary for assessing the various regulatory options it has considered. Each is discussed in turn below.

Step 1: Describe the policy issue and identify the objectives

363. ComReg states at paragraph 10.9 that the competition problems identified in ComReg 20/46 *“led to ComReg’s preliminary conclusion that some form of price control should apply to PSTN WLR. Further, ComReg specified in the 2020 FACO Consultation that the form of price control for PSTN WLR would be specified through this Consultation, including the relevant costing / pricing methodology to be applied”*.
364. However, as discussed in our response to Question 1, eir does not consider that the geographic differences in competition in the FACO market are appreciably different to the extent that they justify the existence of sub-national markets. The geographic scope of the competitive FACO market is in fact national and ComReg’s analysis leading to a conclusion that there is an “uncompetitive” sub-national Regional Market is flawed.
365. In particular, ComReg has failed to adequately analyse the market on the basis of either existing or prospective competition, through the exclusion of both Virgin Media and NBI from its analysis. In addition, the coverage threshold of 80% determined for the analysis of competition within small rural Exchanges (that have 816 premises on average) is overly conservative and in conjunction with the failure to account for the impact of NBI deployment has exacerbated errors in the delineation of EAs between Urban and Regional Markets.
366. ComReg’s assertion that 80% is appropriate is based on ensuring there is sufficient competition within an Exchange. This fails to consider the national retail market and that wholesale competitive forces nationally provide far greater leverage, negotiation and the countervailing buying power than could ever be exerted successfully at the wholesale level in small individual exchanges. In effect, ComReg is treating each exchange as an individual market which in itself creates a market

so small that it lends itself to (incorrectly determining) dominance and thus a de facto SMP designation.

367. The end result of ComReg's flawed analysis is continued regulation of premises that are already FTTH passed e.g., just under \approx ³⁴ premises covered by eir's rural FTTH rollout. It is also clear that premises passed by SIRO and Virgin Media NG broadband are in the regulated market given the fact that NGA coverage in Ireland is 96% but ComReg only proposes to deregulate 74% of premises.
368. eir considers that ComReg should now consider whether the imposition of a cost-oriented pricing obligation in a declining sub-set of a legacy market is appropriate in the context of the overall transition from copper to fibre and the transformation of telecommunications infrastructure in Ireland. eir is of the view that ComReg should consider its proposals and regulatory assessments in the light of the need to promote fibre investment and support a timely and smooth migration from copper to fibre.
369. ComReg further states at paragraph 10.11 that its "*objective in re-imposing cost orientation on Eircom for PSTN WLR, (albeit on a sub-national basis rather than nationally as before), is that it balances the risk of Eircom charging excessive prices with the need to ensure that PSTN WLR prices allow Eircom to recover its efficiently incurred costs.*"
370. However, the imposition of obligations in respect of PSTN WLR pricing has to be considered in the context of a declining market and the timely transition from copper to fibre. eir considers that a price cap at current price levels, in line with its proposed voluntary commitments, would provide a better balance between allocative and dynamic efficiencies, which should be of key concern to ComReg at this particular juncture. This method would also benefit from increased ease of application as opposed to a strict cost-orientation pricing obligation. See also eir's response Questions 1 and 16.

³⁴ Table A8.10, ComReg Document No 20/46, "Market Reviews Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non-Residential Customers Wholesale Fixed Access and Call Origination". Dated 17 June 2020

371. eir notes that Ofcom (ComReg's peer), in its Wholesale Fixed Telecoms Market Review (WFTMR), has adopted an approach where charge controls imposed are not cost based but rather held flat in nominal terms. The expectation being that while this may lead to modest over-recovery of costs it was better than imposing cost-based charge controls which could risk undermining investment. Ofcom noted in the WFTMR that the evidence suggests its approach to date is having the desired effect, in that it is seeing competitive network build develop. In addition, Ofcom allows Openreach to recover enough of the FTTH investment cost from copper services to make the business case for investing profitable, whereby the cost of legacy services would continue to be entirely recovered from the consumers that purchase legacy services.
372. Finally ComReg states at paragraph 10.12 that in choosing the proposed methodology, it *"has taken account of Section 12 of the Act, Regulation 6(1), 8(6) and 13 of the Access Regulations, and Regulation 16 of the Framework Regulations."*
373. In particular ComReg considers that the relevant regulatory objectives are as follows;
- (i) Section 12 of the Acts: promote competition, efficient investment in infrastructure and innovation, contribute to the development of the internal market and promote interests of users within the community and encourage access to internet at reasonable cost to end-users;
 - (ii) Regulation 6(1) of the Access Regulations: promote efficiency, promote sustainable competition, promote efficient investment and innovation and give the maximum benefit to end-users;
 - (iii) Regulation 8(6) of the Access Regulations: obligations shall be based on the nature of the problem identified, proportionate and justified and only be imposed following consultation;
 - (iv) Regulation 13 of the Access Regulations; promote efficiency, promote sustainable competition and maximise consumer benefits; and
 - (v) Regulation 16 of the Framework Regulations; promoting regulatory predictability by ensuring a consistent approach over appropriate review periods and taking due account of the variety of conditions relating to

competition and consumers that exist in the various geographic areas within the State.

374. eir addresses each of the overarching regulatory objectives below but in short eir considers that ComReg's impact assessment already fails at this first stage in that its current proposals do not in fact meet the stated objectives.

Promote competition

375. ComReg considers at paragraph 10.15 that given the low line densities in the regional market *“the “buy” option is likely to be favoured by OAOs in the short to medium term. ComReg therefore considers that OAOs will buy access to PSTN WLR to serve end users that seek telecom services in the Regional Low-Level FACO Market. Hence, in areas where no infrastructure-based competition is likely to develop investment signals are less important and cost recovery of efficiently incurred costs (or TD HCA costs) is the key regulatory concern”* [emphasis added].
376. First, eir notes that the Regional Market identified by ComReg includes premises that are already passed by NGA and as such encouraging the “buy” option for PSTN WLR through a cost orientation obligation will only serve to delay migration to next generation technologies and thus delay eventual copper switch off. ComReg recognises at paragraph 10.16 that *“[i]f the price for PSTN WLR is set too low OAOs may not be able to migrate their customers to more modern technologies such as fibre, even where fibre is available. This would prolong the use of the copper network”*. eir considers that this is the exact outcome that will occur in the context of ComReg's current proposals.
377. Second, the NBI rollout will cover any premises in the Regional FACO market that are not already covered by NGA. This rollout has now commenced and will be ongoing over the short to medium term. In fact according to the most recent press release from the Government on NBP progress, *“over 90% of premises in the State will have access to high-speed broadband within the next four years.”*³⁵ eir notes that this is well within the market review timeframe, given that ComReg does not

³⁵ <https://www.gov.ie/en/press-release/ba41f-significant-progress-on-the-national-broadband-plan/>

intend to publish its Decision on the FACO markets until Q2 2021, barring any delays. Maintaining low prices for PSTN WLR so as to encourage the “buy” option for OAOs will likely delay migration of end users to NBI’s network, again delaying eventual copper switch off. Given the benefits of timely transition and copper switch off from an environmental, digital transformation and post-Covid recovery perspective, eir considers that this is the ultimate objective that ComReg should be pursuing.

Encourage efficient investment in infrastructure and promoting innovation

378. ComReg states at paragraph 10.19 that “[o]utside densely populated areas, infrastructure-based competition is unlikely absent state funding, such as through the NBP. Therefore, in areas where no infrastructure-based competition is likely to develop investment signals are less important and cost recovery of efficiently incurred costs is the key regulatory concern”.
379. As discussed throughout this response, eir considers that in such areas, the key regulatory concern is in fact the timely transition to fibre and copper switch-off.
380. ComReg further states at paragraph 10.22 that “OAOs that wish to provide a voice service to end users in the Regional Low-Level FACO Market, are reliant on PSTN WLR provided by Eircom, as it would be uneconomical for the OAO to invest in their own infrastructure in the short to medium term. As such, visibility and certainty regarding future wholesale prices is important so that operators can progress their investment plans.”
381. Again, ComReg fails to recognise that a significant number of premises within the Regional FACO market are already passed by next generation and fibre networks. eir notes that just under $\frac{1}{3}$ ³⁶ premises covered by eir’s rural FTTH rollout are included in the Regional FACO market. It is also clear that premises passed by SIRO and Virgin Media NG broadband are also included in the Regional FACO market.

³⁶ Table A8.10, ComReg Document No 20/46, “Market Reviews Retail Access to the Public Telephone Network at a Fixed Location for Residential and Non-Residential Customers Wholesale Fixed Access and Call Origination”. Dated 17 June 2020

382. In addition, on a forward looking basis ComReg should recognise that the pricing of legacy products in the NBP IA, including PSTN WLR, will of course affect the speed of transition to NBI's services. This effect will be evident as NBI rollout occurs over the short to medium term and as such should be accounted for in ComReg's current proposals.

Contribute to the development of the internal market

383. At paragraph 10.26 ComReg states that the "[t]he principles of BULRAIC+ for active assets is in line with the 2013 EC Recommendation." It appears that ComReg considers that the cost approach adopted is the only facet of its proposals that needs to be considered as relevant for contributing to the development of the internal market.

384. First, eir notes that the Commission is currently in the process of reviewing the 2013 EC Recommendation, given the shift in focus of the EECC to the promotion of investment in and uptake of VHCNs. eir understands that it is currently anticipated that the new Recommendation, arising from the review of the 2010 NGA Recommendation and the 2013 NDCM Recommendation, will be published in early 2021 and that the Commission considers that there is likely a need to provide additional guidance on the issue of regulatory incentives and migration from copper to fibre, particularly in the context of environmental concerns and the green transition. eir assumes that ComReg is aware of any such potential developments and should therefore be mindful of the direction of travel of EU level policy rather than relying solely on an older version of the Recommendation that is due to be updated shortly.

385. Second, in addition to the issue of the cost approach adopted and taking a step back, the market in question is centred on a legacy product and was removed from the list of markets susceptible to ex-ante regulation in 2014. eir understands that in terms of EU level precedent for continuing regulation of M2/2007, the market continues to be regulated by 8 NRAs³⁷. Of these 8 NRAs, the UK and Greece are currently in the process of deregulating the market, while for the remaining 6, the reviews of these markets are imminent. Given the comments provided by the

³⁷ Croatia, France, Germany, Greece, Italy, Netherlands, Spain and the UK

Commission on the previously notified measures, it is likely that ComReg, with its proposal to continue to regulate a narrow subset of the FACO market in some form until 2026, will be an outlier among its European regulatory counterparts. This is particularly pertinent bearing in mind that 18 NRAs have already ceased to regulate M2/2007.

386. It is therefore unclear to eir how a departure of such magnitude from established regulatory practice can lead to any other outcome than regulatory fragmentation. As such, ComReg's proposal does not in fact contribute to the development of the internal market.

Promote the interest of end users within the Community

387. ComReg states at paragraph 10.29 that the proposed price control for PSTN WLR “should help to facilitate greater regulatory certainty and price stability in the Regional Low-Level FACO Market, while ensuring that the appropriate price signals are provided to Eircom and other operators.”
388. In relation to the issue of regulatory certainty and price stability, eir considers that this objective can be better met through a price cap at current price levels, in line with eir's proposed voluntary commitments in respect of the FACO market. See Annex 2.
389. On the issue of ensuring the appropriate price signals, as discussed throughout this response eir is of the view that this needs to be considered in the context of timely transition from copper in both Commercial Areas and the NBP IA.

Promote efficiency

390. ComReg states at paragraph 10.35 that in the context of striking a balance between allocative, productive and dynamic efficiency that “[t]he BU-LRAIC approach already assumes a level of efficiency (as it assumes a new network) therefore no further adjustments are required.”

391. However, the imposition of obligations in respect of PSTN WLR pricing has to be considered in the context of a declining market. Demand for certain services, e.g., WLR, which utilise the fixed telecommunications network are in a permanent state of decline. Such decline can be identified in the sense that it is not temporary but rather has been sustained over a number of years and is expected to continue and that it is not isolated to specific geographic areas. In the face of such decline it is important to consider how best to balance short-term allocative and long-term dynamic efficiency goals.
392. While the traditional pricing objectives in existing or emerging markets will include cost recovery, efficient entry and ensuring that consumers are not subjected to price levels, which constitute exploitation by a monopolist, in a market facing declining demand, the issues relating to market entry and investment in that market are less of a concern. Assuming that economic regulation remains appropriate in the declining market, then the regulatory approach may need to adapt to take into account supplementary 'transitional' goals and objectives. As such due consideration should be paid to the following:
- (i) distributional effects: declining networks can create both costs and benefits and regulators may need to consider how best to distribute these among market participants;
 - (ii) investment in VHCN: encouraging investment in Next Generation Access networks (with their new prospects for infrastructure-based competition); and
 - (iii) efficient migration: ensuring a desirable transition by creating appropriate incentives on the part of operators and consumers to switch. This will include providing appropriate incentives for both incumbents and access-based entrants to switch customers from legacy products to new products to limit the period of inefficiently-duplicated by running two access products
393. In the case of the declining WLR market, real market impacts should therefore be assessed. Given the State funded NBI rollout and rollout and future investment plans of eir and other operators in the commercial area, eir considers that efficient migration is of particular importance. In this regard it is important to consider the effect that a continued obligation of cost orientation would have on the market. Where prices are being maintained at a particular level, which would not otherwise

hold in the absence of such regulation, artificial demand is being created in a market where the products supported are at end-of-life. The normal retail pricing strategy for such services would be to increase prices to encourage migration to modern products that deliver greater stability and value.

394. A forced price reduction for the WLR service would therefore send entirely inappropriate economic signals at this time. If all remaining end-users are captive this would suggest that in a market where the complete suite of regulatory obligations apply and will continue to apply over the term of the review, there would be an expectation that alternative operators would remain within or even enter the market to capture such demand. However, there is very little likelihood that any operators will enter the WLR market during the course of the review.
395. Furthermore, as set out in European Commission SMP working paper³⁸: *“When the majority of customers have migrated to a modern, higher-performance infrastructure, leaving a captive customer-base stranded on the legacy infrastructure, as is already apparent for low-speed analogue leased lines, the chain of substitution may appear to break, and the market analysis may suggest the finding of separate markets. However, when such an issue is identified, NRAs should take care that the regulatory approach does not perpetuate a cycle of captivity by continuing regulation of an ever smaller niche market, but rather serves to encourage migration on to modern networks and enables the ultimate switch-off of legacy networks.”*

Obligations based on the nature of the problem identified and proportionate and justified and only to be imposed following consultation

396. ComReg states at paragraph 10.41 that its preliminary view is that *“absent regulation, Eircom, as the proposed SMP service provider in the Regional Low-Level FACO Market, has the ability and incentive to engage in the types of exclusionary practices, leveraging behaviour, and exploitative practices, which are likely to negatively impact on competition and end users in related retail and/or wholesale markets, as well as having the potential to reinforce its SMP in the Regional Low-Level FACO Market over time.”*

³⁸ EC Staff Working Document on the EC SMP Guidelines, page 19.

397. However, eir considers that ComReg has not produced any concrete evidence that the examples of anti-competitive effects and concerns submitted by ComReg in its FACO Consultation are actually likely to occur in the market. In particular, eir considers that ComReg has over-relied on the theoretical economic abuse of foreclosure and has not adequately considered whether eir actually has sufficient market power at the wholesale level to follow such a pricing strategy.
398. ComReg cannot simply have regard to an extensive hypothetical list of abusive conduct. ComReg has failed to adequately consider the current and prospective competitive conditions in the market. Fixed voice usage has been declining and where it remains a relevant service for consumers, FNA based provision will be replaced by Managed VoIP. Further, if ComReg takes a forward looking view, as it is required to do, NBI roll-out must be given due consideration as it will have a material impact on the market. NBI's network will provide alternatives to eir's legacy FACO service and render eir's copper network in the intervention area obsolete. As a rational commercial entity, eir has every incentive to maintain existing demand over the remaining short years from its access network in the intervention area and as such it would be irrational for eir to deny access or act in an exclusionary manner.
399. Given the average number of premises in each EA in the Regional Market coupled with the impending roll-out of competing network infrastructure both commercially and through State Aid intervention, it is surprising that ComReg did not step back at the end of the process to ask whether eir could realistically engage in the type of hypothetical behaviour identified in a small and declining subset of the FACO market. eir submits that if ComReg had undertaken a further (and more accurate) analysis that it would be apparent that the Regional Market would not qualify as a separate relevant economic market.
400. ComReg further states at paragraph 10.43 that *“Sections 4.1 and 4.2 of this Consultation set out the reasons why the proposed price control measure (of cost orientation) and the proposed costing / pricing methodology (of TD HCA for copper network elements and BU-LRAIC+ for active assets) for PSTN WLR is proportionate and justified.”*

401. eir has addressed these issues in its response to Question 1, Question 9 and Question 10.
402. Finally, eir notes that while the Consultation and this RIA address the issue of specifying the cost orientation obligation for PSTN WLR, there is no detail provided on the 'general' cost orientation obligation for other services in the declining subset of the FACO market that ComReg intends to continue to regulate, including ISDN BRA, ISDN PRA, ISDN FRA and FVCO. By virtue of being a "general obligation" the requirement is vague and given the heavily depreciated nature of the assets in question, the implementation of the obligation will be undoubtedly problematic to ensure overall consistency with regulatory policy outcomes — in particular, since a number of these services are already end-of life such as ISDN BRA and declining such as FVCO. eir considers that ComReg should provide the additional detail necessary and consult on this issue transparently as it is required to do. For example, in ComReg D03/16 ComReg proposed that since other operators had invested in ISDN BRAs pricing at cost would undermine that investment. As ISDN BRAs are end of life in order to mimic the outcome of competitive markets the pricing signal should be that these increase over time. See also Annex 2.

Promote regulatory predictability by ensuring a consistent approach over appropriate review periods

403. ComReg considers at paragraph 10.55 *"that the proposed cost orientation price control does provide for consistency with the existing [cost orientation] price control remedy in place since 2016, although it is proposed that the remedy will only apply to PSTN WLR in the Regional Low-Level FACO Market as per the 2020 FACO Consultation."*
404. However, consistency for the sake of consistency does not provide for regulatory predictability in particular as ComReg has failed to consider that since the approach adopted in 2016, eir's existing copper asset lives will now be truncated by the advent of the State-Funded FTTH network in rural areas and the commercial overbuild by eir and Siro. In addition, eir will be required to continually re-invest in additional further copper capex while regulatory access obligations remain in place.

Take due account of the variety of geographic conditions

405. ComReg considers at paragraph 10.56 that it has met this objective in that it has reached “the preliminary conclusion that Eircom continues to have SMP only in the Regional Low-Level FACO Market (and not across the national market under the existing decision)” and that “[g]iven the competition problems identified in the 2020 FACO Consultation that relate to the Regional Low-Level FACO Market, ComReg considered that a price control obligation continued to be justified and proportionate for PSTN WLR.”
406. First, as discussed in eir’s response Question 1, the geographic differences in competition in the FACO market are clearly not appreciably different to the extent that they justify the existence of sub-national markets. eir considers that the geographic scope of the FACO market is in fact national and by any measure, including premises; access lines; and FACO lines, the sub-geographic “Regional Market” is so small that ComReg’s analysis suffers from fundamental flaws.
407. Second, there are a broad range of market developments that constrain eir from exploiting any alleged market power over the coming regulatory period. In particular, mobile operators appear to have already overcome any barriers to entry, the state-backed NBI rollout will materially alleviate any market failures associated with the deployment of NG network to rural premises, ComReg appears to have underestimated the role of alternative operators providing Managed VoB and the market exhibits national-level competition.

Step 3: Likely impact on stakeholders

408. ComReg’s assessment of the likely impact on stakeholders in the context of the RIA consists of one paragraph³⁹ with ComReg stating that it has considered the impacts of the various regulatory options “[t]hroughout this Consultation” and simply referring the reader to Section 4, Section 6.2 and Section 9.2.

³⁹ Paragraph 10.61

409. This appears to be a departure from ComReg's standard or indeed the accepted procedure of conducting an overall assessment of the various regulatory options, within the context of the RIA itself.
410. eir considers that a holistic assessment of the impact of the proposal cannot be undertaken in such a manner and as such the RIA fails at Step 3.

Step 5: Assess the impacts and choose the best option

411. ComReg states at paragraph 10.63 that it *"has taken account of Section 12 of the Act, Regulation 6(1) of the Access Regulations, Regulation 8(6) of the Access Regulations, Regulation 13 of the Access Regulations and Regulation 16 of the Framework Regulations, in arriving at its preliminary views on the appropriate price control measure and costing / pricing methodologies for Eircom's PSTN WLR access service in the Regional Low-Level FACO Market."*
412. eir has addressed the regulatory objectives covered by each of these provisions in relation to Step 1 of the RIA. See paragraphs 375-407.
413. ComReg further states at paragraph 10.64 that it *"has considered the potential impact of its proposals in the context of the key stakeholders, as summarised at Section 10.5."* and that the proposed measures set out in this Consultation *"should meet ComReg's regulatory objectives while addressing the competition concerns associated with the Regional Low-Level FACO Market, for the reasons already discussed in Section 4 and in Section 6.2."*
414. First, Section 10.5 contains one paragraph in relation to ComReg's consideration of the impacts of the various regulatory options, which simply directs the reader to refer to the assessment of same "throughout" the Consultation. It is unclear how ComReg has managed to establish an overarching view of the impacts of its proposals on the entire market, particularly in the context of timely migration from copper to fibre and PSTN and copper switch off, when it has not even conducted this important part of the RIA.
415. Second, eir considers that ComReg's determination that there exists an "uncompetitive" subset of the FACO market is fundamentally flawed and the

competition concerns indicated by ComReg are purely hypothetical in nature. To the extent that any transitional concerns would arise, in the context of deregulation of the national FACO market, these are addressed by the voluntary commitments proposed by eir.

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Q. 23 Do you believe that the draft text of the proposed Decision Instrument in relation to the WLA and WCA Markets (ComReg Decision D10/18) is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

416. eir has the following comments in respect of the text of the draft Decision Instrument (DI) in Annex 1. These comments are in addition to the drafting changes that will be required in light of our substantive comments in this response. In addition, it would be useful and clearer for all parties to have a single revised/amalgamated DI going forward as opposed to deletion and insertion of various definitions etc.
417. eir notes that the draft DI refers to ComReg acting pursuant to its powers under current Regulations. It seems unlikely that the DI could be issued by ComReg prior to the transposition of the European Electronic Communications Code (the Code). Whilst the transposition which was due to occur by December 2020 has been delayed, it is anticipated that DECC will remedy the situation in the next few months. Simply referring to the Code in paragraph (xiii) is not sufficient. Section 1 of the draft DI will therefore need to be replaced and should be subject to further consultation.
418. Reviewing the references to existing Regulations in section 1, it is clear that the references are deficient as ComReg has omitted reference to the fact that it is also acting pursuant to its powers to undertake a market analysis and define economic markets. This should be corrected with appropriate references to the relevant sections of the transposed Code.
419. In Section 3.3. ComReg proposes that any price amendments arising from the DI should take effect “*from the first day of the third month following the Effective Date of this Decision Instrument*”. eir agrees that this is appropriate as it provides sufficient time for the changes to be implemented on billing systems in an orderly manner.

With regard to the proposed definitions in Section 4:

420. The definition of “High Speed Broadband Map” is incorrect as DECC no longer differentiates between Blue and Light Blue areas. At a minimum this will need to be corrected. However this also highlights a deficiency in the proposed regulatory approach, which hinges on market definitions that are outside of ComReg’s control. The Commercial Area could change as a result of future actions by DECC and we fundamentally question whether it is appropriate that the geographic application of SMP remedies imposed by ComReg should be determined and controlled by an entity other than the national regulator — unless ComReg and DECC are acting in a coordinated manner. We request that ComReg explains how this dynamic will operate in practice where changes in DECC practice directly impact on the operation of the proposed DI.
421. Given the recent change in practice by DECC and without prejudice to our comments in the preceding paragraph, the definitions of Urban Commercial Area and Rural Area should be revisited. This is particularly relevant as a number of the derived prices are modelled using that definition. It would seem more appropriate to Eir to define terms and fix the specific names of the exchanges to that definition — this would provide ComReg with more oversight and control of changing the footprint captured by those definitions with reference to changing the list exchanges (as appropriate) over time.
422. The definition of ‘Intervention Area’ refers to the ‘total geographic area ... identified by Amber areas’. Given that individual premises can be colour coded as Amber on the DECC map we request ComReg to explain how the term total geographic area is appropriate in this context.

With regard to the Section 5:

423. ComReg proposes to impose a requirement whereby “ComReg may, from time to time, update or require Eircom to update the Access Network Model and the costs in [the relevant Table] setting the maximum price [for ULMP Access, and SLU Access] may be amended as appropriate.” (Section 5.1 amending D10/18 WLA, Section 12.3.3, and Section 5.2 amending D10/18 WLA, Section 12.4.3). Similar obligations

are proposed in respect of Line Share, Dark Fibre, and Current Standalone Broadband whereby “ComReg may, from time to time, update or require Eircom to update the Access Network Model and direct amendments to the prices set out in [the relevant Table] as appropriate.” (Section 5.3 amending D10/18 WLA, Section 12.5.3, Section 5.4 amending D10/18 WLA Section 12.7.4, and Section 7.1 amending D10/18 WCA Section 12.5.4.

424. ComReg’s proposal to amend price controls during the operation of the price control runs contrary to the principle of promoting regulatory predictability. From a lawful process perspective, even if such an in-flight adjustment mechanism could be considered appropriate, it can only be progressed following a proper consultation process and notification under Article 7. Such a proposal cannot subvert ComReg’s requirements under the Framework Directive. ComReg cannot just issue a request on eir to update prices in respect to a price control without first following the consultation procedures referred to in Articles 6 and 7 of the Framework Directive. As ComReg is aware, other NRAs that have tried to avoid such requirements have been reminded by the Commission of their obligations to consult interested parties and the Commission before adopting any measure and this is also true in respect to all updates. For example, the European Commission clarified in Portugal, C(2018) 5876, the “[n]eed to notify all WACC updates...the Commission considers that any new calculation of the WACC should be subject to the consultation procedures referred to in Articles 6 and 7 of the Framework Directive, regardless of whether the new WACC value results from a methodological change or simply an update of the data used in the calculation. The Commission therefore calls on ANACOM to consult interested parties and the Commission before adopting any measure related to the WACC in the future either as a stand-alone decision or as part of a market analysis or decision on remedies”. ComReg also received similar Article 7 notification comments from the EC in notifying its recent WACC Decision.
425. ComReg proposes to include text in the DI in respect of each of the Access products in scope that states “For the avoidance of doubt no charges other than those provided for under [relevant section] may be raised by Eircom on an Undertaking in respect of access to [ULMP, SLU, Line Share, Dark Fibre, and Current Generation Standalone Broadband], save as otherwise explicitly allowed for by ComReg”. The purpose and effect of this proposed text is not discussed in the Consultation and it

is not clear how this would be applied in practice. We assume this relates solely to recurring rental charges for access to the relevant services and will not impact on other legitimate charges that are already established in respect of connections, migrations and other related ancillary services. As far as we can determine the costs associated with these established charges are not considered in ComReg's cost modelling of recurring rental charges and consequently eir is lawfully entitled to recover the costs incurred. As such the proposed text should be amended to clarify that it only applies to the recurring rental charge. If ComReg has something different in mind regarding the application of the proposed text then this must be presented in sufficient detail and clarity to allow for the proposal to be consulted on properly.

With regard to the Section 13:

426. Section 13.1 states *"This Decision Instrument shall be published on ComReg's website (www.comreg.ie) and on the same day, notified to Eircom."* It is not clear what the intention or effect of this proposed Section is. For example, if ComReg publishes the DI but fails to notify eir, or vice versa, does this render the DI ineffective? eir requests ComReg to explain the rationale for Section 13.1.

Q. 24 Do you consider that the draft text of the proposed Decision Instrument and Direction (in relation to ComReg Decision D11/18) is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

427. eir has the following comments in respect of the text of the draft Decision Instrument (DI) in Annex 2. These comments are in addition to the drafting changes that will be required in light of our substantive comments in this response. In addition, it would be useful and clearer for all parties to have a single revised/amalgamated Decision Instrument going forward as opposed to deletion and insertion of various definitions etc.
428. eir notes that the draft DI refers to ComReg acting pursuant to its powers under current Regulations and no reference is made to the European Electronic Communications Code (the Code). Whilst the transposition which was due to occur by December 2020 has been delayed, it is anticipated that DECC will remedy the situation in the next few months. Section 1 of the draft DI will therefore need to be replaced and should be subject to further consultation.
429. Unlike the other draft DIs, the Statutory Powers section in this DI in respect of amending the D11/18 price control does not make reference to ComReg properly notifying the draft measure to the EC, BEREC and NRAs as required pursuant to Regulations 13 and 14. eir assumes this is an inadvertent omission on the part of ComReg's drafting team given ComReg's commitment at paragraph 11.4 that *"Having analysed and considered the comments received, ComReg will review the preliminary views set out in the consultation, amend if necessary in light of representations received and will then notify the draft measure to the European Commission, the NRAs and BEREC pursuant to Regulation 13 of the Framework Regulations. ComReg will take utmost account of any comments received from the European Commission as well as from other aforementioned parties. ComReg will then adopt and publish the final decision in its subsequent Response to Consultation and final Decision."* [emphasis added]

430. eir can see no reason why the requirement to notify the Commission does not apply in respect of this proposed DI which is clearly amending existing remedies established following proper notification and due consideration by the Commission in 2018. The requirements of Article 7 under the current regime (Regulation 13 transposed) will also feature in the new regime under Article 32 of the Code when implemented nationally.
431. Any amendment to an existing remedy must be notified to the Commission. This is clear from the Commission's comments on ComReg's proposed WACC Decision. In the proposed measure ComReg indicated its intention to update and amend the WACC during the period covered by the Decision. The Commission's comments in response state *"The Commission considers that ComReg will have to notify it of future updates of the WACC in accordance with Article 7 of the Framework Directive."* The same principle applies to this proposed Decision and any future amendments to an existing remedy including price controls.
432. In Section 3.3. ComReg proposes that any price amendments arising from the DI should take effect *"from the first day of the third month following the Effective Date of this Decision Instrument"*. eir agrees that this is appropriate as it provides sufficient time for the changes to be implemented on billing systems in an orderly manner.

With regard to the proposed definitions in Section 4:

433. The list of exchanges in the "Regional WCA Market" per ComReg D10/18 will need to be updated following ComReg's completion of its Mid-Term Assessment of the WCA market (see ComReg 20/114). This will also have implications for Section 5.1.3. This is discussed in paragraph 437.
434. The definition of "High Speed Broadband Map" is incorrect as DECC no longer differentiates between Blue and Light Blue areas. At a minimum this will need to be corrected. However this also highlights a deficiency in the proposed regulatory approach, which hinges on market definitions that are outside of ComReg's control. The Commercial Area could change as a result of future actions by DECC and we fundamentally question whether it is appropriate that the geographic application

of SMP remedies imposed by ComReg should be determined and controlled by an entity other than the national regulator — unless ComReg and DECC are acting in a coordinated manner. We request that ComReg explains how this dynamic will operate in practice where changes in DECC practice directly impact on the operation of the proposed DI.

435. Given the recent change in practice by DECC and without prejudice to our comments in the preceding bullet point, the definitions of Urban Commercial Area and Rural Area should be revisited. It would seem more appropriate to eir to define terms and fix the specific names of the exchanges to that definition — this would provide ComReg with more oversight and control of changing the footprint captured by those definitions with reference to changing the list exchanges (as appropriate) over time.

436. The definition of ‘Intervention Area’ refers to the ‘total geographic area ... identified by Amber areas’. Given that individual premises can be colour coded as Amber on the DECC map we request ComReg to explain how the term total geographic area is appropriate in this context.

With regard to Section 5:

437. Section 5.1.3 states that *“In particular and for the avoidance of doubt, the cost inputs in respect of LLU and SLU in the NGA Core Model shall be substituted by the values set out in Table 1 and Table 2 at Section 12.3.3 and Section 12.4.3 of the WLA Decision Instrument (as amended by the 2020 WLA Price Control Decision Instrument)”*. However, this definition is incorrect as the basis for deriving prices for FTTC Bitstream. While the definition used is correct for FTTC VUA — although the tables references need to be correctly updated for reasons set out in eir’s response and the BRG Report — for the purposes of calculating the appropriate prices for FTTC Bitstream the geographic footprint must be amended to only take into account the WCA Regional exchanges within the Urban Commercial Footprint. As currently modelled the deregulated FTTC Bitstream local loop cost is cross-subsidising and lowering the regulated FTTC Bitstream local loop cost. This needs to be corrected for in the model and consequently a single definition is not appropriate as to the correct values that are required to be substituted.

With regard to Section 6:

438. eir notes that in respect to cost-oriented prices the wording in the respective Sections is different compared to that of the specification of the price control sections in Annex 1 of the Consultation. In particular, the Sections use the specific wording that “ComReg hereby directs”. eir requests ComReg to clarify whether it is ComReg’s intention that these reflect fixed prices points as opposed to maximum prices over the price control period.

439. See also eir’s response to Question 21.

With regard to Section 10:

440. Section 10.1 states “This Direction shall be notified to Eircom and published on ComReg’s website (www.comreg.ie) and on the same day.” It is not clear what the intention or effect of this proposed Section is. For example, if ComReg publishes the DI but fails to notify eir, or vice versa, does this render the DI ineffective? eir requests ComReg to explain the rationale for Section 13.1.

Q. 25 Do you consider that the draft text of the proposed Decision Instrument for the Regional Low-Level FACO Market, in the context of this Consultation, is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

441. eir has the following comments in respect of the text of the draft Decision Instrument (DI) in Annex 3. These comments are in addition to the drafting changes that will be required in light of our substantive comments in this response.
442. eir notes that the draft DI refers to ComReg acting pursuant to its powers under current Regulations. It seems unlikely that the DI could be issued by ComReg prior to the transposition of the European Electronic Communications Code (the Code). Whilst the transposition which was due to occur by December 2020 has been delayed, it is anticipated that DECC will remedy the situation in the next few months. Section 1 of the draft DI will therefore need to be replaced and should be subject to further consultation.
443. In Section 3.3. ComReg proposes that any price amendments arising from the DI should take effect “from the first day of the third month following the Effective Date of this Decision Instrument”. eir agrees that this is appropriate as it provides sufficient time for the changes to be implemented on billing systems in an orderly manner.
444. ComReg proposes to impose a requirement whereby “ComReg may, from time to time, update or require Eircom to update the Access Network Model and direct amendments to [the relevant Table] as appropriate.” This is proposed in respect of PSTN WLR and POTS-Based FTTC (Section 5.4 and Section 6.4). ComReg’s proposal to amend price controls during the operation of the price control runs contrary to the principle of promoting regulatory predictability as discussed elsewhere in this response and eir does not believe this proposal is appropriate.
445. ComReg’s proposal to amend price controls during the operation of the price control runs contrary to the principle of promoting regulatory predictability. From a lawful process perspective, even if such an in-flight adjustment mechanism could be

considered appropriate, it can only be progressed following a proper consultation process and notification under Article 7. ComReg's proposal cannot subvert its requirements under the Framework Directive. ComReg cannot just issue a request to eir to update prices in respect to a price control without first following the consultation procedures referred to in Articles 6 and 7 of the Framework Directive. As ComReg is aware, other NRAs that have tried to avoid such requirements have been reminded by the Commission of their obligations to consult interested parties and the Commission before adopting any measure and this is also true in respect to all updates. For example, the European Commission clarified in Portugal, C(2018) 5876, the "[n]eed to notify all WACC updates...the Commission considers that any new calculation of the WACC should be subject to the consultation procedures referred to in Articles 6 and 7 of the Framework Directive, regardless of whether the new WACC value results from a methodological change or simply an update of the data used in the calculation. The Commission therefore calls on ANACOM to consult interested parties and the Commission before adopting any measure related to the WACC in the future either as a stand-alone decision or as part of a market analysis or decision on remedies." ComReg also received similar Article 7 notification comments from the EC in notifying its recent WACC Decision.

446. ComReg proposes to include text in the DI which is referred to in section 7 as 'Entire Price Control' that states "For the avoidance of doubt no charges other than those provided for under either of Section 5.1 or Section 6.1 as applicable may be raised by Eircom on an Undertaking in respect of access to PSTN WLR, save as otherwise explicitly allowed for by ComReg". The purpose and effect of this proposed text is not discussed in the Consultation and it is not clear how this would be applied in practice. We assume this relates solely to recurring rental charges for access to the relevant services and will not impact on other legitimate charges that are already established in respect of migrations and other related ancillary services. As far as we can determine the costs associated with these established charges are not considered in ComReg's cost modelling of recurring rental charges and consequently eir is lawfully entitled to recover the costs incurred. As such the proposed text should be amended to clarify that it only applies to the recurring rental charge. If ComReg has something different in mind regarding the application of the proposed text then this must be presented in sufficient detail and clarity to allow for the proposal to be consulted on properly.

447. Finally, eir notes that the tables contain a price path for six years rather than the five consulted on and allowed for by regulation. See also eir's response to Question 21.
448. Section 13.1 states "*This Decision Instrument shall be published on ComReg's website (www.comreg.ie) and on the same day, notified to Eircom.*" It is not clear what the intention or effect of this proposed Section is. For example, if ComReg publishes the DI but fails to notify eir, or vice versa, does this render the DI ineffective? eir requests ComReg to explain the rationale for Section 13.1.

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Annex 1 - Accelerated depreciation for future copper cable investments – a proposal

As discussed in the main body of the response, ComReg's proposal to continue with the use of 2009 directed asset lives to calculate the annuity for future copper cable investments sends the price signal to eir that there is no prospect for recovering these investments from future revenues for PSTN or xDSL services. This is the case because copper services will be replaced before 2030 and the asset lives for overhead and underground copper cable are 15 years and 20 years respectively.

The recent patterns in overhead and underground copper cable investments show a considerable contrast. This is illustrated in the table below.

✂

Much of the decade up to 2014 saw new housing developments driving increased suburban and satellite town demand served by new underground cable. This dropped between 2015-2019 as a result of serving new housing developments (of which there were very few at the time) solely with fibre optic cable and the requirement for new underground copper dropped to one third of the previous level.

By contrast the decade to 2014 saw little new demand for rural services and the minimal investment in replacing overhead copper cable targeting only service fault hot spots. Since 2015 overhead cable investments have doubled and now run at a level that sustains rural service performance at the levels agreed between eir and industry stakeholders. For both types of cable these levels of investment will continue to be required to maintain agreed service levels up to the point of copper switch-off.

A simple proposal

The price control period is likely to run up to the point where copper switch-off starts in earnest – from FY 22 to FY26. This is in part because ComReg generally requires eir to give five years notice of the withdrawal of any access service - or the change in delivery of that service that requires new customer premises equipment. Throughout this period continuing investment will be required in underground and overhead copper cable to maintain existing service levels and to allow new connections to copper services at premises not yet reached by fibre. From the table above these investments are likely to average close to ✂ for overhead cable and ✂ for underground cable in each year of the price control.

A cost modelling treatment that will allow eir to recover the investment is to simply expense this level of investment each year (as opex) rather than update the asset register with the new cable investments. The cable annuity element of the cost stack for PSTN WLR will simply be the remaining depreciation and return on mean capital employed for investments up to FY21. There is a precedent for this approach in the ANM. Whereas provisioning costs in the Revised CAM were recovered from an annuity using an asset life of eight years the ANM used as the basis for the proposed PSTN WLR price control now treats provisioning costs as an expense (albeit modelled using a service demand projection declining at a rate that cannot sustain eir service obligations).

In summary, eir proposes that for future capital expenditure for new investments in copper cable to simply be recovered through an opex charge in each year of the price control.

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Annex 2 – eir’s draft voluntary commitment

Please see the main body of eir’s response for the reasons eir has proposed certain voluntary commitments in respect to pricing remedies. These are made without prejudice to eir’s views on ComReg consultation on SMP designation and potential remedies.

WLA market

eir proposes a voluntary commitment to:

- charge the rates for both SLU and LLU for the duration of price control period. SLU and LLU are charged at €6.12 and €11.52 per month respectively.
- charge FTTC VUA at €20.36 per month for the duration of price control period.
- ✂

Regional WCA market

eir proposes a voluntary commitment that:

- it will continue to charge a maximum rate for CGA SABB, CGA BMB and Bitstream BIP at $\Delta\text{CPI} + 5\%$ for the duration of price control period
- currently CGA SABB is charged at €22.17 and €23.17 per month for 8 MB and 24 MB respectively – eir proposes that there will be no adjustment to the wholesale price using $\Delta\text{CPI} + 5\%$ for the first two years of the price control period. Bitstream usage will be charged at 0.47 per MB for the duration of the price control period and will not be subject to change.
- CGA BMB will initially be charged at €8.88 per port – eir proposes that there will be no adjustment to the wholesale price using $\Delta\text{CPI} + 5\%$ for the first two years of the price control period. Bitstream usage will be charged at 0.47 per MB for the duration of the price control period and will not be subject to change.
- Bitstream BIP will initially be charged at €9.37 per port– eir proposes that there will be no adjustment to the wholesale price using $\Delta\text{CPI} + 5\%$ for the first two years of the price control period. Bitstream usage will be charged at 0.47 per MB for the duration of the price control period and will not be subject to change.

- charge FTTC Bitstream at €25.27 per month for the duration of the price control. For FTTC Bitstream the price charged for usage will be remain at €0.37 per MB.
- ✂

FACO market

eir proposes a voluntary commitment that:

- For PSTN-WLR the extant price of €16.59 will remain in place until 30 June 2022. From 1 July 2023 onwards the monthly price will be €16.82 and will remain unchanged for the remainder of the price control period.
- the regulated supplemental charge for POTS will be based on the FTTC price path set out in ComReg D11/18.⁴⁰
- ISDN BRA⁴¹, ISDN FRA and ISDN PRA to be charged at respective current markets rates for the remainder of the price control period.
- all Current Generation fixed voice call origination to be charged at current market rates for the remainder of the price control period.

⁴⁰ Due to the construct of eir's billing system, as is implemented today, to meet eir's regulatory obligations pursuant to ComReg D11/18, the POTS based port price for the FTTC broadband variant is added to the standalone PSTN WLR price such that cumulatively it achieves the intended regulated price per ComReg D11/18. This billing construct will be maintained going forward.

⁴¹ Note that due to the potential changes required going forward in order to ensure appropriate recovery of the NTUs additional charges may be required.

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Response to ComReg Consultation 20/101

Executive Summary

Sky welcomes the opportunity to respond to ComReg consultation **Document 20/101** – the Access Network Review Consultation (“ANR Consultation”).

Many of the pricing/costing proposals¹ in the ANR Consultation are contrary to European Recommendations and opinions of the European Court of Justice. Many other proposals are arbitrary, distortionary and contrary to ComReg’s objectives under the 2002 Act to promote competition, protect the interests of consumers and ensure efficient investment. Certain proposals are contrary to European Competition law and, if implemented, they would result in Eircom **unlawfully cross-subsidising services** in certain economic markets where it holds SMP, with revenues from services in other economic markets where it also holds SMP.

Despite the material shortcomings and inconsistencies that run through much of the ANR Consultation, a common theme that unites virtually all of the proposals is that they all place varying degrees of upward pressure on the FTTC price. These proposals, if implemented, **will materially overestimate a cost-oriented FTTC price for years to come** resulting in significant market distortions. They will adversely impact on competition and on non-SMP providers in particular. **Table 1.1** of the Analysys Mason Report (“AM Report”) appended to this response fairly and succinctly summarises Sky’s concerns in this regard.

ComReg’s ANR will be several years late by the time it finally issues a decision, and this has already led to significant market distortions. **The main beneficiary of ComReg’s failure to meet its statutory deadlines has been Eircom** as clearly evidenced by the scale of its profitability² and Return on Capital Employed (ROCE)³ in its statutory and regulatory accounts, respectively.

The current ANR therefore must be used to restore regulatory certainty to the market and rebalance Eircom’s regulated pricing to appropriate cost-oriented levels. Current regulated prices, particularly for FTTC, are earning monopoly type rents that belie the cost-orientation obligation imposed on Eircom – an obligation that is supposed to address the market failure and risk of excessive pricing identified in **D10/18**. Immediate steps can and should be taken by the regulator to bring such pricing more in line with costs even before the completion of the ANR in accordance with **European Commission Recommendations which ComReg has ignored to date** and as ComReg is empowered to do under the provisions of the Access Directive and Access Regulations 2011.

¹ “proposals” should also be understood to include “omissions” in the context of this response.

² Fixed line EBITDA of 54% in its most recent statutory accounts. Neither Sky nor its external advisors have been able to find a fixed incumbent globally enjoying this level of return.

³ 12% in its 2019/20 Regulatory accounts i.e. more than double the current permissible regulated rate of return of 5.61%.





Sky's response to the ANR Consultation should be reviewed together with the AM Report and Sky's response to the consultation on CEI/pole and duct pricing review, document **D20/81** ("*P+D Consultation*"). In this response, Sky refers to specific sections of the AM Report. However, for the avoidance of doubt, where any aspects of the AM Report are not referred to in this response, it should not be assumed that these issues are any less important. AM is a globally renowned expert. The Irish Government and ComReg have both relied on AM in the past to carry out important cost modelling work and all issues raised in the AM Report ought to be carefully considered and addressed by ComReg.

In this submission Sky will organise its response under the following key thematic summaries:

- I. ComReg has again ignored European Commission recommendations which it is obliged to take utmost account of. Having failed to update the Revised CAM pursuant to a recommendation in **July 2018** from the EC to do so "*without undue delay*", ComReg has again failed to take account of a **July 2020** recommendation that advised ComReg it "*must adjust*" WACC in **existing** price models. ComReg has provided no explanation for ignoring this unequivocal advice. The AM Report also highlights that many of ComReg's proposals are diametrically opposed to other key EC Recommendations.
- II. ComReg's explanation of what equates to a "*commercial*" or "*non-commercial*" footprint does not constitute a defining of relevant markets in accordance with the established legal principles that ComReg is obliged to follow. It is arbitrary, irrational and based on irrelevant and/or out of date considerations. These descriptions are also used as a pretext to justify ignoring European Recommendations and to advance a discriminatory pricing regime, to the detriment of OAOs and ultimately to the detriment of Irish consumers. **The purpose of the ANR is to set prices at a "commercial" level** for services subject to a cost orientation obligation. Among the errors inherent in the approach taken by ComReg are:
 - Relying on the 2016 WLR-PSTN price points to inform its view on NBP-IA "commerciality" (which is a serious error).
 - ComReg's irrational "*non-commercial*" construct which ignores that Eircom has been running a commercial enterprise in the NBP-IA for years and OAOs (in particular NBI) are capable and exhibited a willingness to pay commercial prices for access.



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- ComReg’s approach to applying different costing methodologies to the same service across arbitrary geographic “definitions” is contrary to the EC 2013 Recommendation⁴, contrary to the Commission Guidelines on market analysis and the assessment of significant market power⁵, and contrary to the 1997 Notice on Market Definition⁶.
- III. ComReg’s proposals appear to be in breach of European competition law, as they will result in Eircom services in markets where it holds Significant Market Power (SMP) being sold below Average Variable Costs (AVC). **These below cost services will effectively be cross subsidised by other services/markets where Eircom also has SMP.** In addition:
- Ignoring the fact that shorter lines incur lower direct costs is contrary to ComReg’s objectives under the 2002 Act and means that **longer lines are not recovering their true incremental direct costs** in the footprints adopted by ComReg.
 - **Variable common costs** are driven by both Eircom’s very presence in the NBP-IA and the fact that such lines have higher direct costs than shorter lines, yet lines in the NBP-IA make no contribution to these incremental costs they drive. FTTC customers should not bear any of these costs, otherwise it amounts to unlawful cross-subsidisation.
 - The scale of common cost mark-up by ComReg is **entirely out of kilter with benchmarks observed in other BEREK member states** and represents a significant and unjust premium on FTTC prices which is used to subsidise activity in the NBP-IA.
- IV. ComReg’s proposals, if implemented, **will act as a Universal Service “backdoor”** which is not permissible under European law. Legally binding rulings from the European Court of Justice highlight the inappropriateness of ComReg’s proposals

⁴ Commission Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU)

⁵ European Commission Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services (2018/C 159/01)

⁶ Commission Notice on the definition of relevant market for the purposes of Community competition law (OJ C 372, 9.12.1997, p. 5)





which seek to reintroduce an “**access deficit**” - a practice which NRAs were obliged to remove through tariff rebalancing many years ago when the telecoms market was liberalised. If ComReg wants to maintain “*non-commercial*” prices for certain services, then it can only avail itself of the Universal Service Regulations to do so. It cannot recover purported “*deficits*” through mark-ups on interconnect services like FTTC VUA. In this regard, we note that ComReg has previously determined that the provision of the universal service is not an unfair burden on Eircom therefore does not warrant any subsidy (whether from ComReg or industry).

V. ComReg has failed to update the NGA cost model with more recent data that would in all likelihood lead to a substantial reduction in FTTC **prices due to significantly lower operating costs**. ComReg has made no assessment of whether such an update would be required contrary to what it historically has deemed to be best practice in this regard:

- TERA’s attempt to negate the relevance of Eircom’s regulatory accounts to underpinning operating costs in the NGA Cost Model is entirely misleading and contrary to its own averred historical position.
- ComReg’s previous actions and averments point to the need to carry out “*sense-checks*” of cost modelled data against Eircom’s up to date regulatory accounts but fails to acknowledge the need for this under the current proposals.

VI. The AM report highlights **multiple errors and unjustifiable discretionary/arbitrary proposals** by ComReg that would, if adopted, all result in higher than appropriate FTTC prices:

- Eircom’s claims on Urban Commercial FTTH roll-out over the next 4 years has been taken at face value but the accelerated roll-out costs **fall primarily on FTTC services which are not causing these costs to be incurred**. This amounts to a further cross-subsidy mechanism being set up by ComReg’s proposals.
- ComReg’s approach to costing EVDSL is illogical and **vastly overstates the costs of an efficient operator**.





- The ANM **materially over-estimates** the exchange presence of FTTC resulting in FTTC paying disproportionately more for areas which have lower economies of scale.
 - ComReg's proposal reflects **a material error by arbitrarily** over indexing SLU's share of per line operating costs at 85% while ignoring available and calculable estimates of the same.
- VII. Further to ComReg's "Call for Inputs" the current FTTH connection/migration regime has already seen enormous and undue benefits accrue to the SMP provider and gives it far too much flexibility. **The regime is also distortionary and does not promote the interest of end-users or adhere to cost causation principles.**
- VIII. The overly complex cost modelling approach adds to a general concern around **lack of transparency** and appears to have been driven by the prejudicial positions taken in relation to so-called "*commercial v non-commercial*" Areas by ComReg

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I. **ComReg has again ignored EC Recommendations without justification resulting in a material and quantifiable benefit to Eircom.**

1. On 9 July 2020, the EC issued the following recommendation to ComReg:

*“**While** the Commission welcomes the revision of the WACC value notified under IE/2014/1649, ComReg **must adjust all** regulated prices that are significantly affected by the WACC value, in line with the **considerable decrease** of the WACC (from 8.18% (current) to 5.61% (notified) for the fixed-line market). The Commission urges ComReg **to update relevant pricing decisions** as soon as possible, to ensure that prices in the Irish wholesale markets reflect current market conditions, as the WACC **is a significant and central determinant of prices.**”*
[emphasis added]

2. The EC position was unequivocal. Given that Ireland (ComReg) had failed to update the WACC for an **unacceptably long period of 6 years** the urgency conveyed in the EC recommendation was hardly surprising. More than 6 months since that recommendation not a single regulated price, many for which WACC “*is a significant and central determinant of price*”, has been amended with the updated figure of 5.61% to reflect what should be new and materially lower prices for OAOs and ultimately Irish consumers.
3. This material benefit being enjoyed by Eircom is underscored by ComReg’s admission in the ANR Consultation⁷ that **if it had updated the WACC**, as recommended by the EC, **then current FTTC prices would in fact be lower than the reductions now proposed in the ANR Consultation**. This is an extraordinary admission by ComReg who, through failing to account for the EC recommendation, are effectively condoning over-recovery of costs to deliver super-normal profits to Eircom on a service that ComReg has determined should be subject to a cost orientation obligation precisely so that Eircom could not charge excessive prices.
4. Sky reserves its rights in relation to this material over-recovery and would strongly urge ComReg to immediately implement the EC recommendation as outlined above in particular given its poor track record in completing market reviews within planned timeframes. It is not acceptable, reasonable or fair that another 6 months⁸ should pass whereby excessive prices are being charged on services subject to cost orientation obligations and where the SMP operator is permitted to bank this upside.

⁷ This is the only logical corollary to paragraph 6.74 of consultation. It is also confirmed by the analysis carried out in the “TERA note”.

⁸ We note ComReg expect to issue a final Decision in Q2 2021





Providing for regulatory pricing certainty does not mean the SMP operator is entitled to earn excessive returns even when material changes warrant a price reduction. OAOs are equally entitled to regulatory pricing certainty whereby cost-orientation means cost-orientation and there are mechanisms in the regulatory framework specifically to allow ComReg to intervene in the absence of a market review, such as Regulation 13(4) of the Access Regulations 2011, which ComReg has without explanation failed to avail itself of.

5. At the very least ComReg should account for the significant over-recovery on FTTC charges as a consequence of the current excessive WACC in operation (8.18%) when setting final prices as part of this review. It has not made any provision for this under the proposals in the ANR Consultation and **offers no justification for why it has not taken utmost account of the EC Recommendation** or why Eircom should be rewarded with an excessive rate of return on capital across all services since the WACC Decision was issued.
6. ComReg's current proposals also fail to observe other generic but crucial EC Recommendations, namely, the 2010 NGA Recommendation ("2010 Recommendation") and 2013 Non-Discrimination Recommendation ("2013 Recommendation"). Sky will highlight numerous areas in this response where this occurs and would again refer ComReg to **Table 1.1** of the AM Report which highlights the same concerns in numerous instances. ComReg claims to have taken account of these Recommendations at various points in the P+D and ANR Consultations but in certain instances these appear to be statements purely for the record that are not supported by a thorough analysis of the actual proposals.
 - II. **"Commercial" footprint "definitions" are arbitrary, irrational and based on irrelevant considerations – the purpose of the Access Network Review is to set prices at a commercial level for services within properly defined relevant markets**
7. This section should be read in conjunction with paragraphs **4-53** of Sky's response to the P+D Consultation. A summary of the points contained therein include:
 - ComReg's consultants *Dotecon* failed to meet its Terms of References ("ToR") in assessing recommendations on appropriate costing methodologies for determining CEI pricing. In this regard, *Dotecon* **merely adopted** an approach taken by ComReg in **D11/18** and assumed that that approach remained applicable. ComReg in turn has taken *Dotecon's* adoption of that historical





position, without interrogation, to constitute some form of an external endorsement of that approach but **Dotecon** make no such endorsement.

- Apart from *Dotecon's* failure to meet its ToR, *Dotecon* failed to identify a material difference in the definition of a “commercial” area as outlined in **D11/18** versus how it was defined in the P+D consultation which equated “commercial areas” to all areas other than the Intervention Area (IA) identified by the *Department of Environment, Climate and Communications* (DECC). These were and are not the same things. Critically, it made no assessment of what constraints ComReg had identified in **D11/18** to deem a particular area to be “commercial/non-commercial” and assess whether such constraints continued to apply in the context of a fresh ANR. Such constraints do not exist, or at least have not been identified. ComReg itself shed no light as to what its definition in the P+D Consultation of what constituted “commercial/non-commercial” is, apart from relying on some tenuous link to *D11/18* and the *Dotecon* report.
 - ComReg has failed to recognise that NBI's investment in NBP-IA is a **commercial investment** - a contract won through a commercial tender process - that is set to earn it at least a normal return on profit, with potential for further upside. ComReg claims that it has not given consideration to the fact that NBI will require a government subsidy in order to recover its costs and make a return on investment, but this is entirely contradicted by ComReg classifying its investment in the IA as effectively “non-commercial”.
 - The proposed adoption of some notion of “commerciality” has been used as a pretext for justifying discriminatory pricing that is contrary to EC 2013 Recommendation, contrary to well-established market definition rules, acts as backdoor USO fund, and results in cross market and cross service subsidisation that is contrary to European law.
8. Defining the relevant market or markets is of fundamental importance in any market review as effective competition can only be assessed and measures imposed against this definition. **Furthermore, markets must be defined in line with the methodology described in the 1997 Notice on Market Definition.** ComReg has not followed this process in coming up with the so called “commercial” and “non-commercial” areas.
9. Following on from that summary, a review of the ANR Consultation and ComReg's proposed approach therein with respect to the Access Network Model (ANM) compounds Sky's concerns as outlined in its response to the P+D Consultation.
10. Indeed, Sky's reservations about the proposals in the P+D Consultation have been conclusively confirmed by ComReg's response to Sky's request for clarification on the





ANM submitted on 25 November 2020. Sky asked ComReg to clarify what services and what price points associated with those services informed its conclusion that “*there is insufficient margin from customer revenues in the NBP-IA to contribute to the recovery of common costs*” and thus leading to a conclusion that the NBP-IA was “*non-commercial*” for all services. ComReg responded, in summary, on 4 December 2020 as follows:

- a. WLR is assumed to be the main service that Eircom sells in the NBP-IA.
 - b. No particular price was considered as to the commerciality of the service but rather the position **was consequent** on an approach taken in **D11/18** that recognised “*services offered in non-commercial area cannot be expected to make a contribution to Eircom’s common costs as these costs are already fully recovered from services offered in the commercial area*”. [emphasis added]
 - c. The constraint that informed there “*is insufficient margin from customer revenues in the NBP-IA to contribute to common cost recovery*” arises from the PSTN WLR price set by ComReg in 2016.
11. Before assessing each of these points in turn, the first thing to note is the obvious contradiction between points **(b)** and **(c)** where ComReg first suggests that no particular price point was considered, before going on to concede that the price point that was considered is the nationally averaged PSTN WLR price/s - it is currently €16.59 per month.
 12. Turning to point **(a)**, ComReg’s answer to Sky’s query on what “services” were considered in reaching its conclusion that there was no margin available from customer revenues in the NBP-IA to contribute to common cost recovery is an unduly vague response to what was a very clear query. Specifically, ComReg notes “*WLR is assumed to be **the main** service that Eircom sell in the NBP-IA*” [emphasis added]. It is obviously important to understand **all of the services** that were considered against the criteria that has led to the entire footprint being deemed non-commercial and not just “*the main service*” that Eircom sell in the footprint because ComReg has not deemed, just WLR (“the main service”) to be non-commercial.
 13. In any event, given that the ANM assumes zero active WLR lines by 2029 one can only assume this response pertains to some period before the “*copper switch-off*” assumed by the ANM. It is evident from this that **ComReg has given no consideration to whether Eircom services other than WLR could command a “commercial” price** that could make a contribution to “*common cost recovery*” as prescribed by the EC 2013 Recommendation.





14. In particular, there is no reason outlined in either the P+D Consultation or the ANR Consultation for why pole and duct access prices in the NBP-IA cannot make a contribution to these costs from commercial operators like NBI. It seems that **WLR was the only service** ComReg had in mind when it suggests “*there is insufficient margin from customer revenues in the NBP-IA to contribute the recovery of common costs*”. Having only given consideration to that service in informing its view as to the commerciality generally of the NBP-IA, ComReg’s proposals simply apply the same principle to all services without giving consideration to their individual commercial status. As a result, the ANM was clearly built to a specification given to Cartesian that (wrongly) **prejudged some notion of commerciality** of all services in the NBP-IA.
15. It should be noted the genesis of the “NBP-IA” is under-pinned by a government definition of areas where commercial operators are unlikely to provide broadband speeds greater than 30Mbps for the purposes of the broadband state aid rules. **This is not a ‘market definition’ in the context of the telecoms framework and cannot inform a proposal for discriminatory pricing measures by ComReg.** We would also note that ComReg, under the current telecoms framework and also under the European Electronic Communications Code (“*the EECC*”), is obliged to be independent in the exercise of its functions and therefore it is inappropriate for ComReg to interfere in the NBP-IA and the government’s procurement process without a valid justification to do so in the performance of its functions.
16. Turning to point **(b)** ComReg claims that no price point was considered in informing its view that there was insufficient margin to contribute to common costs from services in the NBP-IA. Setting aside for the moment that this claim is entirely contradicted by point **(c)**, if this were true it is an extraordinary position for ComReg to take because it amounts to a concession that, rather than assessing **whether or not a service could command a commercial price as part of this review**, it is relying entirely on a definition of commerciality grounded in an old ComReg decision (**D11/18**) that focussed solely on the commerciality of WLR, at fixed prices, in a footprint defined materially different than the NBP-IA defined by DECC.
17. Turning to point **(c)**, **we get to the crux of the serious error ComReg would make if it does not amend its current proposal** before a final decision because it confirms the relevant price points ComReg has used to inform its notion of commerciality in the NBP-IA is inexplicably grounded in Eircom’s WLR prices as set under Decision D03/16 (the “*2016 Pricing Decision*”).
18. Relying on this price data to inform a decision that will have implications **for tens of millions of Euros** changing hands over the review period would represent a significant





and serious error on ComReg's part if it does not amend its approach⁹. There are a number of reasons for this, which we turn to next.

- **Relying on the 2016 WLR PSTN price points to inform a view on NBP-IA "commerciality" would constitute a serious error**

19. As noted above, while ComReg claims that "*no particular price points*" were considered in determining the basis for deeming the NBP-IA to be "*non-commercial*" for the purposes of the current review, its follow-on explanation shows this to be untrue. ComReg concedes the "*non-commercial*" classification was a "*consequence*" of the approach taken in **D11/18**. Given that **D11/18** did rely on price points that informed an assessment of commerciality, then by definition **those price points are what now continue to inform the current review** through ComReg's reliance on that decision. Those price points were associated with a single service sold by Eircom i.e. PSTN WLR and based on the outputs of the 2016 Pricing Decision that set those prices.
20. Apart from the fact that ComReg cannot simply equate the NBP-IA, which is a **government definition grounded in an assessment as to whether commercial investment will deliver broadband speeds in excess of 30Mbps**, with the so-called "*non-commercial*" footprint of **D11/18** that was in turn informed by the 2016 Pricing Decision price points, there are a number of reasons the 2016 Pricing Decision price points themselves cannot be relied on to inform any assessment in 2021.
21. **Firstly**, the WLR price points from the Revised CAM in the 2016 Pricing Decision are significantly out of date. Those prices relied on accounting data and volumes from Eircom's *2013/14* and *2014/15* regulatory accounts. The extent to which the information was out of date is highlighted by the fact that in **July 2018** the EC recommended ComReg update the Revised CAM with new data and notify new prices "*without undue delay*"¹⁰. Indeed, **ComReg agreed in November 2018** that this needed to happen "*as quickly as possible*"¹¹ – this still has not happened and ComReg is still relying on that data in 2021 to inform key aspects of the current review. It is clear from the EC's position that using the 2016 Pricing Decision price points to inform the commerciality or otherwise of WLR prices for long lines **was already highly questionable even in mid-2018**.

⁹ As a general point not specific to this observation, given the material impact this review will have on the market, ComReg ought to satisfy itself anew, in accordance with its own Code of Practice, that no conflicts or perceived conflicts of interest arise in relation to this review.

¹⁰ European Commission letter to ComReg 13 July 2018

¹¹ See 7.1367 of D10/18





22. **Secondly**, and by logical extension, if the EC considered the Revised CAM should use “*more recent data*” **more than two and half years ago** (and indeed ComReg conceded that need to happen “*quickly*”) then there can be little doubt that no reliance should be placed on such outputs informing a 2021 decision, yet this is precisely what ComReg is doing as highlighted by its response to ***Sky Query 6***.
23. **Thirdly**, evidence from Eircom’s regulatory accounts has highlighted the extent to which the Revised CAM was significantly out of kilter with the reality on the ground and that the prices generated by the model were in fact delivering returns far in excess of a fair return on capital. Indeed, **ComReg itself highlighted the on-going “*excess returns*” being enjoyed by Eircom for Fixed Narrowband Services in its response to the EC in 2018**¹². This suggests it is possible that not only were existing WLR prices sufficient to contribute to common costs generally in 2018 but may in fact have been contributing to excess returns beyond a cost-oriented price including a fair share of common costs at the time those prices were simply deemed to be “*non-commercial*” by ComReg based on an out of date Revised CAM.
24. **Fourthly**, as discussed in our response to the P+D Consultation, ComReg (in Sky’s view) wrongly held the position¹³ that it could not increase WLR prices pursuant to ***D11/18*** and used this to justify its basis for requiring all common costs to be recovered by lines of 3km or less in that Decision¹⁴. However, even if ComReg were correct in taking that approach at the time of the publication of D11/18, there is no such constraint on ComReg now as part of this current review as **the purpose of the review is to set new prices** for all services subject to cost orientation considered in the ANM, including WLR. As such there is simply no basis in logic/rationality in taking a position that the “commerciality” of lines in the NBP-IA is perpetually tied to a cost model (Revised CAM) that is materially out of date and at any rate is supposed to be replaced by the ANM pursuant to this consultation process.
25. **The ANM is what should inform commerciality of a service in any footprint, not the Revised CAM.** Instead the Revised CAM has been used to predetermine the issue of commerciality and **the ANM has been built to this prejudicial specification.** The sequence of events is clear. ComReg determined in D11/18 that WLR prices

¹² Response to question 6 – the precise date of the response is not provided on ComReg documentation.

¹³ That position is confirmed by ComReg’s response to Query 6 where they concede the then existing WLR price was the “*constraint*”.

¹⁴ As noted in our P+D response, the issue was never consulted on or presented as an option in consultation 17/26. ComReg shared this proposal only with Eircom in advance of issuing the Decision. This is the first occasion the approach is being consulted on in response to a public consultation.





implemented in the 2016 Pricing Decision would no longer be “commercial” and so required short lines (in particular FTTC) to cover all Eircom’s joint and common costs for services it provided beyond 3km from the exchange. Because it took this approach in 2018 in relation to WLR **it has extrapolated from that**, without any explanation for the corollary, that all services in the NBP-IA as part of this review are consequentially “non-commercial” in perpetuity.

26. ComReg has not presented as part of this consultation what the price for WLR or CGA broadband or poles and ducts would be if those services bore a proportionate/fair share of common costs in the NBP-IA. **It is only after** the calculation and presentation of those prices in accordance with best practice cost orientation principles aligned to EC Recommendations can an assessment as to the commerciality of those prices be made. Thereafter, if ComReg considers a cost oriented commercial price to be too high from an affordability perspective, the issue becomes one of Universal Service as discussed **paragraph 50-53** of Sky’s P+D Consultation response and covered below in **Section IV**.

- **ComReg’s irrational “non-commercial” construct ignores that Eircom is running a commercial enterprise in the NBP-IA for years and OAOs are capable of and expected to pay commercial prices for that access**

27. It has already been established through a combination of what is in the P+D Consultation and ComReg’s response to Sky’s **Query 6** published on 4 November, that the only service ComReg considered in the context of its determination of the NBP-IA being “non-commercial” was PSTN-WLR and the only price points used to inform that service’s commercial status are based on the materially out of date Revised CAM that informed the 2016 Pricing Decision.

28. Sky considers that it has demonstrated this approach to determining the commerciality of WLR in the NBP-IA to be deeply flawed. With respect **to all other services** in the NBP-IA ComReg has not made any attempt to justify its labelling of those services as being “non-commercial”. Pole and duct access and CGA broadband access are deemed non-commercial purely on the basis of being ‘*guilty by association*’ with WLR rather than any objective analysis associated with the services themselves.

29. The NBP-IA is a government definition linked **only** to state aid principles and an evaluation of the improbability of investment in broadband that provide speeds greater than 30Mbps. **The government did not follow a market review process and define the NBP-IA as a ‘relevant market’ for the purposes of competition law or telecoms regulation – such obligations fall to NRAs such as ComReg**. The government has also not assessed whether pole and duct access, CGA broadband and other





services can provided by commercial operators in this footprint. Equally, ComReg has carried out no such assessment, nor has ComReg followed a proper market review process.

30. The only indication as to how ComReg defines a service as being non-commercial is by reference to there being “*insufficient margin from customer revenues to cover common costs*” but that test has not been carried out in this consultation for non-WLR services (or WLR for that matter outside of being carried forward from an out of date 2018 test).
31. The fact of the matter is, **there is no reason** Eircom cannot recover commercially viable prices for access to its pole and duct network by NBI. It is worth noting that, in the absence of any clear definition being provided by ComReg under a standard market analysis approach, the Oxford English dictionary defines “*non-commercial*” as “*not having a commercial objective; not intended to make profit*”. This classification could certainly not be applied to Eircom’s network in the NBP-IA where it voluntarily offers multiple services outside of its Universal Service remit.
32. There can be no doubt that Eircom’s network in the NBP-IA is intended to make profit. It is equally clear that **NBI accounted for and was willing to make a contribution to Eircom’s common costs in the footprint when it tendered its bid for the National Broadband Plan**. NBI was willing to pay a commercial price and the relevant price point that informed that commercial decision was based on regulated CEI prices that included a mark-up for common costs. Therefore, to suggest that NBI’s access to pole and duct in NBP-IA **cannot be sold at commercial prices is simply nonsensical**. To argue, as Dotecon has, that “*there is no need to include a mark-up for the recovery of central overhead costs on NBIs CEI access*” in the NBP-IA simply because other operators like Sky can be required to pay for it elsewhere is blatantly discriminatory, distorts competition, and is entirely contrary to the EC 2013 Recommendation and European law in general due to inappropriate cross-subsidisation.
33. In simple terms, NBI is a **commercial operator** that has won a **commercial tender** from the government that assumed it would pay a **commercial price** for access to Eircom’s CEI as part of that bid and has begun to roll-out its network under those conditions. Subsequent to this, ComReg, through its current proposals is saying that NBI should not pay the commercial price for CEI access in the NBP-IA that it assumed it would pay and successfully tendered on, because ComReg has concluded in a irrational theoretical vacuum that access to CEI infrastructure in the NBP-IA is unable to





command **the commercial price NBI was willing to pay**¹⁵. Sky considers this summary fairly describes ComReg's proposal and highlights, independent of the serious legal and regulatory shortcomings of the approach, its inherent irrationality.

34. Furthermore, Eircom itself and SIRO withdrew from the NBP tendering process at a time when **all operators had assumed that they would have to pay commercial prices for pole and duct access**. If either party (or indeed any other prospective tenderers) were advised at the outset that a large percentage of the commercial price for that access would be picked up by FTTC customers in the Urban Commercial footprint and FTTH and other services in the Rural Commercial footprint it may have had a material impact on the business case for competing for the NBP contract and, more importantly, the outcome of that process. As such, it could reasonably be argued that ComReg's proposals are attempting to retrospectively interfere in the public procurement process for the NBP contract and change the terms on which the NBP bidding process was considered. NBI's bid assumed it would pay a commercial price for P+D access, ComReg is effectively telling Eircom it cannot charge NBI that commercial price and at the same time telling NBI it is unable to pay the commercial price it assumed it would pay and tendered on.
35. For more discussion on ComReg's questionable approach to defining commerciality see Sky response to P+D Consultation (**paragraphs 38-49 & 95-96**).
- **ComReg's approach to applying different costing methodologies to the same service across arbitrary geographic definitions is contrary to the EC 2013 Recommendation.**
36. In applying a discriminatory approach to pricing for all services in the NBP-IA versus the Commercial Areas¹⁶ and for pole and duct access pricing for NBI in Commercial Areas, ComReg cannot rely on the EC 2013 Recommendation. This is because that Recommendation provides for consideration of diverging remedies **depending on the underlying competitive conditions in clearly defined sub-national geographic areas**. In this regard, a market may be defined as national, but a cost orientation obligation may only be imposed sub-nationally subject to an assessment of those underlying

¹⁵ It should be noted that ComReg itself regarded the provision of NBP services as being "commercial" in D05/16 where it observed "*because of NBP, it may well be...AFL services can be provided on a **commercial basis**, using infrastructure...deployed under NBP*". Paragraph 27 of D05/16

¹⁶ For the avoidance of doubt, Sky's references to "Commercial Areas" throughout this response reflects language used by ComReg in the consultation and in no way should be considered an explicit or tacit acceptance that such footprints have been appropriately defined by ComReg in accordance with the Framework Regulations.





competitive conditions. However, **the approach proposed by ComReg does not in any way follow that logical blueprint.**

37. ComReg has not justified a discriminatory pricing approach on the basis of differing underlying competitive conditions following standard competition law market analysis as required under the EC 2013 Recommendation. Rather ComReg **has justified the discrimination on the basis that it took such an approach in an historical ComReg decision** and has defined the differentiating footprints, not based on a thorough assessment of underlying competitive conditions, but by reference to the WLR price established in the 2016 Pricing Decision and how that price related to a different and later decision in 2018 that assumed that the WLR price could not be amended at that time. Designating a footprint as “*commercial*” or “*non-commercial*” in this manner for a new ANR does not follow the established legal principles for market analysis and is not a basis for imposing discriminatory remedies.
38. To recap, due to a market failure, where Eircom has been designated as having SMP, ComReg considers a cost orientation obligation should be imposed currently or prospectively on all of the following:
1. FTTC and CGA broadband nationally in the WLA markets
 2. FTTC and CGA broadband sub-nationally in the Regional WCA market
 3. WLR sub-nationally in the Regional Low Level FACO market
39. No sub-national market analysis points to a justification for different cost orientation treatment for services in **1**. In the case of **3**, ComReg’s market analysis in the FACO Consultation already proposes defining the market on a sub-national basis. It cannot be ComReg’s position that there are now three distinct segments within the WLR sub-national market that should be subject to different cost orientation remedies (for the same service) **as a consequence of an assessment of the underlying competitive conditions in those 3 segments**. This is clear from the fact that ComReg is not even able to advise as to the volume of WLR customers in each segment (NBP-IA and Commercial areas) of that sub-national market. In response to **Query 3** from Sky on 25 November 2020, ComReg noted that it “*cannot provide the actual number of lines [per segment] ...as this information is not available*”.
40. In order to justify discriminatory remedial action across the three segments within the same sub-national economic market, ComReg must be able to clearly demonstrate different underlying competitive conditions in each of the segments. ComReg’s response to **Sky Query 3** confirms that it has not, and could not, carry out this exercise. **It therefore cannot rely on an exception provided for in the 2013 EC Recommendation to justify its proposal.**





41. Suggesting an area is “*non-commercial*” for all services in one of those segments by reference to a **single service out-of-date price point** that has no relevance whatsoever to the current consultation is not a sound basis for trying to impose the sort of discriminatory cost orientation remedies being proposed by ComReg.
42. There are no economic or geographic market definitions for SLU, LLU, CGA Broadband, FTTC, FTTH, WLR etc that have been established in any ComReg decision or analysis, nor has there been any assessment in accordance with the 1997 Notice on Market Definition that would support the “NBP-IA”, “Rural Commercial” or “Urban Commercial” footprint definitions that ComReg relies entirely on to support discriminatory cost allocations contrary to the 2013 EC Recommendation. **Any measure ComReg imposes must be “objective, transparent, proportionate and non-discriminatory”.** This proposed approach fails met any of that criteria because it is not based “*on the nature of the problem identified and justified in line of the objectives of the Framework Directive*”.
43. In fact, the definition for the “NBP-IA” is a government construct based purely on a target set out in the EU’s 2015 ‘Broadband and Strategy Policy’. In this regard, the Irish government – not an NRA - classified the NBP-IA on the basis of whether or not operators were investing in or likely to invest in networks with greater than 30Mbps services in the footprint. **This does not constitute an economic and geographic market definition for any service, least of all WLR, CGA broadband or pole and duct access in any footprint.** The government has not applied an approach to market definition in accordance with the 1997 Notice on Market Definition, nor has the government applied an approach in line with the Framework Regulations or sought to impose remedies in accordance with the Access Regulations in a manner that ComReg is obliged to do. ComReg’s proposal that these services (WLR/CGA/P+D etc) are all “non-commercial” simply because they overlap the NBP-IA is entirely arbitrary and cannot not be used as a justification for numerous key decisions that ComReg relies on in making its proposals e.g. basis for the treatment of common costs. ComReg has a legal framework within which it must operate, and that framework includes independence from government and the application of specific legal provisions (as cited above) when carrying out a market analysis with a view to imposing remedies. It is very concerning that ComReg appears to be ignoring this and seeking to inappropriately intervene in the NBP-IA.

III. ComReg’s proposals are likely to be in breach of European competition law whereby it will result in Eircom’s services, in markets where it holds Significant Market Power being sold below Average Variable Costs (AVC)



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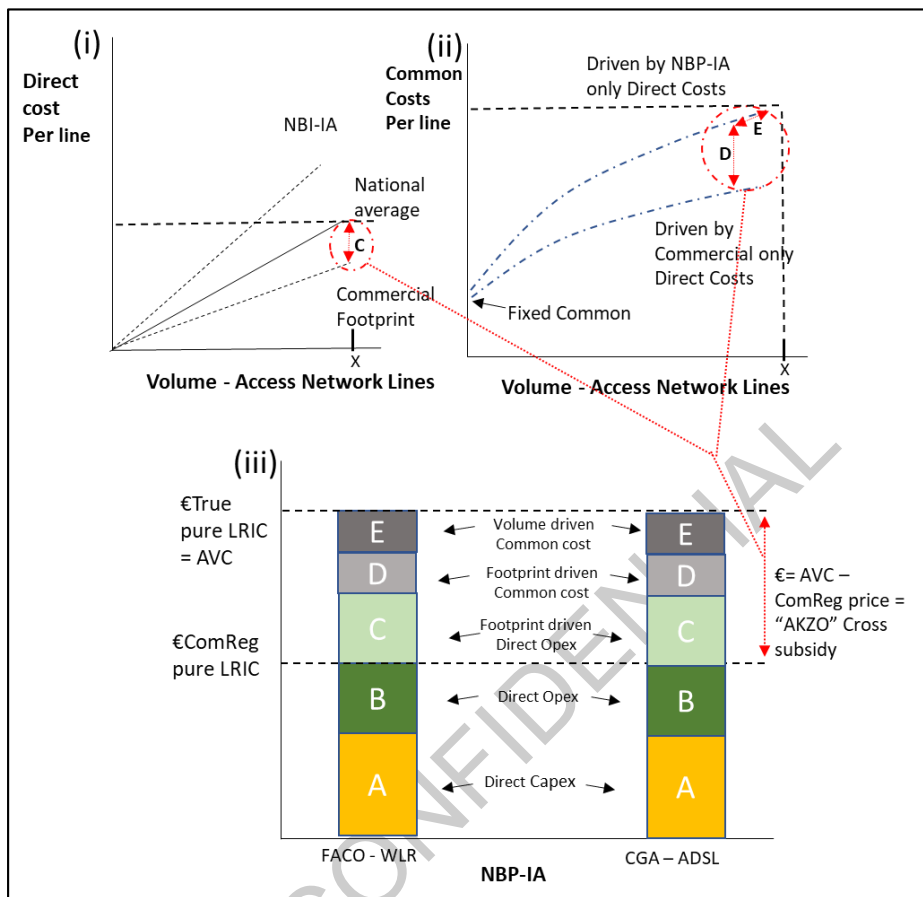


44. This section should be read in conjunction with paragraph **74-79** of Sky's P+D response. Sky is of the view that ComReg's current and proposed pricing approaches **raise serious concerns about compliance with European law**. Sky considers that the proposed approach will facilitate a cross-subsidy regime that runs the risk of Ireland being in breach of Article 106 of TFEU.
45. Following on from the analysis presented in the P+D Response, in Sky's view it is clear that Eircom's services in the NBP-IA footprint, in particular WLR and CGA broadband, are priced in a manner that does not cover their Average Variable Costs (**AVC**). As referenced in the P+D Response, in accordance with the precedents of the *AZKO* and *Tetra Pak II* cases, **prices below AVC must always be considered abusive**.
46. The following analysis provides clear evidence that ComReg's proposed approach to the treatment of certain direct variable operating costs (repair and maintenance) and variable common costs (both capital and operating) ensures the proposed pricing for services offered in the NBP-IA will **not cover its AVC without a subsidy from services (e.g. FTTC) not even sold in the NBP-IA**.
47. To assist in our analysis we refer to **Figure 1**:

Figure 1

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48. Starting with *Chart (iii)* in *Fig. 1*, we see that **A** represents incremental capital costs associated with services in the NBP-IA. Also, in *Chart (iii)*, **B** represents what ComReg has proposed as the service specific direct operating costs which are spread across the footprint on a per line basis. **A + B** together represent what ComReg deem to be the “*pure LRIC*” costing approach to services in the NBP-IA footprint. We can therefore reasonably assume this is ComReg’s proxy for covering AVC of services in the NBP-IA¹⁷. Sky are presuming at least in principle ComReg accept that services in the NBP-IA must cover their AVC. If this is not the case they need to clearly state this in their final decision.

¹⁷ We can also reasonably conclude that this narrow definition of incremental costs is what ComReg relies on to support its claim in the WACC Decision where it claims in D11/18 that incremental costs of lines beyond 3km is not subsidised by lines less than 3km. Sky do not accept that claim based on an assessment of the ANM and the ANR Consultation.





49. Without prejudice to Sky's view that there is no reason a fair allocation of common costs across all footprints cannot be facilitated by setting prices at the commercial level for individual services (see **Section II** above), it is easy to demonstrate that **A+B** as determined by ComReg **simply does not cover the AVC** of these services in the NBP-IA even if one were to accept fixed common costs¹⁸ should only be recovered from areas other than NBP-IA. What ComReg has proposed could more accurately be described as "*pure LRIC minus*" pricing rather than "*pure LRIC*" pricing – the "*minus*" element representing the quantifiable element of the price below AVC.

- **Ignoring the fact that shorter lines incur lower direct costs is contrary to ComReg's objectives under the 2002 Act and means longer lines are not recovering their true incremental direct costs**

50. ComReg has taken no account of the fact that direct costs associated with lines in the NBP-IA are higher (and most likely significantly so) than those driven by lines in the Commercial Area. By simply averaging these costs across lines nationally the true incremental Repair and Maintenance ("R+M") operating costs, for example, in the NBP-IA are not recovered in the main by lines in that footprint but rather are covered by lines in the Commercial Area as depicted by **C** in charts (i) and (iii).

51. The evidence for this conclusion is stark and is reflected in data routinely collected and monitored by ComReg itself in assessing Eircom's compliance with its Universal Service Obligations. ComReg's response to **Query 7** of Sky's 25 November 2020 letter is therefore troubling as in fact **ComReg has very detailed information** on the level of fault activity in the so-called "*commercial*" v "*non-commercial*" footprints.

52. ComReg stated that "*it has no detailed information on R+M for each of the three footprints and hence did not assess the allocation of these costs*". In Sky's view, **it would be a serious error for ComReg to maintain this position as it is patently untrue**. Not only does ComReg have detailed information on repair and maintenance, it publishes this type of information on a quarterly basis. It requires some explanation as to how ComReg is willing to propose the NBP-IA is "*non-commercial*" for the provision of WLR when it is not even able to provide an estimate of the volume of WLR lines in the footprint¹⁹ and at the same time has no discussion in the consultation about whether rural lines are likely to incur higher R+M costs because it claims to not have "*detailed information*". In the first case the lack of data does not prevent ComReg proposing an outcome whereby **Urban Commercial customers will pay tens**

¹⁸ There is no basis for classifying much of what common deem to be "*variable common costs*" to the "*common cost*" category. For further discussion see **5.3.7** of AM Report

¹⁹ See ComReg response to **Query 3** on 4 December 2020.





of millions more over the review period to compensate the “*non-commercial*” NBP-IA services while in the latter case where ComReg has very useful and detailed data it appears to be avoiding a discussion on a topic that it must recognise would lead to lower FTTC prices that better reflects cost causation principles.

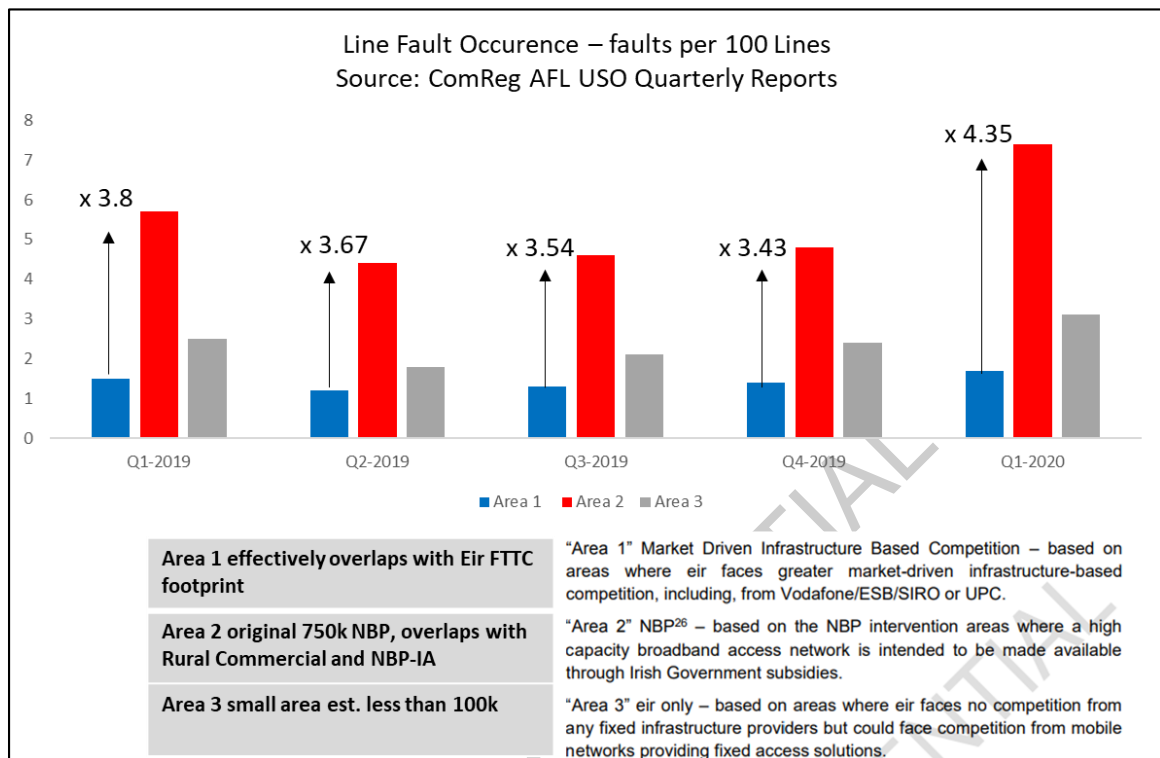
53. As stated above, ComReg **has detailed information** and evidence that lines in the NBP-IA and Rural Commercial footprints are considerably more costly from a R+M perspective than Urban Commercial lines like FTTC. Therefore, ComReg **is aware that shorter lines (in “commercial” areas) have a fraction of fault activity seen on longer lines (in “non-commercial” areas)**. To ignore that fact and the associated cost causation implications is contrary to ComReg’s objectives under the 2002 Act and this omission cannot be used to justify the cross-subsidy regime being proposed.
54. **Figure 2** reproduces data presented on a quarterly basis by ComReg on incidences of fault occurrences across 3 “Areas”. *Area 1* corresponds to an almost identical overlap with the Urban Commercial Area in the ANM Consultation while *Area 2* covers all the NBP-IA footprint combined with the majority of the Rural Commercial footprint²⁰.

Fig2

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²⁰ It is not an answer for ComReg to suggest that the footprints need to overlap identically before the information can be utilised. This is not grounds on which to continue to assume all lines (NBP-IA/Urban Commercial) attract the same level of R+M costs when the evidence is so stark that this is not the case.





55. We can see that lines in *Area 2* have occurrences of faults **between 3 to 4.5 times** that of the Urban Commercial (*Area 1*) footprint. With an estimated 750k premises in *Area 2* and no more than double that in *Area 1*, with a 3 to 4.5 times higher fault incidence rate, not only are longer lines relatively significantly more expensive than shorter FTTC lines, they in fact account for **the bulk of Eircom's total R+M operating costs** despite being made up of a fraction of Eircom's total access lines. **This fact applies before or after HEO efficiency adjustments.**
56. Despite this, ComReg is inexplicably proposing that the Urban Commercial footprint (FTTC) should recover 67% of R+M costs according to the AM report (**Section 3.4 and Figure 3.11**) despite only being responsible for circa half this level of actual costs. Again, that proposal seeks to unjustly drive up the price of FTTC contrary to ComReg's obligation to ensure affordable access to high quality broadband for Irish consumers and to promote efficient investment. In this regard R+M is being treated as a direct cost in name only. **In reality, it is being allocated as though it were a common cost with no regard to where those costs are actually being caused.**
57. The lower fault incidences of FTTC lines is not just down to them being shorter lines. Indeed, in D11/18 ComReg acknowledged that *"the costs of maintaining the [FTTC]*





network are lower as new copper cables are assumed to have lower levels of faults”²¹. The clear implication is that the FTTC network and underlying LLU/SLU service in the Urban Commercial footprint should not be covering any portion of the higher costs associated with longer lines outside the Urban Commercial footprint on services that have nothing to do with FTTC. ComReg must “sense check” that the ANM does not **produce results that are wildly different from the reality on the ground** in terms of known cost causation dynamics.

58. There is therefore no justification for ComReg’s proposed approach to spread R+M costs evenly across all lines and by extension all technologies (CGA/NGA) and all markets (FACO/WLA/WCA). The bulk of R+M operating costs are caused by Eircom’s activities outside the Urban Commercial footprint i.e. services other than FTTC. It would therefore be highly irrational, discriminatory and contrary to cost causation principles to suggest the bulk of those costs should be paid for by customers not responsible for driving those costs. The approach is also clearly contrary to the 2013 EC Recommendation as **an efficient FTTC provider would never incur the scale of R+M costs associated with lines beyond the physical reach of the technology** (even after HEO Line Fault Index adjustments).
59. The incremental costs of providing service in the NBP-IA by comparison to the Urban Commercial area is depicted by *C* in *Fig.2, Chart (iii)*. This represents the true incremental R+M operating cost associated with services in the NBP-IA and represents **a tranche of AVCs not being covered for these services under ComReg’s current proposal** (or indeed under the existing regime under D11/18). For ComReg to comply with its obligations, this must be addressed and amended in any final decision.
- **Variable common costs are driven by both Eircom’s very presence in the NBP-IA and by the higher associated direct costs of NBP-IA lines. FTTC customers should not be bearing any of these costs if cross-subsidisation is to be avoided**
60. Following on from this, given that ComReg’s model recognises that common costs are a function of direct costs i.e. scalable, then clearly if a greater quantity of direct costs is being driven by the NBP-IA footprint, Eircom’s common costs, **for any given volume**, will be greater as a consequence of Eircom’s presence in the NBP-IA (because longer lines are more expensive) than if all of its activities for the same volume were focussed in Commercial Areas. That means there is an incremental portion of common costs directly attributable to NBP-IA but not cover by services in that footprint. That in turn

²¹ See 6.204 of D11/18





means the 'pure-LRIC' prices that include no mark-up associated with those costs is improperly defined – a more accurate definition would be 'pure LRIC *minus*'.

61. Returning to *Fig.2* this portion of common costs not accounted for in the true incremental costs (AVC) of services in the NBP-IA is represented by **D** in *Charts (ii)* and *(iii)* above. In simple terms, if Eircom's direct costs are higher due to factors such as much higher fault incidence in NBP-IA, then by definition its variable common costs driven by that direct cost activity will also be higher. As such **D** is very much a function of **C**. We have established that real R+M costs in the NBP-IA are in fact higher than assumed by ComReg based on a per line assessment and therefore its associated common variable costs are also understated by the same per line assessment.
62. Finally, in recognising that common costs are scalable i.e. because only a portion of common costs are fixed in the ANM cost model, ComReg must by extension accept that **all lines in the NBP-IA** are driving the non-fixed portion of the common costs higher yet under current proposals these incremental costs are all recovered in the Commercial Area. This presents the same shortcoming referred to *para. 60* above. This category of costs is represented by **E** in *Charts (ii)* and *(iii)* above. Such common costs are avoidable **if Eircom has no service at all in NBP-IA**. Just one example of this relates to Network Rates – which is covered by FTTC even where FTTC is not even available [see *Section 5.3.6* of AM Report] **It is obvious an efficient FTTC price does not include a mark-up for Network Rates where a HEO FTTC provider is not even operating.**
63. It should be noted that while it is wholly inappropriate for cost category **C** to be allocated on a per line basis for reasons outlined above, there is at least some (albeit inadequate) contribution from lines in the NBP-IA under that flawed methodology. In relation to cost category **D** and **E**, **there is no contribution at all from the footprint that is causing the costs to be incurred**. Such outcomes are entirely contrary the fundamentals of cost orientation, the promotion of efficient investment, cost causation principles, the interests of end-users and competition law.
64. The clear conclusion that can be drawn from the above is that, under ComReg's current proposal, services in the NBP-IA **will not recover the incremental cost of providing those services**. This evidence-based conclusion also runs contrary to ComReg's assertion in the WACC decision that these services are currently recovering their incremental costs. In reality a significant portion of costs e.g. direct R+M, common transport and IT costs etc **are caused by Eircom's presence and activity in the NBP-IA** and thus those costs represent a portion of the incremental cost of





providing services in that area. However, those costs are currently proposed to be recovered from the Commercial Area and, in particular, from FTTC customers.

65. Consequently, while ComReg claim services like WLR in the FACO market and CGA broadband in the WLA/WCA markets **are not being cross-subsidised by FTTC** in the WLA market (either currently or prospectively) such a denial simply does not stack up against the weight of the evidence presented here, much of it based on ComReg's own data (e.g. Line Fault Indices by footprint) or ComReg's own modelling assumptions (i.e. common costs are scalable).
66. Claiming, as ComReg has in the WACC Decision²², that FTTC prices are currently not covering any of the incremental costs of lines beyond 3km can only be supported through a definition of incremental costs that is based on **a spurious interpretation of the same that is not grounded in economic reality or the available evidence.**
- **The scale of common cost mark-up by ComReg is entirely out of kilter with benchmarks observed in other BEREK member states and represents a significant and unjust premium on FTTC prices**
67. Classifying vast swathes of costs driven by non-FTTC activity as "common" and using that classification as a justification for loading those costs on to FTTC customers cannot disguise the irrationality and inappropriateness of ComReg's proposed approach. ComReg's failure to observe international best practice in this regard is borne out by evidence provided by AM in its report at *Section 5.4.1* and *Figure 5.8* where it highlights the significant discrepancy between common cost mark-ups between ANM models in **Sweden** and **Denmark** by comparison to ComReg's proposal for Ireland. In this regard LLU and SLU common cost mark-ups proposed by ComReg account for **29%** and **27%** respectively by comparison to average mark-ups of **4.5%** and **1.3%** in Sweden and Denmark respectively.
68. ComReg recognised the importance of assessing international comparators in its ToR to *Dotecon* on P+D costing methodologies. It is clear based on evidence provided by Sky and AM in response to this and the P+D consultation, that common cost mark-ups being proposed by ComReg are materially out of kilter with international comparators and **it is incumbent on ComReg to comprehensively explain the enormous**

²² In Sky's response to the P+D Consultation, Sky noted at paragraph 56 that it was willing to accept ComReg's statement "to be true in a narrow sense". However, having turned our attention to the ANM consultation and the detail of the same, we can no longer accept ComReg's position outlined in the WACC Decision to be true in any sense and certainly would not be true in the context of the current proposals.





discrepancy between the approach proposed by it and that implemented by its BEREC partners.

69. Furthermore, with respect to *Fig. 2* above, ComReg must explain why costs represented by **C, D** and **E**, which are indisputably caused by Eircom activity in the NBP-IA (and to a lesser extent, the Rural Commercial Area), should be substantially covered by FTTC customers (Urban Commercial) if it fails to amend its current proposal in a final decision.
70. We would strongly urge ComReg to seek specific guidance on this issue raised by Sky, from the **Competition and Consumer Protection Commission** (CCPC) if it is intent on continuing with a proposal that will result in a SMP providers' services being priced **below the AVC** where that same provider is competing with operators that do not have SMP and where those services being priced below AVC are being subsidised by services in other markets where the provider also has SMP.

IV. ComReg's proposal if implemented will act as a Universal Service "backdoor" which is not permissible under European law

71. As demonstrated by Sky in response to the P+D Consultation, ComReg's current proposal goes well beyond its legal remit **by inappropriately straying into the area of social policy**. The Universal Service Regulations is the only tool at ComReg's disposal to compensate the designated Universal Service Provider for the on-going provision of designated services and we note from recent ComReg decisions that ComReg has clearly determined that the provision of universal services by Eircom are not an unfair burden on it and therefore do not warrant any subsidy.
72. ComReg is not relying on the Universal Service Regulations in order to compensate Eircom for purported "*non-commercial*" service – as noted for example, at *para. 32-33* above, pole and duct access in the NBP-IA has irrationally been deemed to "*non-commercial*" by ComReg notwithstanding NBIs willingness (based on its NBP tender) and capability of meeting a commercial price – rather it is relying on **an effective mark-up/tax on "commercial" interconnect services like FTTC VUA**.
73. The approach proposed by ComReg bears remarkable similarities to **questions considered by the European Court of Justice** upon referral by the Bundesverwaltungsgericht in 2008²³ (see **Annex 1**). In that preliminary reference, the Court was asked to consider the scope attributable to the financing of Universal

²³ Opinion of Advocate General Ruiz-Jarabo Colomer – Joined cases C-152/07 to C-154/07 – Delivered 1 April 2008 and Judgment of the Court (Grand Chamber), 17 July 2008

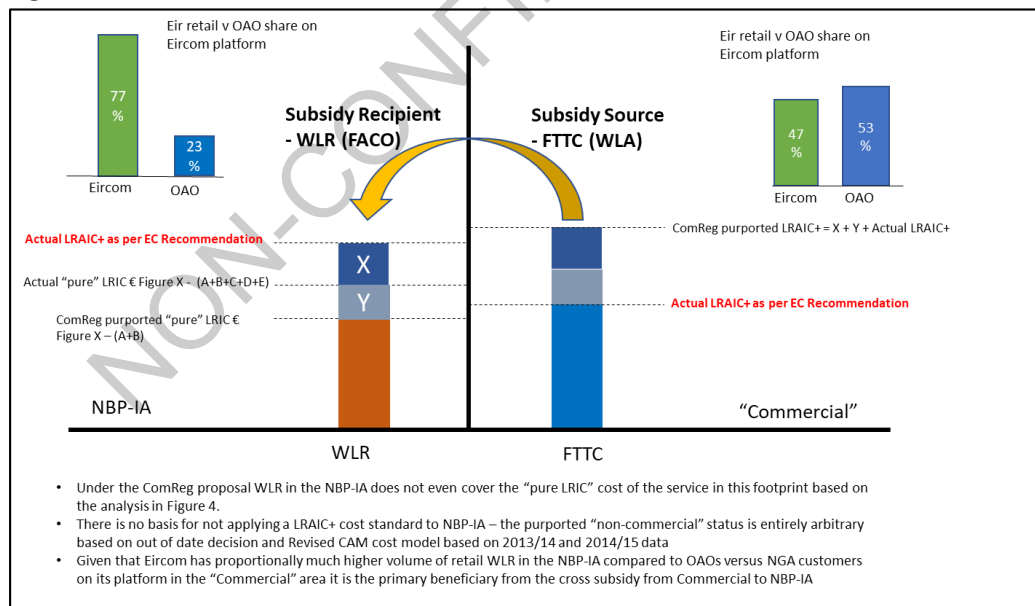




Services. In particular, the German telecommunications regulator had imposed a charge on interconnect rates payable by OAOs to *Deutsche Telekom* that were not caused by or attributable to the interconnect services itself but would be used to cover losses in the local loop generally.

74. Setting aside for the moment that there is nothing preventing ComReg from setting commercial prices for all services in the NBP-IA based on what it has outlined in the ANR Consultation, even if it could construct an argument that it was constrained from doing so, the Opinion of the Advocate General and ruling of the ECJ make it clear that any purported “deficit incurred” cannot simply be recovered through a “contribution” from other operators on interconnect charges. **That is precisely the approach ComReg is proposing** in opposing the 2013 EC Recommendation through a mechanism of cross-subsidisation e.g. OAOs availing of Eircom FTTC services (in WLA market) are cross-subsidising services provided to, mainly Eircom subscribers of WLR in the FACO market as depicted in Fig. 3. The purported “deficit” (to use the language of the ECJ) is occurring in the WLR FACO market in the NBP-IA, the “contribution” to that deficit is from the FTTC WLA market in the Urban Commercial footprint.

Figure 3



75. The AG in his Opinion noted:

“Unlike the situation under monopoly when such internal transfers...were accepted, in the new framework they are not tolerated...The reason is that dominant undertakings could use such practices as missiles to eliminate their





*competitors, consciously maintaining predatory pricing and rather than passing them on to their customers, transferring them to other operators....thus, **competition is distorted** since new operators, who are forced to pay the additional charges, have to increase their prices in order to remain profitable to the detriment of their own competitiveness.” [emphasis added]*

76. The AG Opinion was followed by the Court (see **Annex 2**) where it was held that charges must be derived from actual costs and that it is necessary to ensure that the rules of competition are maintained and safeguarded. Cross-subsidisation and **deficit funding was held to be contrary to the principle of free competition**.²⁴
77. Sky and other OAOs are required to sell FTTC in the Urban Commercial footprint carrying a “deficit contribution”, while Eircom competes with other operators (WISPs, MNOs etc) in the NBP-IA by maintaining predatory pricing underwritten by what is already in D11/18 and will be underwritten by ComReg’s current proposal. This is contrary to the principles of fair competition.
78. Like the German regulator at the time, ComReg is proposing a framework **that will distort the market in precisely the manner described by the AG and ECJ**. *Fig. 3* highlights that Eircom is the main provider of PSTN-WLR services in the **Regional Low Level FACO** market being proposed by ComReg and would no doubt welcome a scenario whereby it could sell those services below cost in this area *vis-à-vis* its competitors while being compensated through a premium on FTTC VUA charges where it also has SMP but a smaller share of the retail market.
79. As is clear from the same AG Opinion and ECJ ruling there is in fact no basis on which ComReg can claim there to be a “non-commercial” area (as *Deutsche Telekom* and the German regulator attempted to argue) because tariff rebalancing associated with the old “access deficit” debates of the early 2000s **had long since ceased to be permissible**. In the view of the AG “*there was no obstacle at all which would have prevented it from compensating for those losses by increasing its prices*”. **ComReg’s proposal attempts to reintroduce an “access network deficit”** it spent many years unwinding through price caps and other regulatory initiatives in accordance with its statutory obligations.
80. ComReg has provided no basis (or “obstacle”) that prevents it from setting “commercial” prices in the NBP-IA. **Reliance on a principle established under a 2018 decision (D11/18) which in turn relied on a constraint from the 2016 Pricing Decision**

²⁴ See para 28 of the ECJ’s ruling





underpinned by an out of date model cannot be proffered as an “*obstacle*” on which ComReg relies to distinguish its proposal from the case considered by the ECJ.

81. In failing to present what “*commercial*” prices look like in the so-called “*non-commercial*” footprint (NBP-IA) in the consultation, ComReg has failed to even provide a reference point for any potential “*obstacle*”, which even if it could be argued for thereafter would have to rely on a Universal Service mechanism to recover any purported shortfall assuming it represented an unfair burden on Eircom.
82. It is worth noting that the current WLR price is higher than that proposed by ComReg in the ANR Consultation. Indeed prior to the 2016 Pricing Decision **the market bore a considerably higher commercial price for WLR of €18.02**. It is patently untrue therefore for ComReg to suggest that these lines cannot bear a commercial charge when materially higher prices were deemed to be affordable and fair in the recent past. ComReg has chosen to avoid a discussion on what it deems to be the commercial prices for the services it claims cannot command those prices. Logically this must be the first step in justifying its proposal or “*obstacle*” to use the language of the Court. **One cannot assume something is not achievable when one does not even know what needs to be achieved.**
83. We would draw ComReg’s attention to the summary and unequivocal response of the AG to the query referred to the ECJ by Germany in the aforementioned case:

*“In light of all those considerations, it is appropriate for the Court, in reply...to declare that the **Competition and Interconnection Directives**²⁵ **preclude a rule...** under which the dominant undertaking may be compensated for losses by contributions additional to the interconnection costs, which are not calculated **exclusively by reference to the costs of the service.**” [emphasis added]*

84. The Court’s reference to “*the costs of the service*” here is crucial. Sky has clearly demonstrated that FTTC charges being proposed are calculated by reference to costs that have not in any way been caused by FTTC service provision (**C+D+E** in *Fig. 2*)²⁶. They are costs clearly driven by activity in the NBP-IA. The ECJ ruling covered in this

²⁵ The Access Directive/Regulations can seamlessly be assumed to equally apply in the context of the ComReg’s proposal.

²⁶ Note that D+E also includes certain costs misclassified as “common”. There are numerous examples of this in the AM report e.g. Network Rates which are paid for by FTTC even though FTTC is available in just 81% of Eircom exchange.





section provides clear direction to ComReg about the inappropriateness of taking such an approach.

85. Pricing must be based on objective criteria and must be founded on the principle of cost-orientation. The AG Opinion in *Polska Telefonica* referring to the previous German case also stated that this principle requires operators to derive interconnection pricing from **actual costs**²⁷, i.e. the actual costs of those services for which the price control measures are being imposed. The AG also confirmed that pricing must be transparent, must ensure equality of access and not be discriminatory. In this regard, we believe that there is a lack of transparency in respect of how pricing decisions are made by ComReg and implemented by the SMP operator but more importantly it is obvious the proposed FTTC prices is bearing the burden of costs clearly attributable to other services and not the service itself.

V. ComReg has failed to update the NGA cost model with more recent data that would in all likelihood lead to a substantial reduction in FTTC prices due to significantly lower operating costs. ComReg has made no assessment of whether such an update would be required contrary to what it historically has deemed to be best practice in this regard

86. The need to update the NGA cost model is starkly borne out by material inconsistencies highlighted by AM in relation to demand assumptions. By way of example, AM (*section 3.5*) point to the assumptions of premises that could utilise EVDSL. The ANM assumes only 162k premises in the Urban Commercial area can achieve EVDSL connectivity while the NGA cost model assumes 154k premises have actual EVDSL connectivity. Taken together this **implies that EVDSL connectivity has achieved 94% penetration against 39% CVDSL penetration in the ANM**. This clearly makes no sense and would point to a fundamentally serious and significant omission on ComReg's part not to properly update the NGA cost model.

87. It is apparent from TERA's note attached to the NGA Model that it has not carried out any assessment of the NGA Model in terms of establishing consistency with the ANM – in fact it is unclear that TERA even had access to the ANM to carry out such an analysis as neither ComReg or TERA have provided any evidence in the consultation (or associated documents) that indicate such an exercise was undertaken or asked to be undertaken. This has led to multiple inconsistencies between the ANM and

²⁷ Opinion of Advocate General in Case C-99/09 Polska Telefonica Cyfrowa sp. z o.o. Delivered 15 April 2010





NGA/NGN Models and in many cases double counting of costs (e.g. see *Section 3.5.5* of AM Report)

- **TERA's attempt to negate the relevance of Eircom's Regulatory Accounts to underpinning the NGA Cost Model is false and contrary to its own averred historical position**

88. TERA states that the “operating costs [in the NGA Model] are not those that Eircom reports in its accounts, which is based on the operation of a its legacy network, but rather those of operating the asset base derived in a Bottom Up logic”. Sky considers this to be a **complete mischaracterisation of the actual source of significant categories of operating costs in the NGA Model**. While certain categories of operating costs may be driven in the manner described by TERA, it is an undeniable fact that the primary source informing those calculations is from Eircom's regulatory accounts.
89. Indeed, contrary to the picture TERA has attempted to paint whereby it has largely discounted Eircom's “legacy” FTTC investment, we would note ComReg's previous position that because Eircom only began to invest in FTTC in 2013 “it did not consider that there was a need to make significant efficiency adjustments to the associated operating costs recorded in Eircom's Regulatory Accounts, as the issues that affect Eircom's legacy copper network do not apply in the case of the recently deployed FTTC/EVDSL network”. In simple terms, **ComReg numerous categories of operating costs from Eircom's regulatory accounts**, mainly 2015/16, to inform the NGA Model's operating costs as a proxy for a HEO.
90. It is disingenuous therefore to suggest that such costs do not need to be revisited because they were not associated with Eircom's contemporaneous regulatory accounts. If Eircom's unit operating costs are declining significantly since 2016, and there is strong evidence to suggest this is the case, then TERA's conclusion on there being no need to revisit these costs is simply wrong.
91. The extent to which it is a deeply flawed and irrational conclusion is highlighted by the fact that in the context of several categories of operating costs, Eircom are today a **significantly more efficient operator than the hypothetically efficient one depicted in the NGA Model**. This implies the HEO in the NGA Cost model is anything but efficient. See *Section 3.6.3* of the AM report for a more extensive discussion on the





extent to which costs has been falling in Eircom, **particularly in the wholesale part of the business.**

- **Both ComReg and TERA’s previous actions and averments point to the need to carry out “sense-checks” of cost modelled data against Eircom’s up to date regulatory accounts but ComReg fail to acknowledge the need for this under the current proposals**

92. TERA’s and by extension ComReg’s casual approach to dismissing the importance of reviewing up to date regulatory accounts in assessing the validity of modelled HEO costs is in sharp contrast to **what it claims to have done prior to the issuance of D11/18**. In this regard, ComReg acknowledges that as a consequence of the 2015/16 HCA’s being the “starting point” for setting operating costs in the NGA Model, ComReg/TERA “*sense-checked*” that data against **the most recently available data** just prior to finalising D11/18²⁸.

93. Indeed TERA’s own expert averred in legal proceedings that while it was not practical to “*continuously update*” cost models with more recent data (**Note: the NGA cost model will be 4 to 5 years out of date by the time the ANR decision is issued so we assume TERA would not suggest that practical advice applies in the current context**), he underlined the importance of considering doing so “*where it is established that material differences exist*” between the modelled data and the latest **regulatory accounting information** which TERA described as being “*the most relevant reference point for assessing cost trends*”. Indeed, the TERA expert in question acknowledged that the regulatory accounts (i.e. Eircom’s) is used as the “*source/reference year in the cost model*” which entirely contradicts the position outlined in the most recent TERA note as a justification for “*not necessarily*”²⁹ needing to use up to date information in the current review.

²⁸ Paragraph 170 (a) of Affidavit of Donal Leavy filed on 1 March 2019 – Record No. 2018/459 MCA

²⁹ Sky would note that TERA’s position of “*not necessarily*” needing to update the model, conveys an acceptance that there may be circumstances where it would be necessary to do so. It is notable that ComReg also adopt the non-definitive language “not necessarily” at paragraph 6.77 of the consultation but then make the leap to definitively ruling out updating the information on grounds contrary to its own previously averred positions. Sky is clearly calling out that it is unacceptable for ComReg not to transparently carry out sense checks and update relative operating cost categories where material difference are identified – this would be an outcome that “necessarily” requires model updating as both ComReg and TERA recognised and averred to in the past.





94. The regulatory accounts used by ComReg/TERA to carry out its sense-checking exercise in 2018 were from 2016/17 (just one year later than those relied on for the NGA Cost Model) as these were the then most recently available. ComReg and TERA were aligned in their recognition on the need to sense check more recent data with modelled data, yet on the occasion of the current consultation appear again to be aligned on a **diametrically opposed approach** without any justification or recollection for their previous best practice advocacy. The **logical inconsistency** in recognising the importance of carrying out a “*sense check*” on data that was at that time just 1 year out of date with not doing so now when the data is 4 years old is self-evident, erroneous and irrational.
95. Sky maintains that there are strong reasons why ComReg ought to have updated several categories of operating costs in the NGA Model prior to the issuance of D11/18 but ComReg took the view (in Sky’s view wrongly) that no material savings were being observed in the wholesale side of Eircom’s business. Even if that was a defence for not using more up to date costs in 2018 following ComReg/TERA’s “*sense-checking*” exercise, **it is abundantly clear that the same defence cannot be put forward on this occasion. It would be a serious act of omission by ComReg to fail to carry out that exercise.**
96. ComReg in justifying its current proposal makes no mention of “*sense-checking*” and instead offers a pre-emptive argument for not carrying out such an exercise by suggesting the costs in the NGA cost model are based on a HEO and imply such an exercise is thus, unnecessary. The problem this explanation presents for ComReg (and TERA) **is it is materially inconsistent with representations both made to the Irish High Court in 2019.** In Sky’s view ComReg and TERA (if it has access to Eircom’s Regulatory Accounts) both recognise that if it carried out the same sense-checking exercise it advocated for prior to the issuance of D11/18 now, it would be bound to update the current NGA cost model for numerous categories of operating costs. As noted by AM in several instances it must be carried out in any event if **significant incidences of double-counting is to be removed** – which it must to comply with cost orientation.
97. As noted by AM, and quoting from Eircom’s most recent Regulatory accounts:

“the reduction in pay costs was primarily due to a combination of lower contractor costs and savings from the voluntary redundancy programme launched in the prior year”. Both contractor costs and the redundancies,





mostly in the operational/technical division as discussed, are **related to the services accounted for and sold by the wholesale business**. [AM Report Section 3.6.3]

98. It is therefore incumbent on ComReg to review and update operating costs in the NGA Model as part of the current process if significant over-recovery of Eircom's costs is to be avoided. If it fails to do so it will be apparent **the only costs it has sought to update in the model** other than WACC (which should have happened in 2018 in any event) is to significantly increase LLU/SLU costs utilised by FTTC (but not WLR) in an effort to offset the material and long overdue reduction that would be associated with the new WACC.

99. The arbitrary, inconsistent and discriminatory nature of ComReg's current proposals, not least failing to update the NGA Cost Model opex, all of which has the impact of pushing FTTC prices higher, raises legitimate concerns about how ComReg is approaching the task under its remit. In this regard, for example, it would not be appropriate for **ComReg to target a specific price point for FTTC** that it deems to be arbitrarily "reasonable", rather it is obliged to establish efficient cost oriented prices for the services in question in accordance best practice and European Recommendations.

VI. The AM report highlights multiple errors and unjustifiable discretionary/arbitrary positions taken by ComReg that all result in higher than justify FTTC prices

100. In this section Sky highlight just a sample of additional serious modelling/assumption errors ComReg has made in the ANM. A thorough analysis of the AM Report is required for a full overview.

- **Eircom's claims on Urban Commercial FTTH roll-out over the next 4 years have been taken at face value but the accelerated roll-out costs fall primarily on FTTC services which are not causing these costs to be incurred**

101. Further to our response to the P+D Consultation (*paragraph 92*) and by reference to the evidence gathered by ComReg as reproduced in *Fig. 2* above, **there seems little basis for the 25% pole replacement programme assumed in Urban Commercial Areas in the PAM**. With *Area 1* consistently showing less than a third of the occurrences of line faults by comparison to *Area 2* it is reasonable to assume a





materially lower percentage of poles will need to be replaced to facilitate FTTH roll-out to 1.4m by 2024, than occurred in the Rural Commercial footprint.

102. It is unclear from the P+D Consultation or the ANM as to the precise basis for the assumed 25% pole replacement in Urban Commercial areas other than it is a figure ‘sourced from Eircom’. Sky would have expected that the scale of replacement required in the Rural Commercial area would to some extent inform this percentage **albeit at a much lower level for the reasons outlined in para. 55 above**. However, it is difficult to reconcile any claim by Eircom around a 25% pole replacement in Urban areas with its own on the record claims about what was required for its Rural Commercial roll-out (the 300k footprint) and it is concerning that ComReg does not appear to have interrogated this information ‘sourced from Eircom’. This is particularly concerning when information that is readily available in the public domain clearly contradicts this 25% assumption for pole replacement in Urban Commercial areas.

103. In this regard, on 25 June 2019, Eircom presented the following facts to an Oireachtas Committee on the “300k program”:

- Eircom rolled out 27,000km of new fibre
- Eircom replaced 69,000 poles
- Eircom installed 110,000 4 port splitters

104. Based on the reasonable assumption that poles are typically spread at 50m distance and conservatively assuming 80% of the 27,000 km of fibre is carried over the pole infrastructure (it could be more), then we can assume that there are approximately 432,000 poles in the footprint (see Fig. 4). **This indicates that at most than 16% of poles were actually replaced by Eircom in a footprint** that experienced a factor of 3 to 4 times the level of fault occurrences of the Urban Commercial area.

Figure 4

Km Fibre in Rural Commercial	27,000	Source: Eircom
Metres of fibre	27,000,000	Calculation
Poles replaced in Rural Commercial Area	69,000	Source: Eircom
Typical spacing between poles (metres)	50	Source: PAM
Fibre metres carried by poles at 80%	21,600,000	Calculation
Implied poles in Rural Commercial footprint	432,000	Calculation
Implied pole replacment in footprint	16.0%	Calculation





105. In order for the 69,000 replaced poles to represent 25% of poles in the footprint, up to 50% of the 27,000km would have to be carried through the footprint via duct. **This is highly implausible**, not least because as ComReg itself noted in the P+D Consultation it *“assumes that there would have been very limited duct investment since 1990 in rural areas comprising the NBP-IA as **most access routes are overhead**”*. Given the Rural Commercial area originally formed part of the NBP-IA we expect the same conclusion would have to be drawn by ComReg.
106. Based on the foregoing it is very difficult to see on what basis an assumption around 25% pole replacement in Urban Commercial areas by 2024 is credible even if Eircom did actually roll-out FTTH in the Urban Commercial footprint to 1.4m by that time, **which in itself is highly questionable**. That ComReg has apparently not interrogated this assumption is very concerning.
107. The fact that Eircom claim it is going to do something also does not constitute evidence that this will happen or that indeed there is sufficient demand for FTTH in the Urban Commercial footprint within the time horizon of this market review to justify the speed of such a roll-out. As such ComReg must assess the validity of any claims made by Eircom based on the evidence currently available and **it is not clear that ComReg requested Eircom’s internal FTTH roll-out business plan which must have been produced and signed off by the Eircom Capex board before Urban FTTH roll-out was initiated**.
108. We also note that ComReg has not carried out any analysis to support an assumption that there will be sufficient demand for FTTH in the Urban Commercial footprint (where FTTC is available providing speeds up to 120Mbps) in areas where there is no other operator providing an equivalent service, let alone in areas where there is already a presence from the likes of SIRO and Virgin which further dampens a business case for aggressive roll-out of FTTH across 1.4m premises by Eircom.
109. It is remarkable that ComReg excuses itself from allocating R+M costs on the basis of geographic footprint because it does not have **precise details** of costs in those footprints (notwithstanding it actually has significant detail as highlighted in *Fig. 2*) yet in this case ComReg appears content to make highly arbitrary assumptions based **on no supporting detail and very limited or no analysis**. The result again is that maintaining that position will significantly and unjustly drive up the prices of FTTC.





110. ComReg's approach is also in sharp contrast to the approach it took in D11/18 where many respondents to consultation **17/26** urged ComReg to take account of the unique nature of the "300k footprint" and impose a cost orientation obligation on Eircom's FTTH rental charges. ComReg took the view that, despite the fact that there was little or no infrastructure alternatives to Eircom in this footprint (except for Eircom ADSL), **it considered there was significant demand uncertainty around FTTH** and so deemed such intervention was not merited. On this occasion, where there is FTTC available footprint-wide and FTTH is already being provided by other operators in the Urban Commercial area, ComReg appear to be satisfied to take Eircom at its word that it will roll-out FTTH to 1.4m premises and that this will require accelerated 25% pole replacement. In reality, the uncertainty factor around FTTH demand associated with a full 1.4m footprint roll-out is considerably higher than was the case in relation the "300k footprint" considered in D11/18.
111. It should be noted that in the context of the "300k footprint" Eircom had a contractual commitment with the Irish government to pass this number of premises with FTTH, failing which it would be subject to substantial financial penalties. In relation to the **1.4m** premises in the Urban Commercial footprint its commitment has only been to repeated public relations statements. Eircom is not legally obliged to roll-out FTTH to 1.4m premises and it will no doubt inform a view as to how far that roll-out goes **depending on the success of the early phases when considered against its business plan.**
112. There is in fact a growing body of evidence that suggests Eircom is happy to deploy FTTH to easy to get addresses in the Urban Commercial Areas but numerous operators have complained to Eircom at the Product Development Workshops (PDWs) and directly to ComReg³⁰ itself that Eircom's APQ file shows a large volume of addresses that are marked as being fibre enabled but in fact orders cannot be delivered when put through. **The issue is so bad that it has prompted the industry to seek a SLA from Eircom to remove such addresses from the APQ** – Eircom to date is refusing to accept this SLA request as a valid Access Request. Be that as it may what is clear is that when Eircom loads addresses to into its APQ file as being fibre enabled it does not necessarily mean it will deliver fibre to those addresses and it certainly will not accelerate pole deployment associated with those addresses.

³⁰ Sky is aware of such evidence being provided to ComReg via one of its wholesale partners BTI.





113. The inherent uncertainty about the extent to which Eircom will actually roll-out FTTH in the manner anticipated by the current ANM must be catered for in final cut. As Sky has outlined in our response to the P+D Consultation (*para. 93*) **accelerated pole replacement driven by Eircom investment in FTTH should be recovered in FTTH charges**. Under ComReg’s proposals, not only has the ANM not allocated these costs to FTTH, but the bulk of that accelerated investment cost is picked up by FTTC. As noted by AM FTTC pays “*a disproportionate amount for poles, for which FTTH then receives an explicit discount*”³¹ in the Urban Commercial footprint. This runs entirely contrary to the cost causality principles in a manner that unnecessarily drives up FTTC prices and it is an activity no hypothetically efficient provider of FTTC would need to undertake. As such **competition is distorted and inefficient investment signals** are being sent to the market.
114. Indeed, as noted by AM “*what this means in practice is that FTTC prices in the next few years are cross subsidising a new FTTH network, which is contrary to ComReg’s objectives encouraging efficient investment, and contrary to the requirements of technology neutrality*”. The proposed approach is further without merit as Eircom is free to set FTTH monthly prices without a cost orientation constraint. That means if and when Eircom deploys an accelerated pole replacement program in the Urban Commercial Area to facilitate FTTH roll-out **it is free to cater for such activity in its FTTH business planning and pricing** rather than enjoying a cross-subsidy from FTTC to do so or worse still not do so and merely bank the upside being proposed by the current ANM.
115. ComReg need only ask itself, why must a pole replacement programme be “*accelerated*”? If the answer is because of **FTTH deployment**, and it is, **then ComReg acknowledges what is causing the “accelerated” costs to be incurred**. If it continues to suggest that FTTC should pay for that “*accelerated*” roll-out ComReg is advocating for the type of cross-subsidy identified by AM contrary to ComReg’s legal obligations as NRA, contrary to competition law and its own objectives under the 2002 Act.
116. Without prejudice to Sky’s view that any contribution from FTTC to accelerated FTTH pole deployment is inappropriate, at the very least Eircom must not be permitted to recover such costs **where the scale and speed of deployment anticipated by the relevant cost models never materialises**.

³¹ Section 5.5.8 of AM Report





117. In this regard, Sky would note that ComReg's willingness to review pricing on an annual basis to address over/under charging with respect to NBI³², should equally apply to Eircom's 25% pole replacement claims in the Urban Commercial area. In the interests of non-discrimination Sky would expect the solution proposed in the NBP-IA to address such uncertainties would equally apply to Urban Commercial areas, in particular where FTTC prices are impacted. This representation is made without prejudice to Sky's view that FTTC prices should not bear the weight of any accelerated pole replacement initiatives associated with FTTH in any event.

- **ComReg approach to costing EVDSL provision is illogical and vastly overstates the costs of an efficient operator**

118. The provision of EVDSL does not require the scale or scope of infrastructure assumed by the ANM. EVDSL is only a viable product for a direct fed copper line under 1.5km. It does not use both E-side and D-side infrastructure as assumed by the ANM. In addition, as noted in AM's analysis the long-term utilisation of EVDSL capacity is just **14%** in the latest NGA Model as a consequence of over-dimensioning of DSLAMs. This model clearly needs to be updated to remove such obvious instances of 'gold-plating' which unnecessarily drives up FTTC prices and is contrary to ComReg's objective to promote efficient investment. This issue highlights the disconnect with the NGA Cost Model that assumes copper is sold in perpetuity and the ANM model assumes it is completely replaced in the coming years.

119. As noted by AM Report at *Section 3.5.4* there is no reason an efficient operator would seek to deploy **1728 port DSLAMs in perpetuity when it could use 192 port equivalents**. Taking this approach would contribute to an estimated and possibly understated material reduction of **€0.50** in contributory EVDSL unit costs to FTTC prices.

- **The ANM materially over-estimates the exchange presence of FTTC resulting in FTTC paying disproportionately more for areas which have lower economies of scale**

120. The current ANM assumes that FTTC is available at **98%** of exchanges. This is considerably out of line with the reality that it is in fact only available at **81%** of exchanges. As noted by AM this erroneous assumption artificially "reduces the

³² See section 10.2.2 of P+D Consultation





*economies of scale for FTTC areas and instead causes FTTC inputs (LLU and SLU) to pay disproportionately more for areas which have lower economies of scale*³³. It is yet another incorrect assumption that results in unjustly driving up FTTC prices that needs to be amended before the final decision.

121. It is not the only example of ComReg's proposals artificially driving costs on to FTTC by ignoring cost causation principles as explained in *Section 5.3.9* of AM Report. As noted by AM, the ANM model "*overloads the fibre opex on to FTTC fibre links*" by ignoring the fact that FTTC fibre links are shorter and ducted and FTTH lines are longer with a significant portion with aerial connections and thus driving greater maintenance costs.
122. No account is taken of **these known operational distinctions** but rather a crude allocation of costs is carried out on a per active line basis which results in 71% of non-common opex being allocated to FTTC with just 21% to FTTH. This is distinct and in addition to the R+M misallocation issue discussed in *para. 56* that exacerbates the inappropriate treatment of those costs generally.
123. Furthermore, as noted by AM Report at *Section 5.3.11* FTTC provisioning costs is paying for its own lines through capitalised provisioning costs "*as well as subsidising the provisioning costs of PSTN-WLR lines*" through a contribution to provisioning operating costs of WLR. This double counting of FTTC provisioning costs (and cross-subsidy of WLR provisioning costs) must be removed from final FTTC prices.
- **ComReg's proposal reflects a material error by over indexing SLU's share of per line operating costs at 85%**
124. *Section 5.4.4* of the AM Report has identified a material error in the ANM in relation to SLU's share of per line operating costs. In particular, AM note "*there does not seem to have been an attempt to allocate opex on a cost causation basis*". Rather ComReg has adopted an arbitrary assumption around the **85%** rather than adopting a calculated approach based on E-side, D-side and final drop Capex.
125. If the more scientific and objectively justifiable approach is taken, as occurred when ComReg developed the Revised CAM, the **85%** allocation would be reduced to **67-68%** in the worst-case scenario and as low as **53%** in the best practice scenario.

³³ See *section 5.1.1* of AM Report





Even under the '67-68% scenario' AM estimated the impact of dispensing with ComReg's arbitrary assumption would result in a reduction of up €1 on the currently proposed monthly FTTC prices.

VII. Further to ComReg's "Call for Inputs" the current FTTH connection/migration regime has already seen enormous and undue benefits accrue to the SMP provider and gives it far too much flexibility. The regime is also distortionary and does not promote the interest of end-users or adhere to cost causation principles.

126. The delay in issuing the Market 3a and 3b reviews presented Eircom with a significant opportunity to exploit the fact that, notwithstanding a cost orientation obligation on ancillary services was required under *D03/13* and *D03/16*, the method of cost recovery was entirely unspecified. This meant ComReg considered it was powerless to intervene when Eircom increased the FTTH connection charges from €150 to €270 on 1 February 2017. Eircom's **incentive to favour its own retail arm** and restrict take up of services by other operators was essentially provided for by the vagueness of the cost orientation obligation attached to FTTH ancillary services and ComReg's failure to complete the market review within specified timelines.

127. The increase of the connection charge to €270 had a significantly detrimental impact on the market. While Eircom cited increasing the length of connections to the DP (Distribution Point) as the basis for the increase, the reasons for the price increase was irrelevant (and was never validated in any event³⁴), what it **amounted to was a strategic play that meant the majority of OAOs simply could not enter the market with a viable business plan**. This problem was exacerbated by the fact that at the outset Eircom Retail was providing connections to retail customers for free³⁵. The existing Margin Squeeze Tests (MST) provided little cover for OAOs as they are largely ineffective particularly in the early stages of market development where Eircom can populate the test with favourable assumptions it knows ComReg are not in a position to challenge. It is not difficult to "game" the current MST process.

³⁴ This explanation or the associated validity of the increased was, to Sky's knowledge, never investigated by ComReg and was just another example of Eircom being taken at their word on something that materially impacted the market.

³⁵ See Vodafone letter to ComReg on 24 November, 2017 in Annex 8 to D11/18.





128. In the meantime, as evidenced by various correspondence on the public record, minutes of NGA forum meetings recorded by ComReg and meetings held with senior stakeholders in ComReg with OAOs, industry was seeking ComReg's urgent intervention on the matter. In particular, ComReg had indicated its preliminary view in consultation ComReg 17/26 that it considered Eircom **should only be permitted to recover the cost of in-life migrations through upfront connection charges**. OAOs had therefore a legitimate expectation that the crux of their problem would be resolved once ComReg issued its market review decision which ComReg had indicated would occur before the end of 2017³⁶.
129. Having signed a Commitment agreement with the government to roll-out FTTH to 300k premises ("300k Footprint") in April 2017 and having already initiated that roll-out in 2016³⁷, Eircom retail began signing up customers in early 2017, claiming to have connected 12k customers by the end of Q2 2017. It should be noted that Eircom's roll-out **was not in any way curtailed/delayed by the fact that ComReg had expressed its preliminary view that Eircom would be required to recover the vast majority of its FTTH connection costs through ongoing rental charges**. In this regard it is worth noting that ComReg consider that operators do attach weight to ComReg's preliminary views in making investment decisions and clearly Eircom were unperturbed by ComReg's proposal.
130. Sky consider this was because Eircom's recovery of connection charges **would be "relatively assured"**, something rightly **noted by ComReg** in consultation 17/26, through on-going rental charges. Notably ComReg never revised its view in this regard and Sky agreed with ComReg's observation because as reaffirmed by ComReg in the current consultation, **Eircom face insufficient infrastructure competition in the Rural Commercial area to undermine its SMP designation**.
131. As such Eircom's retail arm was essentially given a "free-run" at the market as OAOs either did not enter due to viability concerns given the exceptionally high €270 connection charge or were waiting for ComReg to issue its Market 3a/3b review and pricing decisions before the end of 2017 **that delivered on the preliminary view expressed by ComReg in April 2017**.

³⁶ See paragraph 5.40 of ComReg 17/31, Electronic Communications Strategy Statement: 2017-2019

³⁷ Eircom Q2 2017 quarterly report indicates Eircom passed 44k of the 300k Footprint by end of June 2017.





132. In the end ComReg did not issue its Decisions until November 2018 and it then **departed significantly** from the preliminary view it expressed. This was 17 months after Eircom introduced the €270 connection charge and almost 2 years since the price was notified to ComReg. In that time Eircom acquired virtually all of retail customers signed up in the 300k Footprint up to that date. As noted by ComReg Commissioner, Jeremy Godfrey at an Oireachtas Committee in October 2018, ComReg had observed that it had “*not seen any competitors*” use Eircom’s FTTH as a consequence of Eircom’s upfront pricing strategy. There can be no clearer evidence of market failure than a concession that there was no competition to the incumbent.
133. It should be noted that Eircom’s behaviour in exploiting this market failure **was entirely rational as its strategy was clearly predicated on acquiring as many retail customers at it could for its own downstream arm before it sought to drive uptake of the service on its wholesale platform.** Had Eircom wanted to achieve high penetration regardless of retail provider from the outset, then its connection charges would be much closer to the current €100 charge that only came into effect when Eircom launched service in the Urban Commercial footprint where it does face competition.
134. Sky estimate based on publicly available information that **by the beginning of Q4 2018, Eircom retail had acquired more than 40k customers in the 300K Footprint** (for over 200K premises passed). The strategy gave Eircom a first mover advantage that resulted in it taking a market share in Rural Commercial footprint that is unlikely ever to fall below the 50% (the EU presumed dominance/market failure) threshold³⁸.
135. ComReg ultimately determined that Eircom **could recover all of its connection costs through upfront charges** provided connection and migration charges were equalised. There was some suggestion in D11/18 by ComReg that there was “*evidence*” that OAOs were not selling FTTH to new customers as they were ‘laying in wait’ to sell migrations. While ComReg has since clarified that this was a “*hypothesis*” it was working off rather than something it had evidence of, Sky can confirm for its part that **it is not credible** that it would undergo significant product and IT development (**costing in excess of €10m**) so that it could deploy a strategy entirely predicated on sitting back, waiting for contracts to expire and then trying to win a portion of migrations. Such a strategy is simply not a viable or credible business

³⁸ Sky acknowledge the Rural Commercial footprint has not been a legally defined geographic or economic market and cannot be used as a basis for imposing remedies pursuant to SMP designations despite the fact that ComReg appears to be suggesting it can in the context of the ANR generally.





plan for any operator to deploy where market penetration was so low and **would be all but impossible to pursue from a sales and marketing point of view.**

136. It is unclear therefore on what basis ComReg reached its “*hypothesis*” and given that no evidence was brought to bear by any operator, including Eircom, it is an issue that must now be revisited by ComReg in particular in terms of addressing the detrimental impact to consumers of the current regime. **Having acquired virtually all retail customers up to the end of 2018** as a consequence of its €270 connection charge pricing strategy, the subsequent increase in migration charges from €2.50 to €170 on 1 January, 2019 **allowed Eircom to consolidate its customer base by effectively erecting a financial barrier to switching.** This was a win-win scenario for Eircom – very high connection charges, followed by critical mass subscriber acquisition with no competition, followed by a financial barrier to switching. The high migration charge has also resulted in **a significant competitive distortion** where a service that effectively has very low marginal costs associated with it (small administration fee) has dramatically weakened retail competition/options for already connected customers.
137. While Eircom reduced FTTH connection/migration charges to €100 in July 2020 it is clear this move was motivated by Eircom’s launch of FTTH in the Urban Commercial area where it does face infrastructure competition from certain operators. **This merely underlines the extent to which Eircom exploited its market power in setting initial connection charges at €270 in areas where it faced limited or no infrastructure** competition in the 300k. It also highlights ComReg’s mistake in permitting Eircom to charge €170 for both connections and migrations when it finally intervened in the market in manner that resulted in Eircom’s established retail base in the 300k footprint being protected by the excessive migration charge (financial barrier to switching).
138. It is now clear that, at a minimum, Eircom is willing to invest in FTTH roll-out for a connection/migration regime **of €100** and any final decision by ComReg **must at least ensure that such charges are capped at this level going forward**. Indeed it is highly probable that Eircom were willing to invest in FTTH in the 300k footprint if FTTH connection charges were set at the levels implied by ComReg’s proposal in consultation 17/26 (i.e. close to zero) as this is what would have guided its business model (which ComReg has access to) that informed its commitment to the government in this footprint.





139. Sky have little doubt that the business model that supported Eircom's commitment agreement to the government assumed little or no cost recovery through migration charges. It is therefore inexplicable why a regulator would introduce a charge on migration that bears no relation to cost, erects a financial barrier to switching and distorts competition. **It is notable that no such migration charges that bear no relation to costs are in place or were ever deemed necessary for WLR, FTTC or CGA broadband** – so what was so unique about FTTH?
140. Looking forward there is simply **no justification for anything other than a small administrative charge being applied to FTTH migration charges**. As highlighted in the AM report (see *Section 7.2.2*), the artificial barrier to switching imposed by D11/18, means that *"customers that switch supplier more often will give rise to materially higher wholesale charges for their RSP than customers who switch infrequently"*. There is no justification that can be offered by ComReg for advancing such an outcome when one of its objectives is to promote consumers interests in terms of removing barriers to choice. The current regime of excessive migration charges not only does not remove barriers to switching, **it artificially erects one** where there is no causal relationship between the true cost of switching and the current/permissible level of migration charges under D11/18. It is telling that once ComReg gave licence to Eircom to charge excessively for migration, this prompted SIRO to increase its own migration charges by more than 100% (albeit still significantly less than Eircom) shortly after the issuance of D11/18.
141. While erecting such a barrier to switching in any circumstances cannot be justified, it is particularly egregious where **Eircom currently face no price controls on the level of its FTTH rental pricing** which as ComReg observed meant that Eircom's recovery of FTTH investment was *"reasonably assured"*. As noted by AM the migration charge amounts to a *"losing bonus"* to Eircom Ltd, which is not legally or functionally separated along wholesale and retail lines and therefore can use the "bonus" to subsidise new customer acquisition further distorting competition in the market.
142. Sky would therefore strongly recommend that ComReg unwind the excessive migration charge which was implemented on the basis of what ComReg must now accept **was a false hypothesis that, to be fair, was informed by a market that was distorted at the time by a prohibitively high €270 connection charge for OAOs**. It is now clear that Eircom's strategy in the 300k footprint was designed **to restrict take-up for other operators while its own retail arm made early inroads to the market**. It





is equally clear that Eircom recognise driving agnostic take-up (i.e. not just Eircom retail) of its FTTH service can only be facilitated by lower connection charges which the investment can recover through ongoing rental charges. This is why Eircom has reduced the connection charge to €100 to coincide with its launch of Urban FTTH roll-out. Whatever case may have been considered in the past for high connection and anything other than very low migration charges **is clearly no longer applicable in the current market and is detrimental to competition and end-users.**

VIII. Overly complex cost modelling approach adds to a general concern around lack of transparency and appears to have been driven by the prejudicial positions taken in relation to so-called “commercial v non-commercial” Areas by ComReg

143. Sky continue to reserve its rights in relation to ComReg’s refusal to provide full access to the relevant costs models subject to strict confidentiality undertakings. Sky’s position on this matter is well understood by ComReg and we continue to be of the view that ComReg has not given due weight **to the prejudice caused to Sky in not having access to the models by comparison to potential prejudice caused to Eircom in the event that reputable companies would deliberately breach legally binding confidentiality commitments.** There are several categories of demand (because they are ComReg forecasts) and cost assumptions that are inexplicably deemed to be confidential without explanation³⁹.

144. Independent of this we would note that ComReg failed to provide a non-confidential version of the “Final Revised CAM” used by Cartesian to inform various aspects of the ANM merely stating that *“no non-confidential version of the Final Revised CAM exists”*⁴⁰. Sky would note that it is entirely within ComReg’s power to bring such a version into existence as production of any non-confidential model is simply an administrative iterative process upon completion of the confidential version.

145. Sky would further note that the unnecessarily complex modelling approach taken by ComReg does not lend itself to a transparent process. As noted by AM, access to the geospatial model was not accessible via typical Office packages like

³⁹ See detail in ALTO letter of 20 December 2019. Several points raised in this letter was not addressed by ComReg in its reply of 20 February 2020.

⁴⁰ ComReg email to Analysys Mason on 18 December 2020.





Microsoft Access, required specialist coding skills to be able to create the database and required specialist coding skills to be able to interrogate the database. **ComReg must be aware that it is highly unlikely stakeholders will have in-house capability/expertise in this area** (indeed it is quite probable that ComReg itself has not). Furthermore, following a training session by Cartesian with AM, it was apparent that explanatory documentation provided in the consultation process was deficient in explaining how to use the model.

146. Furthermore, AM noted the geospatial database is developed from road segments taken from the Revised CAM source database. As noted, ComReg did not meet a request for a non-confidential version of the Final Revised CAM. It is also notable that the geo-categorisation of premises using ComReg's arbitrary "definitions" of Urban Commercial, Rural Commercial and NBP-IA differed from the Revised CAM classification of "non-commercial" areas. There is therefore a complete disconnect between the Revised CAM and the Cartesian geospatial model in terms of defining these footprints.

147. The genesis of the overly complex modelling approach that was undertaken by ComReg **appears entirely grounded in the wholly inappropriate "definitions" ComReg has adopted to drive cost allocations** (mainly out of NBP-IA into Urban Commercial services like FTTC). As discussed in great detail in this response these "definitions" are not based on market definition analysis in accordance with the relevant laws and guidance. As such the modelling specifications that Cartesian have been forced to adopt appear to have been **driven by prejudicial and erroneous conclusions drawn by ComReg in relation to what constitutes "commercial" and "non-commercial" footprints**. Had ComReg adopted an approach to cost allocations in accordance with European Recommendations then much of the complexity (and the associated lack of transparency) evident in the Cartesian model could have been avoided.

Sky, 8 January 2020



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6: Vodafone Ireland Limited

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Vodafone Response to Consultation

Regulated Wholesale Fixed Access Charges

Review of the Access Network Model and Specification of the Price Control for Public Switched Telephone Network Wholesale Line Rental

Reference: ComReg Doc 20/101

Version: Non-Confidential

Date: 8/1/21

NON-CONFIDENTIAL

Introduction

Vodafone welcome the opportunity to respond to ComReg Doc 20/101 looking at the Access Network Model ('ANM'). In responding to this consultation, Vodafone has engaged the expertise of Frontier economics to undertake a critical assessment of the ANM model. In addition, Frontier has completed a review of the NGA and NGN Core models to further assess the level consistency with ANM, and to assess whether the scope of updates to the NGA and NGN core models are sufficient to ensure appropriate cost-based prices for FTTC services.

The detail of Vodafone's response is set out below and in the Frontier report. Please note the accompanying Frontier report forms part of this consultation response.

It is useful to first summarise Vodafone's key inputs to the ComReg process. Vodafone does not intend to comment on the validity of approaches and remedies established in the review of markets 3a and 3b. The summary comments and detail contained in this response focus solely on the modelling approach and on the need to ensure accurate, and up to date inputs, in modelling cost-oriented prices.

FTTC prices are materially overstated - Model corrections are required

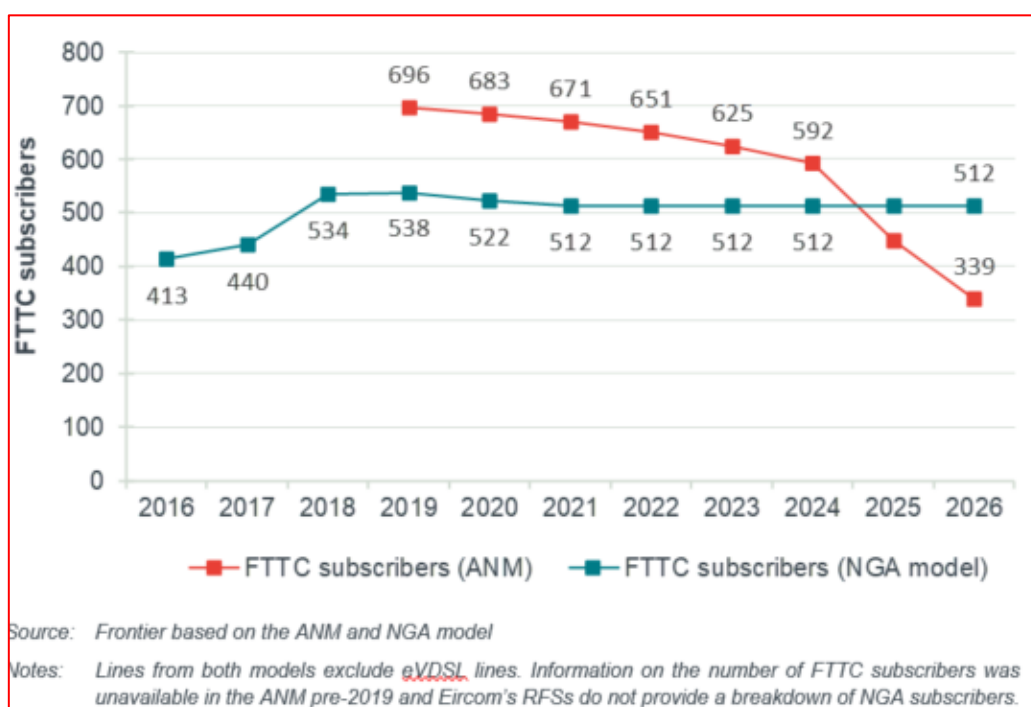
As detailed in section 2.2 of the accompanying Frontier review there are a number of material errors, which will lead to an overestimation of the cost-based price for FTTC services

- (a) **The ANM model is attributing FTTH only cost to CGA and FTTC.** This relates to CEI costs driven solely by Eircom's future FTTH urban rollout. FTTC and CGA customer services are not benefiting from rollout of FTTH and it is incorrect to allocate costs resulting from Eircom's urban FTTH rollout to these services. The additional costs of accelerated pole replacement and duct blockage clearance needed to rollout FTTH are proposed to be shared with FTTC and CGA and they are adjusted further upward through the application of the CEI uplift over the FTTH deployment period. This is incorrectly inflating prices for FTTC and CGA. ComReg should only allocate BAU costs to FTTC and CGA and must also remove the additional CEI uplift applied to FTTC and CGA during the years of FTTH deployment. Please see responses to questions below and section 2.2.1 of the accompanying Frontier report for further details.
- (b) **The model over allocates E-side capex costs to FTTC.** The costs allocated to FTTC include a disproportionate share of E-side CEI capital costs since they include direct FTTC costs (via the NGA Link) and a share of costs allocated to CGA via the SLU/LLU charge. Frontier estimate the impact would exceed €2.5m in 2019 alone. Please refer to question response below and section 2.2.2 of the Frontier report.

NGA and NGN Core Models must be updated with current data.

It is obvious that forecast data for FTTC and CGA is out of date and must be corrected. The use of inaccurate information further pushing cost into FTTC rentals up to June 2024 would clearly drive over-recovery.

- (a) **In addition to WACC other parameters and inputs must be adjusted.** It is essential that the opportunity is taken now to remove the inconsistency between models moving forward. The forecast FTTC base in the NGA model is well below the number of FTTC lines as of 2019 in the ANM model (and our view is 2020 data should be used in ANM). The forward-looking forecast of the FTTC base in the ANM model remains well above the forecast in the NGA model up to 2024.



Furthermore, as indicated in the expert report it is not reasonable to ignore new information that has come to light since the implementation of the NGA and NGN Code models. This is not an issue with the original forecasting as much of the detail of subsequent significant market changes would not have been known. That being the case, it is now very clear that line data, capex and opex forecasts do not reflect the true position and this leads to a material overstatement of FTTC pricing. This must now be corrected.

- (b) **This is consistent with International best practice and ComReg's own view.** As outlined in the Frontier report, international best practice is to update the models over time with the latest available information on efficient costs and demand. In the context of the ANM, ComReg itself proposes in paragraph 9 to "monitor cost recovery and intervene where necessary, where circumstances are materially different from those envisaged at the time...." These NGA and NGN Core models should be no different and updates are required.

The concerns highlighted by Vodafone are material

Vodafone estimates a significant impact on the proposed pricing for FTTC when the corrections and update outlined in this response and in the Frontier paper are taken into account. In total we estimate the VUA price needs to be adjusted from the €18.67 proposed to under €17 per subscriber per month. Approximately 32.5% of this adjustment relates to various changes in the ANM model and 67.5% is as a result of data updates, in particular those relating to FTTC demand and capex.

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Response to Consultation Questions

Question 1: Do you agree with ComReg's preliminary view that the price control obligation for PSTN WLR in the Regional Low-Level FACO Market should be based on cost orientation? Please provide reasons for your response.

Vodafone supports a cost-oriented approach and refer to our response to consultation to ComReg document 20/46 on the FACO market. A retail minus approach anchoring the pricing of mandated access of the SMP operator to retail activity provides too much scope for the SMP operator to leverage wholesale SMP into the retail market.

In paragraphs, 4.18 and 4.26 ComReg refer to the potential for upward pressure on the unit cost of copper services as FTTH deploys. It is important not to over exaggerate any such prospect, as it is probable that Eircom will sweat copper assets until eventual copper switch off.

In imposing a cost orientation obligation it is also important to reflect efficiently incurred costs and the model should avoid any allowance arising from historic underinvestment in any footprint.

The allowance for a 'reasonable' rate of return is critical. ComReg must avoid the situation where there are excessive returns and Vodafone refer to ongoing returns over recent years far exceeding the regulated WACC of 8.18% which, in and of itself, has been far too high for far too long. To be more specific, Vodafone urges ComReg to closely scrutinise Eircom's actual costs incurred during the lifetime of the price control period, to ensure that there is the appropriate level of recovery of costs by Eircom.

Question 2: Do you agree with ComReg's preliminary view that the monthly charge for PSTN WLR in the Regional Low-Level FACO Market should be set using the TD FAC approach based on Eircom's HCAs for the copper loop component and a BU-LRAIC+ approach for the active equipment? Please provide reasons for your response.

This is a reasonable approach. As outlined above the HCA cost based approach, in the context of the copper loop, should only allow Eircom to recover 'efficiently' incurred costs associated with the network.

Question 3: Do you agree with ComReg's preliminary view that the monthly supplemental charge for POTS based FTTC in the Regional Low-Level FACO Market should be set using the TD FAC approach based on Eircom's HCAs for the incremental copper access component and a BU-LRAIC+ approach for the active equipment? Please provide reasons for your response.

Overall this seems a reasoned approach. With regard to E-Side copper cost modelling in the context of FTTC we refer to our answer to Question 7 below.

Question 4: Do you agree with that the assumptions and approaches used to model demand in the Service Demand module? Please provide reasons for your response.

The overall approach appears reasonable however, as outlined in the Frontier report there are errors in the calculation of demand for FTTC, which need to be addressed.

As detailed in the Frontier analysis, the approach to estimating demand outside urban areas results in a significant reduction in demand being forecast in a number of rural exchanges, where an FTTH competitor is not currently present. We refer to section 2.2.3 of the accompanying Frontier paper.

ComReg has sought stakeholder views in relation to the timeline for copper switch off. The assumption of migration from copper to FTTH is realistic, nevertheless the model will clearly need to take into account some customers will be happy to remain on FTTC, and voice only customers in all areas urban and rural (including the IA), may be less likely to move. This will certainly impose delay for any plans to switch off copper. In our view an assumption that copper switch off could take place by 2030, as suggested in paragraph 5.40, is very optimistic.

In relation to data it is our view that more up to date active line data should be used. Paragraph 5.37 refers to data as at Q2 2019 and as stated in the paper there has since been significant market changes since that period. It is critical that actual data is reflected for 2020 as assuming publication of the ANM decision at the end of Q2 2019 the starting point for trending Service Demand module is then based on active line data that is already 2 years out of date. Notably, eircom pricing for connection to FTTH changed from Q3 2019 onwards. This stimulated activity in the FTTH wholesale market, and in addition, demand for all broadband has increased in 2020 because of the pandemic.

Question 5: Do you agree with ComReg's preliminary views that the Geospatial module is appropriate for dimensioning the access network (copper and fibre) of a HEO with Eircom's network presence in Ireland? Please provide reasons for your response.

We consider it critical that the footprints are monitored on an ongoing basis to ensure they remain an appropriate base for use in the costing models.

Question 6: Do you agree that the approaches to modelling costs in the Opex module are appropriate? Please provide reasons for your response

In relation to cost allocations, Vodafone refer ComReg to the response on the pricing of Eircom's Civil Engineering Infrastructure ('CEI') and the specific issue of common cost allocation. In paragraph 5.141 of this consultation ComReg refer to the 2018 pricing determination that corporate/common costs shall not be recovered from services sold to customers in uneconomic areas.

It is a very important distinction to make that the previous decision that no common cost apply to the Intervention Area was made a time when Eircom essentially had no management focus on rural areas. The basic service was delivered to customers without further investment. The NBP is now a

very significant line of business for Eircom. It will require major corporate investment to support this new revenue line, a fact that the cost modelling for CEI must take into account.

It is no longer valid to assume that the IA shall not incur significant common costs, as there will be very specific demand on the common resource to manage this specific area of the network. It is expected that Eircom will need to allocate resource from areas such as IT, transport, finance, legal and HR to manage engagement specific to the IA. Another example outlined in this paper is the full allocation of network rates cost to the commercial footprint without any contribution from the Intervention Area. This is not the correct approach. It is not appropriate that common costs are allocated to, and recovered solely from, wholesale prices in the commercial footprints.

It is expected long awaited cost model updates reflecting opex cost reductions since 2016 will have a significant downward impact on pricing. It is critical these opex reductions are reflected in all cost models including NGA models. As outlined in the Frontier report in Section 3.1 Eircom operating cost data from 2016 is used as the basis for forecasted FTTC- specific opex. The significant cost reduction programme undertaken since the development of the models is not reflected in the FTTC cost base or pricing.

Question 7: Do you agree with ComReg's preliminary views that the costing approaches adopted in the Capex module are appropriate? Please provide reasons for your response.

Vodafone refer to the Frontier assessment and in particular, the stated errors in the calculation of CEI costs attributed to FTTC services and the allocation of E-side capital costs to FTTC services.

CEI Cost Allocation

Vodafone has a serious concern in relation to allocation of Capex costs of FTTH to FTTC. It is incorrect to load FTTH rollout costs into FTTC pricing. We note the Frontier assessment highlights that it is inappropriate to recover any share of additional costs of FTTH rollout from FTTC and CGA.

This material issue relates to the allocation of additional costs resulting from Eircom's planned FTTH deployment including accelerated pole replacement and costs to deploy fibre in ducts and any associated sub-duct renewal and duct blockage clearance. In allocating costs, ComReg take the position that sub-duct renewal is an FTTH only recoverable cost. The additional costs of accelerated pole replacement and duct blockage clearance needed to rollout FTTH are proposed to be shared with FTTC and CGA and they are adjusted further upward through the application of the CEI uplift over the FTTH deployment period. This is inflating prices for FTTC and CGA.

The logic for this approach is that it is being carried out to make the network NGA ready however, the clear and undisputable fact is that accelerated pole replacement and clearance of ducts is solely related to rollout of the FTTH network. As stated in the Frontier assessment "this approach is conceptually incorrect". The CEI network supporting FTTC and CGA services is already funded by high wholesale pricing, with repeated unjustified and excessive price increases in 2015 and 2016, before finally becoming regulated in 2019. The pricing for FTTC and CGA services continue to remain

high following imposition of cost orientation obligations and WACC is just one example of that inflated cost.

The CEI network is FTTC and CGA ready in that it is supporting the services in its footprint and does not require incremental investment outside BAU. Vodafone believe an alternative approach is warranted:

- Recover additional costs relating to FTTH deployment from FTTH technology only
- BAU pole and duct costs should only be allocated to FTTC and CGA
- The proposed CEI uplift during the FTTH deployment period up to 2023 should not be allocated to FTTC

Vodafone note this is a material concern and refer, for an example, to paragraph 389 of the CEI consultation paper (ComReg 20/81) where ComReg assumes a large-scale pole replacement rate of 25% in urban areas during the FTTH rollout period. The PAM and DAM models calculate the cost of CEI feeding into the ANM Capex module. The example of the pole replacement figure in and of itself seems excessive but the fact that FTTC services are already supported on the FTTC network demonstrate the extent to which FTTC prices are artificially inflated and in effect will fund the rollout of FTTH.

E-Side Capital Cost Allocation

The ComReg consultation document has proposed that E-side capital costs are allocated between FTTH, FTTC and CGA services. A consequence of this approach if adopted is that it CEI cost also leads to over allocation of costs to FTTC. The detail is set out in Section 2.2.2 of the Frontier assessment. In summary, the costs allocated to FTTC include a disproportionate share of E-side CEI capital costs since they include direct FTTC costs (via the NGA Link) and a share of costs allocated to CGA via the SLU/LLU charge. Frontier estimate the impact would exceed €2.5m in 2019 alone. It is reasonable to expect that this will be adjusted in the final decision.

Question 8: Do you agree with ComReg's preliminary view that the assumptions made around FTTH connection costs in the ANM are appropriate? Please provide reasons for your response.

The approach appears reasonable.

Question 9: Do you agree with ComReg's preliminary views that the price for PSTN WLR should be based on a price per year for each year of the price control period based on the ANM modelled outputs for that year? Please provide reasons for your response.

In order to ensure predictability and certainty this seems a reasoned approach.

Question 10: Do you agree with ComReg's preliminary views that the supplemental charge for POTS based FTTC should be based on the incremental costs, using the same approach as for PSTN WLR? Please provide reasons for your response.

No further comment.

Question 11: Do you agree with ComReg's preliminary views that the prices for LLU and SLU should be derived based on the Urban Commercial Footprint and set by way of maximum prices (rather than the existing price points) as set out in Section 7? Please provide reasons for your response.

No further comment.

Question 12: Do you agree with ComReg's preliminary views that the maximum monthly charge for Dark Fibre should be based on fibre costs associated with Leased Lines access? Please provide reasons for your response.

No comment

Question 13: Do you agree with ComReg's preliminary view that the average monthly rental charge for CG SABB should be updated to reflect costs in the Regional WCA Market as well as to provide separate monthly rental prices for Regional and National Handover based on the maximum rates shown in Table 15 in Section 7? Please provide reasons for your response.

The costs in the Regional WCA market should be adjusted to take into up to date WCA market data.

Question 14: Do you agree with ComReg's preliminary view that the monthly rental charge for Line Share should be updated to reflect the latest available cost information resulting in a charge of no more than €0.62 per month? Please provide reasons for your response.

No comment

Question 15: Do you agree with ComReg's preliminary views that the price for FTTC based services should be updated in line with the approach at paragraph 6.82? Please provide reasons for your response.

We refer ComReg to section 3.1 of the Frontier paper. We do not agree that the updates should be limited to the WACC. It is essential that the NGA and NGN Core models be updated to reflect latest information. Failure to do this will overestimate prices for FTTC. The ComReg statement in paragraph 6.74 supports this view;

“Absent any change in the WACC updating the NGA cost model with revised cost inputs would lead to an increase in the modelled cost of FTTC based VUA rental across the price control period”.

It is completely appropriate to adapt models to take into account fundamental market changes. It is necessary to reflect accurate demand, changes in investment priorities reducing the need for FTTC specific capex requirements (cabinets, DSLAMs etc.) and changes in opex costs such as power, accommodation etc.

Our analysis indicates the changes to demand and capex alone would remove a further €1 from the monthly rental charge. This over recovery of cost does not align with ComReg objectives and is relatively simple to action.

Question 16: Do you agree with ComReg’s preliminary views that the price for CG Bitstream services should be updated in line with paragraph 6.86? Please provide reasons for your response.

We agree the WACC should be updated urgently and restate the points on data outlined above.

Question 17: Having outlined ComReg’s initial assessment of relevant factors for the costs associated with connections and migrations, do you consider that they are relevant and complete? Do you consider that any other factors are relevant? In response please provide well justified reasons and provide data to assist in ComReg’s consideration of this matter.

As ComReg will be aware the inflated cost of €270 and then €170 to connect constrained FTTH, however the reduction to €100 released demand. The quarterly report indicates connections moved from 127K at the end of Q2 2019 to 223K at the end of Q3 2020.

The issue of migration charges will soon become more significant as more customers come out of their initial FTTH contract. These customers should have a chance to avail of offers that are more competitive. There is no logic to explain to consumers a switching charge equal to the cost of initial connection.

A restrictive migration charge may constrain consumer choice in the FTTH footprint and it is therefore appropriate that the migration charge reflect the true cost of migration as is the case for other comparable wholesale FTTH services provided in the Irish market.

Question 18: Do you have any views as to the market impact of the existing FTTH connection and migration charges on the potential competition problems that ComReg identified in the WLA market? If you consider that the existing price control obligation is materially failing to address these problems, please provide supporting evidence and reasoning.

Please note comments above.

Question 19: Do you agree with ComReg's preliminary view that Eircom should, for PSTN WLR, provide annual information on key demand and cost metrics as part of its AFI submissions? Please provide reasons for your response.

Yes to ensure models are kept up to date.

Question 20: Do you agree with ComReg's preliminary view that Eircom should review the ANM annually for material / exceptional changes, and that such material/exceptional changes are brought to the attention of ComReg for consideration? Please provide reasons for your response.

Vodafone agree and this approach should be adopted now for the NGA and NGN core models. It is clear there have been material changes in the pattern of use of broadband services in Ireland meaning forecasts based on 2016 data are completely outdated. This includes the rollout in the rural commercial footprint, the rollout of FTTH in urban areas, the commencement of NBI and changing national patterns of use because of the pandemic.

Question 21: Do you agree with ComReg's preliminary view on the price control periods at paragraph 9.10? Please provide reasons for your response.

Vodafone do not agree unless ComReg alter the parameters and inputs in the NGA and NGN Core models to adjust demand, capex and opex requirements for FTTC in light of market changes. ComReg Decision D11/18 set the pricing up to June 2022 and there are no prices set for the remaining period proposed up to 2024.

If ComReg propose to direct a further price control period up to 2024 then updates must be made. This is consistent with ComReg's own principle in paragraph 9.8 of the consultation that ComReg will...

"monitor cost recovery and will intervene where necessary, where circumstances are materially different from those envisaged at the time of the ultimate decision on this paper or exceptional circumstances have otherwise arisen in order to ensure the continued cost-orientation of prices over the price control period".

The changes in the market since 2016 are materially different from those envisaged and must be accounted for in cost based FTTC prices.

Furthermore, ComReg must now commence the next market review to ensure no delays beyond the price control period.

Question 22: Do you have any comments on the Regulatory Impact Assessment and in your opinion are there other factors which ComReg should consider in completing its Regulatory Impact Assessment? Please provide reasons for your response, clearly indicating the relevant paragraph numbers to which your comments refer, along with relevant factual evidence supporting your views

No Comment

Question 23: Do you believe that the draft text of the proposed Decision Instrument in relation to the WLA and WCA Markets (ComReg Decision D10/18) is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

No Comment

Question 24: Do you consider that the draft text of the proposed Decision Instrument and Direction (in relation to ComReg Decision D11/18) is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

No Comment

Question 25: Do you consider that the draft text of the proposed Decision Instrument for the Regional Low-Level FACO Market, in the context of this Consultation, is from a legal, technical and practical perspective, sufficiently detailed, clear and precise with regards to the specifics proposed? Please explain your response and provide details of any specific amendments you believe are required.

No Comment

ENDS

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7: Analysys Mason Report on behalf of Sky

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Report for Sky Ireland

Review of ComReg's 2020 access network model and price control consultation



Ian Streule, Gilles Monniaux, Amal Asim

8 January 2021

Ref: 8883758899-497

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Abbreviations used

The following acronyms and abbreviations are used in this report.

Term	Meaning
AFI	Additional financial information
ANM	Access network model
BAU	Business as usual
BU	Bottom up
BULRAIC+	Bottom-up long-run average incremental cost plus
CEI	Civil engineering infrastructure
CG	Current generation
CGA	Current-generation access
DAM	Duct access model
EC	European Commission
EPMU	Equi-proportional mark-up
EVDSL	Exchange-launched VDSL
FAC	Fixed access call
FACO	Fixed access call origination
FWA	Fixed-wireless access
FTTC	Fibre to the cabinet
FTTH	Fibre to the home
HCA	Historical cost accounts
HEO	Hypothetical efficient operator
IA	Intervention area
ISDN	Integrated services digital network
LLU	Local loop unbundling
LRAIC+	Long-run average incremental cost plus
MDF	Main distribution frame
NGA	Next-generation access
NGN	Next-generation network
NRA	National regulatory authority
OAo	Other authorised operator
ODF	Optical distribution frame
PAM	Pole access model
POTS	Plain old telephone service
PSTN WLR	Public-switched telephone network wholesale line rental
RC area	Rural commercial area
RSP	Retail service provider
SABB	Standalone broadband

Term	Meaning
SLU	Sub-loop unbundling
SMP	Significant market power
TD	Top down
UC area	Urban commercial area
USO	Universal Service Obligation
VUA	Virtual unbundled access
WACC	Weighted average cost of capital

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1 Executive summary

1.1 Our review of ComReg's Consultation and Draft Decision and the associated models has identified significant areas of concern

In Figure 1.1 below, we present the significant areas of concern we have identified as part of our review of ComReg's Consultation and Draft Decision on regulated wholesale fixed access charges. In this table we also summarise the impact of each of those areas of concern, in terms of which services bear the burden of higher costs, and which services benefit.

Figure 1.1: Executive summary of significant areas of concern and their impact [Source: Analysys Mason, 2021]

Top-level areas of concern	Comment	Regulatory implications	Impact on services and prices	Refer section
Wholesale access prices have not declined despite a major reduction in the WACC, with the exception of PSTN WLR, which is mainly used for Eircom's regulatory accounting	The benefits of the lower WACC are largely overcome by the other changes introduced by ComReg, leading to a situation where ComReg is introducing amongst the highest LLU and SLU price in Europe.	<ul style="list-style-type: none"> • Weakens the predictability of regulation • Does not provide regulatory certainty • Introduces distortion and undermines competition as LLU/SLU and PSTN WLR are used by different operators • Further exceeds the EC's guide rails for LLU prices 	<ul style="list-style-type: none"> • Higher fixed access prices than would otherwise be the case • Subsidy of FTTH by FTTC but not by PSTN WLR • Irish LLU prices are not harmonised with EC internal market objectives 	3.1 6.3.2 6.4.1

Top-level areas of concern	Comment	Regulatory implications	Impact on services and prices	Refer section
The choice of costing methods for LLU/SLU and PSTN WLR is discriminatory	<p>Identical assets are costed</p> <ul style="list-style-type: none"> at a higher base when used for LLU/SLU for NGA (FTTC) at a lower base when used for PSTN WLR (for PSTN and regulatory accounting). 	<ul style="list-style-type: none"> Does not promote competition Is not technology neutral Contrary to the EC Recommendation on non-discrimination and costing Means that the hypothetical efficient operator (HEO) developed for regulation has higher costs (prices) than the actual incumbent operator 	<ul style="list-style-type: none"> FTTC wholesale prices are higher PSTN WLR prices are lower Discrimination between prices when the same assets are used for different services 	<p>3.2</p> <p>6.3.2</p> <p>6.4.1</p>
The treatment of common costs distorts competition	<p>The approach taken neglects the nature of common costs and does not follow BULRAIC+ cost-recovery principles or the EC Recommendation. Furthermore, the approach is reliant on ComReg decision D11/18 – an out-of-date decision which has not been reviewed for the latest costs and prices. In particular, the basis for the approach in the D11/18 decision – a WLR constraint – is not applicable today. Finally, the approach neglects the ability for PSTN WLR prices to support a share of common costs allocated to intervention area (IA) lines.</p>	<ul style="list-style-type: none"> Copper lines in the IA make no contribution to the common costs supporting those lines, distorting efficient investment and competition in the UC footprint, and distorting competition in the IA area Does not provide regulatory certainty due to being based on the unrelated approach of DECC to delineate the IA for FTTH subsidy Not consistent with EC 2013 Recommendation Does not promote competition between PSTN and FWA/mobile services in the IA 	<ul style="list-style-type: none"> Higher FTTC prices Lower WLR prices in the Regional Low-Level FACO Market Lower government subsidy required for NBI Lower retail prices in the IA Higher CEI prices in the UC and RC areas Lower CEI prices in the IA 	<p>3.3</p> <p>4.1.1</p> <p>6.3.3</p>

Top-level areas of concern	Comment	Regulatory implications	Impact on services and prices	Refer section
Definition of 'non-commercial' areas is based on D11/18	Based on an old decision, which was informed by the out-of-date Revised CAM. ¹	<ul style="list-style-type: none"> • Does not comply with cost orientation • Not consistent with EC 2013 Recommendation 	<p>Used to justify approach to common cost allocation:</p> <ul style="list-style-type: none"> • Higher FTTC prices • Lower WLR prices in the Regional Low-Level FACO Market • Lower government subsidy required for NBI • Lower retail prices in the IA • Higher CEI prices in the UC and RC areas • Lower CEI prices in the IA 	3.3.4 6.1
Common costs are incorrectly specified	<p>Network rates and variable common costs are not treated correctly. More generally, the level of common costs is based on Eircom's choices, over multiple years of AFIs, and benchmarks indicate Eircom's identification of common costs is very high.</p>	<ul style="list-style-type: none"> • Lacks regulatory objectivity • Does not promote competition or interests of end users due to the way common costs are identified and then allocated by ComReg 	<ul style="list-style-type: none"> • Higher FTTC prices • Lower WLR prices in the Regional Low-Level FACO Market • Lower retail prices in the IA 	3.3.5 5.3.6 5.3.7 6.3.4
Repair and maintenance (R&M) costs are not determined based on footprint or line length	<p>ComReg has chosen not to assess line fault by region despite having access to a dataset on USO statistics. As longer, more faulty lines in the IA are removed, correspondingly high costs are not avoided. Costs are not identified as related to the footprint which causes those R&M costs.</p>	<ul style="list-style-type: none"> • Does not comply with cost causation • Does not promote efficient investment in commercial areas • Does not support interests of end users in commercial areas 	<ul style="list-style-type: none"> • Urban commercial (UC) lines pay for the higher costs of rural and IA lines • Higher FTTC prices • Lower WLR prices in the Regional Low-Level FACO Market • Lower retail prices in the IA 	3.4

¹ The regulatory accounts show that in fact the WLR service was significantly over-recovering costs up to around 2018

Top-level areas of concern	Comment	Regulatory implications	Impact on services and prices	Refer section
The latest NGA model used for pricing FTTC has major consistency problems	The latest NGA model makes implausible and likely impossible assumptions on the use of EVDSL from the ANM model, and over-dimensions the efficient amount of EVDSL equipment needed. The latest NGA model assumes copper exists in perpetuity whereas the ANM model assumes copper is completely replaced in the coming years.	<ul style="list-style-type: none"> • Is not based on objective or consistent regulation, leading to regulatory uncertainty • Allows inefficient levels of costs, providing potential over-recovery for Eircom • Does not support competition between services, technologies and wholesale versus retail supply 	<ul style="list-style-type: none"> • Higher FTTC prices 	3.5
The latest NGA and NGN models used for pricing FTTC are out of date	Various inputs in the NGA model are based on Eircom sources from 2016 or earlier.	<ul style="list-style-type: none"> • May lead to over-recovery of costs by Eircom • Models inefficiently high levels of costs • Does not support competition between services, technologies and wholesale vs retail supply 	<ul style="list-style-type: none"> • Higher FTTC prices 	3.5.5 3.5.6
The latest decline in Eircom's pay and non-pay costs is not reflected in the models	Latest accounting information available indicates that Eircom has continued to reduce its costs.	<ul style="list-style-type: none"> • Does not promote effective competition • May lead to over-recovery and excess returns for Eircom 	<ul style="list-style-type: none"> • Higher regulated prices 	3.6
The ANM assumes FTTC is available at 98% of exchanges	In practice only 81% of exchanges offer NGA.	<ul style="list-style-type: none"> • Unit cost of FTTC footprint includes too many exchange building costs and dilutes economies of scale across too many areas 	<ul style="list-style-type: none"> • Higher FTTC prices 	5.1.1
Approximately 19% of Eircom's active lines do not contribute to common costs over the price control period	This is due to ComReg's choice of the common cost allocation method.	<ul style="list-style-type: none"> • Does not support end-user interests, as an annual average of ~266 000 end users in the IA benefit from not contributing to common costs, while end users in the commercial areas pay more to compensate 	<ul style="list-style-type: none"> • Higher FTTC prices • Lower PSTN WLR prices • Lower retail prices in the IA 	5.1.2

Top-level areas of concern	Comment	Regulatory implications	Impact on services and prices	Refer section
The scaling of opex per line in the ANM has grossly overstated the opex per copper line compared to opex per FTTH line	<p>The opex scaling is built using adjustments to Eircom's AFIs. Eircom's AFIs allocate a similar level of opex per line to copper and fibre (EUR25–28 before efficiency adjustments).</p> <p>In the ANM, opex per line is implausibly six times higher for a copper line than a fibre line (EUR17 compared to EUR2.8 per line after efficiency adjustments, or EUR42.3 compared to EUR6.4 for all non-common opex).</p>	<ul style="list-style-type: none"> • Lacks regulatory objectivity • Does not promote effective competition • Introduces cross-subsidy from copper to fibre, which is contrary to efficient investment incentives, and has implications for DECC's national broadband plan 	<ul style="list-style-type: none"> • Regulated copper network prices including FTTC are too high • Eircom's FTTH deployments in the rural commercial (RC) area are being subsidised by copper prices, to the detriment of NBI and the subsidy required from the Irish Government 	<p>5.3.8</p> <p>5.3.9</p> <p>5.3.10</p> <p>5.3.11</p>
E-side copper assets are wrongly allocated to SLU and POTS charges	<p>The cost allocation matrix for SLU does not reflect cost causality because it includes E-side civil works when SLU does not, by definition, include any E-side assets.</p> <p>In addition, the E-side costs are double recovered due their inclusion in both the SLU and in the supplementary POTS charge for FTTC.</p>	<ul style="list-style-type: none"> • Does not reflect cost causality • Incorrectly allocates costs 	<ul style="list-style-type: none"> • FTTC prices are too high 	<p>5.5.3</p> <p>6.2.1</p> <p>6.3.1</p> <p>6.4.1</p>
Assumption of 85% opex per line for SLU has not been estimated correctly	<p>This assumption is arbitrary and unjustified. It is incorrectly obtained from a capex ratio for relevant SLU assets.</p>	<ul style="list-style-type: none"> • Unit cost of SLU is too high, by around EUR1 per month 	<ul style="list-style-type: none"> • Higher FTTC prices • Arbitrary gain for Eircom to recover an unfairly high proportion of opex from FTTC buyers 	<p>5.5.4</p>
Accelerated pole replacement is mainly caused by FTTH in the IA, but this is disproportionately allocated to copper and urban services	<p>The approach to allocating pole-related costs during the price control period allocates too much of the cost to copper and urban services.</p> <p>There is an explicit adjustment to pole replacement which results in FTTH obtaining a discount for 'negative poles' because mainly FTTC (copper) has paid for the accelerated roll-out.</p>	<ul style="list-style-type: none"> • Does not reflect cost causality • Distorts competition • Does not encourage efficient investment 	<ul style="list-style-type: none"> • Higher FTTC prices • Subsidy of FTTH by FTTC 	<p>5.5.7</p> <p>5.5.8</p>

Top-level areas of concern	Comment	Regulatory implications	Impact on services and prices	Refer section
Proposed FTTH connection asset lifetimes are too low	Benchmarks from other NRA FTTH costing models shows that all other NRAs assume final-drop assets have the same lifetime as street distribution assets.	<ul style="list-style-type: none"> • Lacks regulatory objectivity • Does not promote competition in the FTTH retail market 	<ul style="list-style-type: none"> • FTTH connection and migration charges are too high • Potential cost over-recovery by Eircom 	7.1.1
Approach to FTTH connection cost recovery	<p>The proposed connection and migration charges do not reflect the distribution of economic benefits. Customers who switch suppliers more often will give rise to materially higher wholesale charges for their suppliers than customers who switch infrequently</p> <p>In addition, benchmarks show other EU regulators take a very different approach, with a significant proportion of the final-drop costs recovered from monthly rentals.</p>	<ul style="list-style-type: none"> • Does not promote competition in the FTTH retail market • Does not support the interests of end users, as competitively active users subsidise competitively inactive users 	<ul style="list-style-type: none"> • FTTH connection and migration charges are too high • Potential cost over-recovery by Eircom 	7.1.2 7.2.1 7.2.2

1.2 Our simple high-level quantitative tests using the models suggest that cost-based prices should be substantially lower

We have also undertaken some quantitative tests with the ANM and latest NGA model to estimate revised regulated prices for FTTC-based VUA. These tests reveal that FTTC VUA cost-based prices would be substantially lower if the same costing basis was used for different services, or if corrections were made to the calculations implemented by the models.

It should be noted that these tests are indicative, because:

- we do not have access to the confidential (exact) models used by ComReg, and
- we have not attempted to develop adjustments for all of our suggested improvements, instead focusing only on those which are relatively simple to implement.

The quantitative tests are tabulated below:

Test 1 – valuing copper assets on the same basis for LLU/SLU as for PSTN WLR

When we switch the ANM between the valuation and depreciation method used for LLU/SLU ('Bottom-up tilted annuity') and used for PSTN WLR ('Top-down HCA') we obtain LLU/SLU results which are 29–30% lower. This is a substantial percentage reduction (which can only be derived for national lines in the model), and when the same percentage reduction is applied to 2021 FTTC-based VUA it leads to an estimated EUR3.52 lower cost per line per month (19% lower than the proposed price).

This significant reduction, shown in Figure 1.2, highlights the discrimination arising from using a different cost base for identical assets when used for PSTN WLR compared to LLU/SLU inputs to FTTC.

		EUR per month
Bottom-up tilted annuity costs	LLU / SLU in 2019	17.49 / 14.97
Top-down HCA costs	LLU / SLU in 2019	12.49 / 10.44
Percentage reductions	LLU / SLU in 2019	29% / 30%
Gives assumed reduction to inputs of NGA	LLU / SLU in 2021	29% / 30%
Implied reduction to NGA inputs	LLU / SLU in 2021	3.64 / 3.14
Reduction in monthly price weighted by mix of LLU:SLU	77:23 mix	3.52
Resulting FTTC VUA charge		15.10
Percentage reduction	compared to proposed EUR18.62	19%

Figure 1.2: Impact in the ANM and NGA model of valuing copper assets on the same bases for LLU/SLU as for PSTN WLR [Source: Analysys Mason, 2021]

Test 2 – applying some simple changes to the costing models

In Figure 1.3 below, we summarise a number of changes we have made to the ANM and NGA model and the material (EUR1.33 per line per month impact on the results).

We consider that the final result would be further reduced by correcting other flaws we have identified in this report (but we have not attempted to rebuild or correct in the model), such as those relating to the distribution of opex by copper and fibre lines, in Sections 5.3.8, 5.3.9 and 5.3.10.

	Refer to		EUR per month
NGA model 2021 FTTC-VUA cost output		Compared to EUR18.62 in ComReg 20/101	18.64
ANM model 2021 urban commercial cost output		LLU / SLU	13.53 / 10.57
SLU opex factor 0.85 reduced ² to 0.68	5.5.4	LLU / SLU	13.53 / 9.47
Network rates moved from common to indirect costs ³	5.3.6	LLU / SLU	13.21 / 9.25
Distributing residual common costs to all lines ⁴	3.3	LLU / SLU	12.78 / 8.96
Efficiency adjustment to EVDSL DSLAMs	3.5.4	LLU / SLU	minus 0.50 / 0
Overall result		LLU / SLU	12.28 / 8.96
Implied reduction to NGA inputs		LLU / SLU	1.25 / 1.61
Reduction in monthly price weighted by mix of LLU:SLU		77:23 mix	1.33
Resulting FTTC VUA charge			17.29
Percentage reduction		compared to proposed EUR18.62	7%

Figure 1.3: Impact in the ANM and NGA model of applying a number of changes to the models [Source: Analysys Mason, 2021]

1.3 In our work to assist Sky in this consultation we conclude that the geospatial model has not been sufficiently prepared for consultation and misses out necessary information

In addition to the areas of concern we have listed above, we have, on behalf of Sky, undertaken to open and review the costing calculations and the geospatial database of the ANM. Our opinion of the geospatial database is that it has not been sufficiently prepared for consultation and misses out necessary geographical information, for the following reasons:

- it is not accessible using any typical office package such as Microsoft Access
- it requires specialist coding skills to be able to create the database

² Model change: ANM_Capex, Input_Other: setting routing factor to new value

³ Model change: ANM_Opex, Input_AFI_Costs: setting Rates to zero and adding to Indirect Network Management

⁴ Model change: ANM_Opex, Calc_Opex_Apportionment: rebuilding the formulae in lines 57 – 101. For this change, we anticipate the impact would be larger if Network Rates were kept as a common cost, and/or if other changes were made such as redistributing line-related opex according to line length, faults and copper/fibre share, and/or if common costs were treated with an EMPU

- it requires further, different coding skills to be able to interrogate the database
- the documentation provided is insufficient to be able to restore and interrogate the database
- Analysys Mason's access network and database experts required a training session of one hour with Cartesian to be able to understand how to access the database, and this training session immediately revealed that additional commands and documentation were needed to explain how to use the database⁵
- it does not contain any coordinate information and is therefore an abstract multi-dimensional database which cannot be situated or mapped out for any real geographical location in Ireland.

Furthermore, in our understanding, the geospatial database is developed from road segments taken from the Revised CAM source database.

The ANM has also developed a new geo-categorisation of premises⁶ in a non-transparent and non-auditable manner. This is different from the geo-categorisation used by ComReg previously to identify 'non-economic' premises. This different geo-categorisation is important because ComReg relies on previous analysis conducted with the Revised CAM to reach conclusions on 'non-economic' areas, and these conclusions therefore do not relate to the new geo-categorisation of UC, RC and IA lines in the ANM.

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⁵ In addition to our consulting colleagues, one of Analysys Mason's internal IT systems developers had to be involved in order to open the database, which is extremely unusual in the context of a public consultation. It is relevant to know if ComReg's own non-IT staff members have been able to check the code and calculations used to generate the access network.

⁶ Urban commercial (UC), rural commercial (RC) and intervention area (IA)

2 Introduction

On 22 October 2020, ComReg published document ComReg 20/101: Consultation and Draft Decision on its Review of the Access Network Model and Specification of the Price Control for Public Switched Telephone Network Wholesale Line Rental (the '2020 ANM pricing consultation'). Analysys Mason has been commissioned by Sky Ireland to produce a report analysing the consultation document and proposed regulation.

The remainder of this document is laid out as follows:

- Section 3 presents the main areas of concern raised by ComReg's proposals
- Section 4 includes comments on Section 4 of 2020 ANM pricing consultation: "Price Control and cost methodologies for PSTN WLR in the Regional Low-Level FACO Market"
- Section 5 includes comments on Section 5 of 2020 ANM pricing consultation: "Cost Modelling Approach: Access Network Model"
- Section 6 includes comments on Section 6 of 2020 ANM pricing consultation: "Pricing approach for existing access services"
- Section 7 includes comments on Section 8 of 2020 ANM pricing consultation: "FTTH Connections"
- Section 8 includes comments on Section 9 of 2020 ANM pricing consultation: "Other regulatory measures".

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3 Main areas of concern

This section sets out in principle the major areas of concern we have identified as part of our review of ComReg's Consultation and Draft Decision on regulated wholesale fixed access charges. The remaining sections of this document provide responses to the specific questions raised by ComReg as part of the consultation. We present these areas of concern in the following six subsections:

- Proposed cost-oriented prices will be amongst the highest in Europe, with price rises which undermine efficient investment incentives and distort competition, as shown in Section 3.1.
- ComReg's interpretation of the EC NGA recommendation is biased against FTTC and discriminatory in favour of PSTN WLR, as shown in Section 3.2.
- Common costs not recovered from all services distort competition in each distinct footprint, as shown in Section 3.3.
- The ANM fails to respect cost orientation and takes an inconsistent approach to allocating various costs, as shown in Section 3.4.
- The latest NGA and NGN models used for pricing FTTC services have major consistency problems and are not up to date, as shown in Section 3.5.
- Operating costs and common costs are out of date and not reflective of an efficient operator, leading to over-recovery of efficiently incurred costs by Eircom, as shown in Section 3.6.

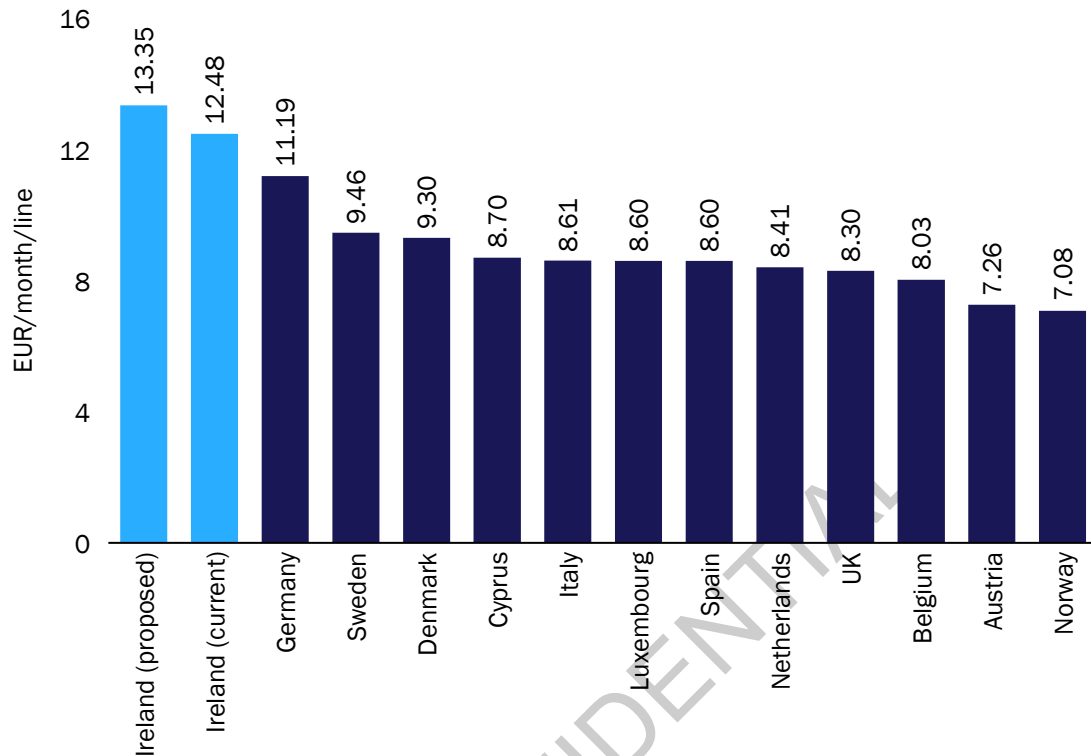
3.1 Proposed cost-oriented prices will be amongst the highest in Europe, with price rises which undermine efficient investment incentives and distort competition

3.1.1 Benchmarking shows that ComReg is introducing amongst the highest LLU and SLU wholesale charges in Europe, despite having one of the lowest WACC figures

Many regulators in Europe have regulated wholesale fixed access prices of incumbent fixed operators with significant market power (SMP), and ComReg's current consultation and draft decision follows previous decisions by itself and peer national regulatory authorities (NRAs).

However, benchmarking shows that ComReg is planning to introduce amongst the highest wholesale fixed access prices in Europe, despite now having one of the lowest costs of capital (WACC) figures applying to the associated costing model. Figure 3.1 below highlights that Ireland's regulated local loop unbundling (LLU) price is already significantly higher than many other West European nations, and the new proposed prices would be even higher. It is important to emphasise that Ireland's current rate of EUR12.48 was calculated using a WACC of 8.18%, and the proposed rate of EUR13.35 is calculated with a substantially lower WACC of 5.61%.

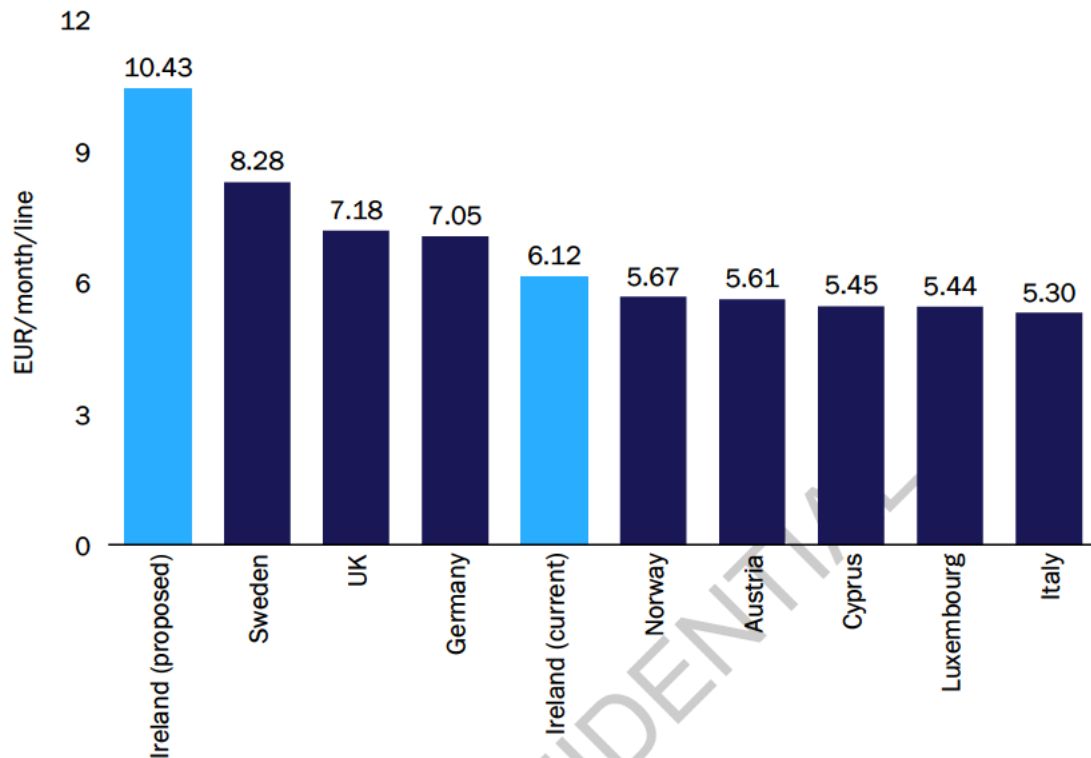
Figure 3.1: Benchmark of LLU prices in 2020 [Source: Regulator and operator websites, and ANM consultation, 2020]



This comparison with other EU countries is even more stark when sub-loop unbundling (SLU) is considered (see Figure 3.2 below). Ireland is moving from a mid-range SLU price of EUR6.12 (assessed with a WACC of 8.18%) to a proposed price of EUR10.43, which is 67% higher than the average of other nations (i.e. 67% higher than EUR6.25). Without the WACC reduction from 8.18% to 5.61%, the SLU price would be around EUR11.10, nearly double the previous price and other benchmark prices.

A near doubling of the SLU cost-based price raises significant questions regarding the suitability of the entire costing and pricing approach adopted by ComReg.

Figure 3.2: Benchmark of SLU prices in 2020 [Source: Regulator and operator websites, and ANM consultation, 2020]



In relation to PSTN WLR prices, ComReg's proposed price of EUR16.07 represents a slight decrease from the current price of EUR16.59 (see Figure 3.3 below). The price decrease for PSTN WLR and simultaneous increase of LLU and SLU raises clear evidence of the consequent distortion of competition and investment incentives that the proposed price changes will have on buyers of LLU and SLU compared to buyers of PSTN WLR, given that identical assets are used to deliver SLU and LLU and that these assets also used to deliver PSTN WLR.

In relation to this distortion of competition and investment, it is important to note that:

- the only buyers of SLU (which has the largest price rise) are competing access seekers purchasing FTTC, such as Sky and Vodafone
- similarly, the main buyers of LLU are access seekers such as Sky and Vodafone
- the main buyer of PSTN WLR (which has the lowest price rise) is the notional separated regulated accounting business of Eircom.

Figure 3.3: Benchmark of PSTN WLR prices in 2020 [Source: Regulator and operator websites, and ANM consultation, 2020]

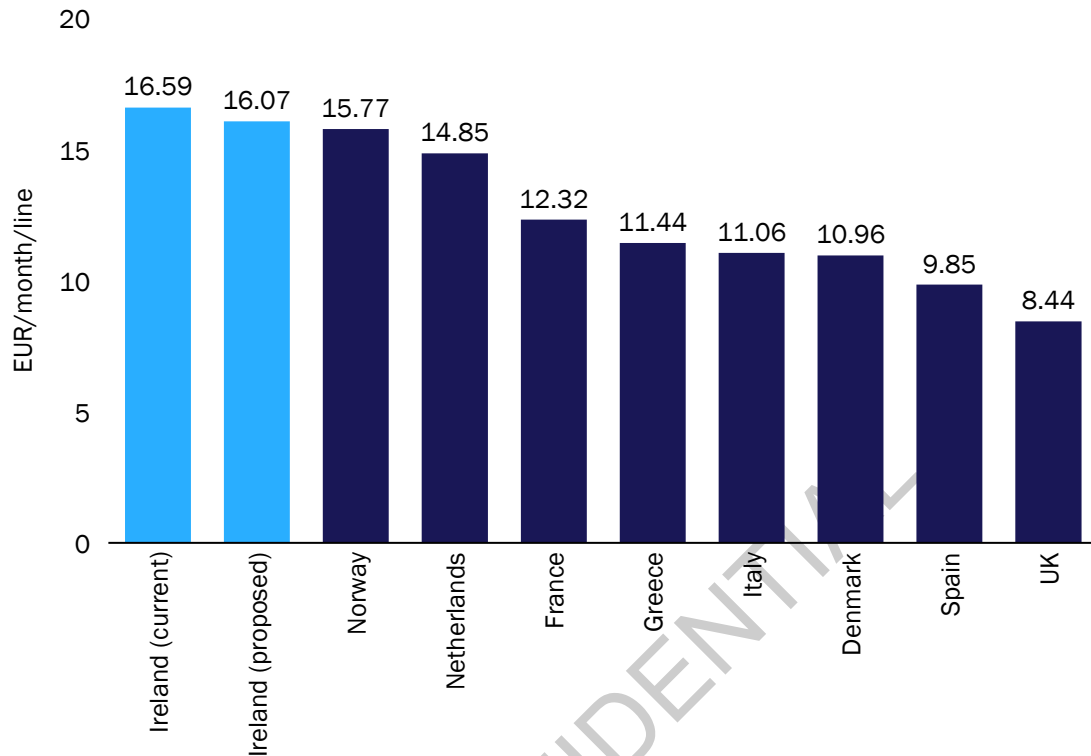
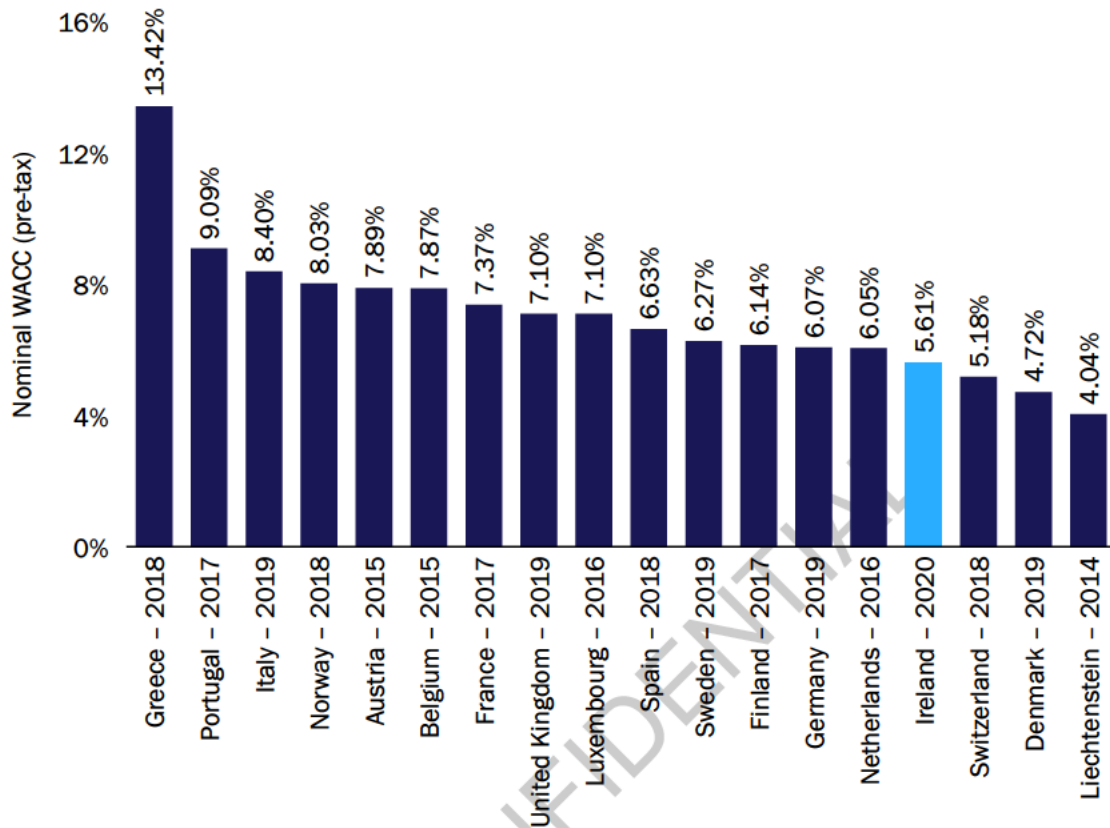


Figure 3.4 below highlights that the regulatory WACC in Ireland is amongst the lowest in the Eurozone. The only lower WACCs are seen in Denmark and the two non-EU, financially wealthy states of Liechtenstein and Switzerland. Changing the value of the WACC has a significant impact on the unit costs calculated by a fixed access network cost model, due to the contribution of a large asset value and the long lifetime of assets. The WACC has a direct causal link to the cost-based prices, whereby a lower WACC leads to lower calculated costs, however in Ireland it is evident that the lower WACC effect has been counteracted by the ANM which calculates substantially higher access network costs in ComReg's proposed prices.

Figure 3.4: Benchmark of nominal WACC (pre-tax) for fixed telecoms, including recent model updates

[Source: BEREC, 2019, Analysys Mason, 2021]

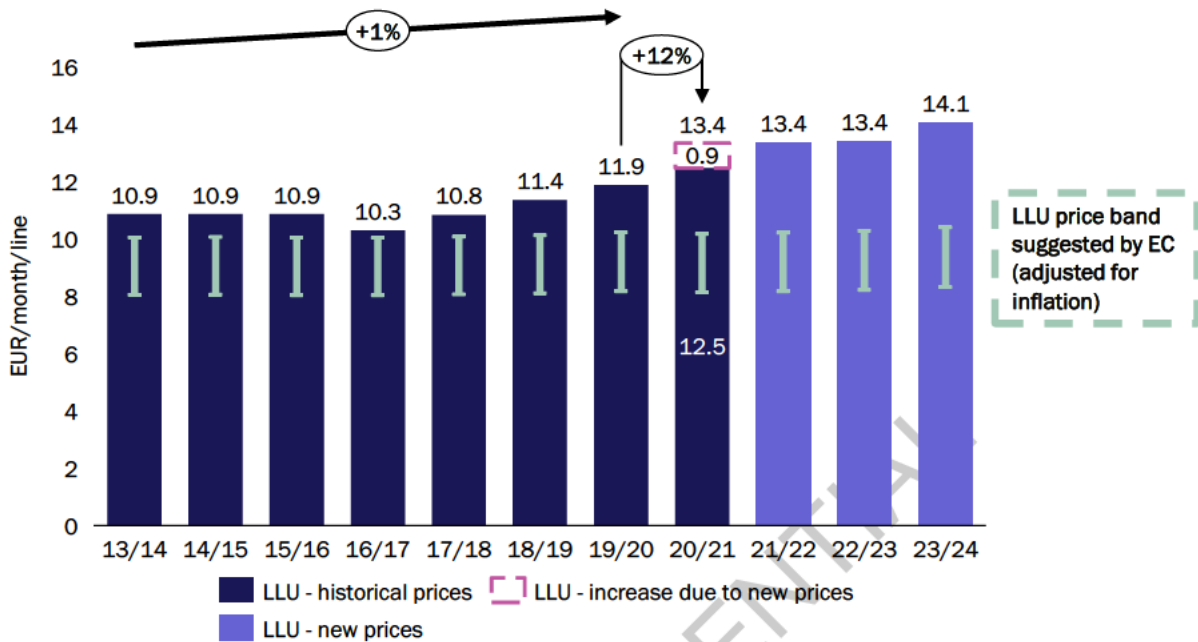


3.1.2 LLU prices in Ireland have persistently remained higher than the anticipated range set by the EC, and if the proposed prices are applied this would further widen the gap

In 2013, the EC anticipated a EUR8–10 price band for LLU services.⁷ Figure 3.5 below shows that even after adjusting this band for inflation, the LLU prices in Ireland have always remained higher than the band, and the proposed prices would be further from the Commission's range. This suggests a divergence between the intentions of the EC, and the application of the recommended principles for costing and pricing by ComReg, despite the requirement for ComReg to take "utmost account" of the EC recommendations.

⁷ Paragraph 41 of the Commission Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment

Figure 3.5: LLU prices over time (including monthly fault repair charge of 0.96 for historical prices and 0.63 for proposed new prices) [Source: ComReg pricing decisions and consultations, European Commission, and EIU (inflation)]

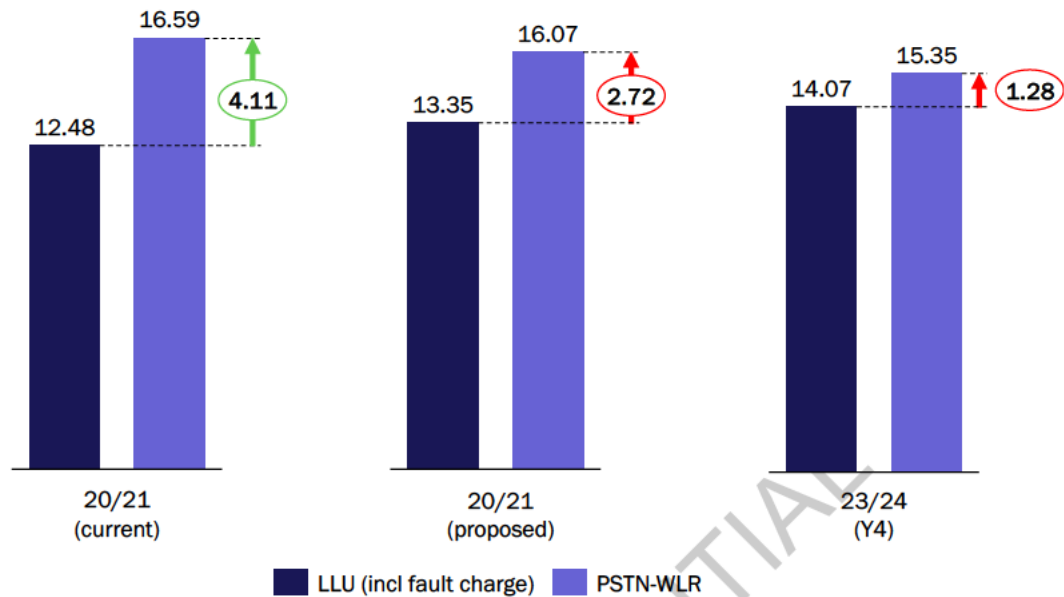


3.1.3 The margin between LLU and PSTN WLR is being heavily squeezed by the proposed prices, leading to distortion in the ladder of investment between passive and active wholesale access

A wholesale access seeker must make decisions around its ladder of investment, in particular whether it invests in order to be able to use local loop unbundling (LLU), e.g. for FTTC NGA, or whether to rely on more active wholesale services such as PSTN WLR. The same (identical) passive access network assets that are used to deliver LLU are used to deliver the PSTN WLR service, i.e. the copper loop and exchange equipment. Therefore, the difference in price between LLU and PSTN WLR influences the access seekers' decisions on efficient levels of investment and choice of wholesale product.

The current regulated prices 'provide' access seekers with a margin of around EUR4 per line per month between LLU and PSTN WLR. This margin is effectively provided to access seekers to develop or purchase active services through investment decisions, including both investment in active equipment and the development of competitive service propositions needed to sell services to end users. The proposed prices reduce this margin immediately to EUR2.72, which then further declines to EUR1.28 per line per month, as shown in Figure 3.6 below.

Figure 3.6: Margin squeeze based on LLU and PSTN WLR prices [Source: ComReg pricing decisions and consultations]



This reduction represents a significant squeeze in the profitability margin between passive and active wholesale products, and highlights that fundamentally divergent principles are being applied to the costing of LLU and PSTN WLR in ComReg's proposed approach. This reduction in the margin changes efficient investment signals and detrimentally affects the competitive landscape for other operators competing against the SMP operator Eircom. This is due to the fact that Eircom's competitive positioning is not exposed to the large price increases proposed for LLU and SLU but instead benefits from the proposed reduction, and in some areas, deregulation of PSTN WLR.

This reduction also highlights that if Eircom Retail was required to purchase LLU/SLU instead of PSTN WLR as the fundamental basis of its narrowband access regulatory accounting, then there would be clear and immediate evidence of substantial cost over-recovery in the narrowband segment. The approach to use PSTN WLR as the basis for narrowband access regulatory accounting and to regulate it on a different costing principle⁸ than LLU/SLU is therefore discriminatory and contrary to ComReg's regulatory objectives.

⁸ Noting that majority part of the PSTN WLR market is proposed to be de-regulated

3.2 ComReg's interpretation of the EC NGA recommendation is biased against FTTC and discriminatory in favour of PSTN WLR

3.2.1 ComReg's costing of LLU/SLU and PSTN WLR uses discriminatory costing methods for identical assets depending on the service in use

Efficient investment decisions around wholesale entry and operations at active versus passive levels will be affected by the narrowing margins between active and passive prices, as shown in Figure 3.6 above.

Decisions around entry and operations in the FTTC VUA space, to offer next-generation services using next-generation technology, will also be affected by the difference between PSTN WLR and LLU/SLU. This is because PSTN WLR is a valid wholesale product to offer old-generation services, but PSTN WLR pricing is not used as the basis on which to add on 'NGA' components to the same identical copper loop assets. Buyers of FTTC VUA are forced to purchase LLU and SLU which ComReg proposed to regulate on a totally different cost basis than the one used for PSTN WLR. This distortion arises as a result of ComReg applying different costing methods to identical passive assets when used for LLU/SLU and PSTN WLR.

The application of a different costing method to the same asset when used for different services (e.g. voice, broadband), supported by different technologies (PSTN, ADSL, VDSL), is neither technology nor service neutral, and does not meet ComReg's objectives for promoting competition. This is particularly evident in ComReg's use of a different costing basis for identical assets when used by Eircom to produce external wholesale services (LLU, SLU, FTTC) compared to when they are used to produce internal retail services (PSTN WLR in the wholesale/retail separated accounts of Eircom).

The proposed wholesale prices for LLU and SLU are calculated in the ANM based on the costs of the copper network serving ~815 000 lines in the urban commercial (UC) area. LLU and SLU wholesale prices are the key inputs to FTTC purchased by access seekers and are not used by any material number of other access lines, because Eircom's separated accounts use PSTN WLR as the transfer pricing basis, not LLU or SLU.

LLU and SLU prices are calculated on a BULRAIC+ basis for non-reusable assets (i.e. assets which cannot be re-used for NGA such as copper cables), with TD FAC for reusable assets (i.e. assets which can be re-used for NGA such as ducts and poles).⁹ The objective of modelling BULRAIC+ for non-reusable assets is to "encourage the deployment of alternative NGA infrastructure"¹⁰ which means that the full replacement cost of the equipment is modelled. This full replacement cost approach was also adopted in the Revised CAM which assumed that FTTC would be the NGA technology in perpetuity.

PSTN WLR services are also costed in the ANM and it is proposed that they should be price regulated in the Regional Low-Level FACO Market, which includes ~170 000 of the UC copper connections (in

⁹ Paragraph 6.49 of the Consultation and Draft Decision

¹⁰ Paragraph 3.19 of the Consultation and Draft Decision

addition to lines in the RC and IA areas¹¹). ComReg has stated that its objective for the Regional Low-Level FACO Market is “not necessarily to encourage entry given the limited prospect for rival operators to deploy infrastructure in this area”.¹² This justification contrasts with the justification used in the case of LLU and SLU **for the UC connections** which are in both the Regional Low-Level FACO Market and in the UC area. As a result, ComReg proposes the TD HCA FAC¹³ cost base for the copper loop for PSTN WLR in the Regional Low-Level FACO Market. This conflicts directly with ComReg's objective for the identically same lines when it comes to also setting wholesale FTTC charges to the same premises. In the non-FACO markets, PSTN WLR is proposed to be **de**-regulated, applying to ~645 000 UC lines.

The effect of ComReg's different pricing proposals for LLU/SLU and PSTN WLR, both of which use identical passive copper assets in the UC area, is to propose discriminatory prices between the use of the identical copper line for different services used by different operators, for different technologies, and between wholesale and retail usage. This is neither technology neutral, nor service neutral and is not supportive of competition. It is also against the best interests of end users, as the payment for the same copper line is different:

- the payment is lower if the end user chooses a service based on PSTN WLR, such as a voice-only or Eircom retail service
- the payment is higher if the end user chooses a service based on LLU/SLU, such as wholesale FTTC.

The non-neutral, discriminatory basis on which copper access lines are costed and price regulated is summarised in Figure 3.7 below. As illustrated, ComReg simultaneously applies two contrasting costing methods for identical assets depending on the service and technology.

	When line is used for wholesale FTTC (LLU/SLU)	When line is used for PSTN WLR
Urban commercial lines in the Urban FACO markets (~645 000 lines)	Price based on full replacement cost BULRAIC+	Unregulated price – chosen by Eircom
Urban commercial lines in Regional FACO markets ¹⁴ (~170 000 lines)	Price based on full replacement cost BULRAIC+	Price based on TD HCA FAC, reflecting cost recovery of existing depreciated cost base

Figure 3.7: Comparison of simultaneous contrasting costing methods based on different services for the same lines [Source: Analysys Mason, 2021]

¹¹ RC area = rural commercial area; IA = intervention area

¹² Paragraph 4.16 of the Consultation and Draft Decisions

¹³ Top-down historical cost account fixed access call

¹⁴ As indicated in the 2020 ANM pricing consultation, “the Regional FACO Markets is the collective name for the 744 exchanges that comprise the Regional Low-Level FACO Market and the Regional High-Level FACO Market”

3.2.2 Costs for various copper-based services are lower for the TD approach than the bottom-up HEO approach, highlighting that the hypothetical efficient operator chosen for LLU/SLU costing has higher costs than Eircom

It is typically the case in regulatory cost modelling that a bottom-up hypothetical efficient operator (HEO) has lower costs than the actual TD operator. However, in the case of ComReg's ANM, the TD/actual costs are substantially lower than the bottom-up/hypothetical costs, as shown in Figure 3.8. This is illogical as an HEO should be at least as efficient as the actual operator and is due to the different choice for valuing the same passive copper assets used for different services. In our experience, it would be unusual in regulatory costing and pricing situations for a preference to obtain wholesale inputs from the actual 'top-down costs' incumbent, instead of the *supposedly* 'hypothetical efficient operator' with the same scope and scale.

Figure 3.8 below highlights in red the costing basis that ComReg has chosen for different services. This indicates that ComReg has adopted the highest cost method for LLU/SLU and the lowest cost method for PSTN WLR. The difference is very material:

- If PSTN WLR was costed on the same basis as LLU/SLU (consistent with ComReg's objective in relation to LLU/SLU, namely to encourage the replacement of copper lines with a replacement next-generation technology), PSTN WLR would be price regulated at a price that is 86% higher. Such a price, if it were applied, would lead to exceptionally high returns for Eircom's copper wholesale line business and reveal a large subsidy from retail lines to wholesale.
- Alternatively, the same subsidy would also be revealed if Eircom's regulatory accounts assumed that Eircom retail had to purchase LLU/SLU (as priced in 2020 ANM pricing consultation) as opposed to PSTN WLR.

ComReg is effectively allowing this subsidy to take place for copper lines purchased by wholesale buyers of FTTC, discriminating between the price paid for copper loops between wholesale and retail, FTTC and PSTN WLR services.

The chosen costing method for LLU/SLU would appear to provide Eircom with the opportunity to substantially over-recover its actual costs and earn an excessive return from wholesale FTTC buyers. At the same time, the unregulated prices and TD HCA price regulation for PSTN WLR would give Eircom the freedom to price its own services using the same copper network assets at a much lower level: Eircom is able to obtain its wholesale inputs from the lower cost actual 'top-down cost' incumbent, without needing to use the higher cost 'hypothetical efficient operator'. This does not promote competition.

Figure 3.8: Cost per line based on BU and TD approaches in FY2019, highlighting the chosen price/methods used for different price regulation using the same asset base [Source: Analysys Mason, based on the ANM¹⁵, 2021]

Service	BU tilted annuity	TD HCA
SLU	EUR17.49	EUR12.21 (30% lower)
LLU	EUR14.97	EUR10.21 (32% lower)
PSTN WLR	EUR25.08 (86% higher)	EUR13.52

3.2.3 Regulating the prices of the same assets when used for different services is inconsistent with EC Recommendation on non-discrimination and costing methodologies

The EC Recommendation on non-discrimination and costing methodologies contains clear guidance for NRAs, and ComReg must take utmost account of this. A number of key extracts are provided:

Para 30: for the purposes of setting copper and NGA wholesale access prices where cost orientation is imposed...NRAs should adopt BULRIC+.

Para 31. NRAs should adopt a BULRIC+ costing methodology that estimates current cost a hypothetical efficient operator would incur to build a modern, efficient network which is an NGA network... without prejudice to whether an NGA network in the relevant geographic market is subject to an obligation.

Para 32. When modelling an NGA network... include any existing civil engineering assets ...as well as civil engineering assets that have to be newly constructed. Therefore... should not assume the construction of an entirely new civil infrastructure network.

Para 33. ...value all assets on the basis of replacement costs, except for reusable legacy civil engineering assets.

Para 37. In light of the principle of technological neutrality...when determining access prices for services that are entirely based on copper...for this purpose, the NRAs should estimate the cost difference between an access product based on for example FTTC and an access product based entirely on copper by replacing the optical elements with efficiently priced copper elements

With respect to these paragraphs, we interpret the EC Recommendation to require ComReg (taking utmost account of the recommendation) to identify whether assets are reusable on an asset-by-asset basis, and not on a service-by-service basis.

Paragraph 37 recommends the enforcement of technology (and service) neutrality by ensuring that only the NGA–CGA (i.e. PSTN WLR in this case) *differential* network elements are costed distinctly, while the passive copper assets that NGA and PSTN WLR have in common are treated identically. ComReg's proposition ignores the EC Recommendation and adopts the opposite approach: the cost difference

¹⁵ The geographical configuration in the model is set to 'All'

between FTTC and PSTN WLR is estimated using a completely different cost base with discriminatory (i.e. not neutral) costing between technologies for identical passive copper assets.

3.3 Common costs not recovered from all services distorts competition in each distinct footprint

The ANM does not recover common costs across the full range of services in all geographies covered by the modelled network. Some services in some geographies receive no allocation of common costs, meaning that other services in other geographies receive the allocation of all common costs. This distorts competition in each distinct footprint, to the detriment of wholesale access seekers, to the detriment of wireless competitors, and to the benefit of Eircom. It also places distorting incentives on NBI.

3.3.1 ComReg's approach to the allocation of common costs in the ANM does not reflect the principle of a common cost

Common costs are, by definition, necessary for all access services in all geographies. Whether any individual line, customer or service is considered uneconomic or not, does not prevent revenue earned from that customer or service from contributing to the recovery of the operator's common costs. The cost basis on which any individual service or line could be assessed to be (un)economic relative to revenue to be earned varies enormously from short-run avoidable costs, to long-run total costs. When assessed against short-run avoidable costs, all of Eircom's services are likely to be profitably economic, and therefore can provide an incremental contribution to the recovery of Eircom's common costs, over and above each service contribution to short-run avoidable costs. The reference here to short-run avoidable costs is relevant for the measure of line/service profitability because retail revenue earned from a customer are short-run and avoidable – typically customers can cancel service after one month, or less than 12 months if they started a new contract recently.

In the case of the ANM, ComReg's definition of common costs includes both costs which are defined as fixed and costs which are defined as variable. In relation to the fixed common costs, these costs, by definition, will *always* be incurred, regardless of the scale or scope of Eircom's fixed access network.¹⁶ In ComReg's definition, these fixed common costs would be incurred regardless of whether Eircom had service in any geography, at any choice of 1200 exchanges, using any or all access technologies (copper, fibre).

These fixed common costs will always need to be recovered by the operator, across its portfolio of access network services. No specific service causes these fixed common costs, and every single service makes necessary use of the fixed common costs. Any line or service could not be functional if those fixed common costs were not incurred. This leads to two conclusions in principle:

- All revenue earned by all services can be considered equally suitable revenue to pay for the fixed common costs.

¹⁶ The pool of common costs is defined in the ANM as applicable only to the fixed access network

- It does not matter whether an equal contribution to common costs then suggests that any individual service or line might have lower (or negative) profitability than if the common costs were not contributed by that service, provided that the operator does not over- or under-recover its common costs in total.

In addition, if ComReg was to choose a different allocation rule for other shared network costs (e.g. operating costs per line or per length), then any line (or subset of lines) can arbitrarily be calculated to be more or less economic, simply depending on the cost allocation rule.

Therefore, we conclude that ComReg's approach to allocating common costs does not reflect the principle of common costs and is based on an arbitrary choice of an equation of revenue less than allocated costs.

3.3.2 ComReg's allocation rule is implausible in relation to Ramsey pricing and the relevant elasticity evidence available to ComReg

We note, in particular, that the two most common methodologies to allocate common costs in LRAIC+ methodologies are Ramsey pricing and equi-proportional mark-up (EPMU):

- Ramsey pricing is based on measuring the elasticity of different services and recovering more common costs from less elastic services, thereby increasing allocative efficiency and maximising consumption (consumer welfare)
- EPMU allocates common costs in proportion to incremental costs.

In practice, most regulators use EPMU because service elasticity is difficult to calculate or estimate.

ComReg's approach to allocate 100% of common costs to lines in the commercial areas¹⁷ would only be consistent with Ramsey pricing if ComReg had evidence of an **infinitely high** elasticity in the non-commercial areas (i.e. the allocation of **any** common costs to those areas would lead to all subscribers deciding to stop paying for the service). This is implausible – customers living in the IA areas are not all infinitely elastic and hence can willingly contribute to Eircom's common costs, either through copper services or FTTH (for the proportion of FTTH supported by Eircom's civil engineering infrastructure (CEI) poles in the IA). Even if ComReg does not have the data to implement Ramsey pricing, it should at least ensure that the common cost allocation it chooses is not implausible under Ramsey pricing principles.

Furthermore, ComReg has access to evidence to the contrary,¹⁸ showing that PSTN services (i.e. PSTN WLR as prevalent in the IA) have **lower** price elasticity than broadband services (i.e. including FTTC as prevalent in the UC area). This evidence would point in principle to a complete reversal of the approach taken by ComReg in order to increase allocative efficiency and maximize consumer welfare i.e. that PSTN WLR services should bear a **larger** burden of common costs than broadband services.

¹⁷ As explained in the 2020 ANM pricing consultation, the 'commercial areas' refer to both the RC area and UC area

¹⁸ TERA Consultants. Methodology for Line Share Pricing in Ireland. A report prepared for ComReg, 23 December 2008

In the absence of measured elasticity, ComReg should allocate common costs to all services in all geographies using an equal or equi-proportionate rule.

3.3.3 ComReg's approach to the allocation of common costs does not promote competition and favours some services and operators to the detriment of other services and operators

ComReg's approach unjustly favours WLR and NBI to the detriment of access seekers in the UC area

The allocation of common costs in the ANM places the burden of common cost recovery on lines in the UC area (~900 000 lines, 60%) and RC area (nearly 300 000 lines, 20%), but does not require any common cost recovery at all from lines in the IA (nearly 300 000 lines active for the duration of the proposed price control, 20%). Common costs are also not allocated to pole access in the IA.

Regulated PSTN WLR prices in the Regional Low-Level FACO Market are set based on ~282 000 lines in Regional Low-Level FACO Market exchanges¹⁹. The ANM does not identify these ~282 000 lines by footprint, however the identified Regional Low-Level FACO Market exchanges contain 45% IA lines²⁰ (i.e. they are over-represented compared to the national average of 20%). These IA lines are not allocated any share of common costs in the PSTN WLR TD cost calculation, compared to exchanges in Urban FACO markets which contain only 13% IA lines (i.e. they are under-represented compared to the national average of 20%). This means that regulated PSTN WLR prices pay a disproportionately lower share of common costs compared to other services which are predominantly in the urban areas, such as FTTC.

This distortion of competition between PSTN WLR and FTTC, by virtue of ComReg allocating disproportionately fewer common costs to PSTN WLR, is not justified by ComReg.

According to ComReg's proposed method, NBI also benefits by not contributing to Eircom's common costs through pole rental.

Eircom's nationwide retail services also benefit from the non-allocation of common costs to Eircom's IA lines: common costs are disproportionately allocated to urban services where competitors have a more significant presence and Eircom's market share tends to be lower. This distortion of cost allocation does not promote competition in:

- urban areas (where competitors face a higher cost burden with respect to wholesale prices and the investment signal is therefore distorted)
- IA areas (where Eircom can price its own services absent any contribution to its own common cost recovery).

¹⁹ ANM Physical copper lines in FACO footprint = 282 161 in 2019 for 'All' geographical footprints

²⁰ ANM exchanges identified FACO (in 2019) contain 403 000 lines of which 180 000 are IA (45%); exchanges identified non-FACO contain 823 000 lines of which 108 000 are IA (13%)

The consultation document does not contain evidence of justification of the following major outcomes of ComReg's approach to cost allocation:

- It favours Eircom and NBI to the detriment of access seekers in the UC area, which is effectively a subsidy levied on Sky and other access seekers to contribute more to Eircom's finances, to the benefit of Eircom, and NBI.
- It does not respect service neutrality, or technology neutrality, as wholesale NGA (FTTC) takes a disproportionately larger burden of cost recovery of common costs. This does not promote the interests of end users, because end users fail to receive the full benefit from improved and lower-cost next-generation FTTC access to the internet, and competition in the supply of services.

According to our footprint analysis (as shown in Figure 3.9 below), the ANM has also not included ~200 000 premises which would provide the bottom-up HEO with a greater addressable market, and therefore a higher number of active lines over which to distribute its common and shared costs. These missing premises appear to be across all geographical areas. The missing premises can be identified by comparing ANM and government data. This has also been verified against information from the latest (i.e. supporting Consultation and Draft Decision 20/101) NGA model, itself based on the Revised CAM. The number of premises within the ANM is lower than the number in DECC's intervention area (by ~92 000 properties in the IA and by ~116 000 properties in the UC and RC areas). The omission of those lines from the ANM negatively impacts all services because the **bottom-up** HEO's market share and active line base ignores these lines; if these lines were to be included, then costs would be shared out amongst a higher number of active lines.

Model	Premises (thousands)			
	UC	RC	IA	Total
ANM	1471	281	452	2205
DECC ²¹	1868		544	2412
Latest NGA model				2350

Figure 3.9: Comparison of footprint counts
[Source: Analysys Mason, 2021]

ComReg's approach does not promote competition between existing services in the IA

Eircom's copper-based services in the IA are competing against the alternatives of fixed-wireless and mobile services (voice, or voice and broadband, or broadband only). The fixed-wireless and mobile operators must recover their own common costs across their portfolio of services, including lines in the IA. However, Eircom's copper services in the IA are not required, according to ComReg's proposed allocation method, Eircom's copper services in the IA are not required to recover any share of Eircom's common costs. This creates a discrimination between Eircom and other operators, does not promote competition between existing services in the IA, and is to the detriment of end users.

²¹ National Broadband Plan Map; see <https://www.gov.ie/en/publication/5634d-national-broadband-plan-map/>

ComReg's approach places multiple distortions on NBI

On the one hand, according to ComReg's proposed allocation method, NBI benefits from not having to pay a contribution to Eircom's common costs through renting Eircom's CEI poles in the IA. This is beneficial to NBI but also distorts its incentives. It implies that NBI should rely on Eircom's pole rental ad-infinitum – because NBI would not benefit from deploying its own poles and replacing the recovery of a share of Eircom's common costs (which is absent) by the recovery of its own common costs. A build-or-buy decision around deploying poles is not just an incremental decision if it allows the investor (i.e. NBI) to also realise greater economies of scope in its own business (by transferring the (absent) proportion of common costs recovered from Eircom's poles to recovering its own cost base).

On the other hand, NBI must recover its own common costs from its own FTTH services in the IA. In doing so, NBI's FTTH services are competing with Eircom's PSTN WLR services in the IA. This competition exists because, although FTTH offers additional features (such as broadband speed) compared to Eircom's legacy network services, NBI must nevertheless convince consumers to pay the extra retail price for FTTH compared to the retail price for Eircom's more basic services. However, in the context of ComReg's proposed allocation rule, Eircom's PSTN WLR services in the IA do not have to contribute to Eircom's common costs. This means that NBI's FTTH services face the competitive distortion of having to recover their own common costs while competing against a legacy service which does not have to recover common costs.

3.3.4 ComReg's approach is based on flawed and outdated reasoning

The IA, which is ultimately derived from DECC's analysis, does not delineate where copper services are uneconomic

DECC has defined an Amber area that is uneconomic for FTTH roll-out and that is the target area for intervention. This Amber area contains ~544 000 premises out of the nationwide total of ~2 412 000 premises. However, the definition of 'uneconomic for FTTH' does not mean that the same premises in the IA are uneconomic from the perspective of Eircom's existing copper network costs and service revenue.

ComReg has chosen to assume that the DECC Amber area represents copper lines which are uneconomic and should not be required to contribute to Eircom's common costs, without conducting any analysis on the costs or economics of those copper lines. The cost allocation rule that ComReg is relying on is therefore flawed.

The assessment that IA copper lines are uneconomic has not been updated to reflect the costs and revenue facing Eircom, or an HEO, today

Eircom's copper network is due to be retired, and the economics of copper-served premises in the IA should thus be assessed with reference to the incremental costs and incremental revenue of Eircom's IA copper network. Eircom's IA copper network is a sunk cost and a depreciated cost, which is being replaced by another operator's (subsidised) FTTH lines, without the need for replacement of any copper assets. As a result, the incremental costs of Eircom's copper network in the IA is very low; the

incremental revenue which can be earned from retail (and wholesale) line rental are generally the same as average copper generation revenue across Ireland.

It appears from ComReg's previous decision on the economic characteristics of the IA that an analysis by TERA of "cost data in the D03/16 CAM indicates that the cost per customer served of extending network services into the IA is higher than the SB WLR price".²² However, the CAM assumed that copper services would exist in perpetuity, and hence the costs of extending the network services would have included the full replacement costs of the copper network. As the copper network in the IA is no longer existing in perpetuity, its economics are fundamentally different. This has not been assessed for the situation existing in the ANM.

Furthermore, the ANM has a different network design and different treatment of operating costs compared to the D03/16 CAM. These differences include, for example, sharing of costs between copper and FTTH, allocation of costs by line irrespective of line lengths by footprint, and fundamentally, a cost base derived from Eircom's more recent regulatory accounts. The reduction in costs seen in Eircom (see Figure 3.23 and Figure 3.24 in Section 3.6.3 of this report) renders TERA's assessment of IA's 'uneconomic' copper lines as outdated and invalid. As an example, Eircom's now-improved cost efficiency will have improved the economics of copper lines in the IA previously assessed as 'uneconomic'.

Finally, in hundreds of exchange areas in the ANM, the average cost of UC lines is higher than the average cost in the entire exchange area (before the allocation of any common cost). Therefore, the logic that UC lines can support common costs whereas other lines in the same exchange area should not support common costs, is flawed. This can be seen in 263 exchange areas which contain ~50 000 IA lines that do not contribute to common costs (see Section 3.3.6).

No assessment was made by TERA as to the (in)ability of CEI to support common costs

In 2018, TERA used a comparison between costs and SB WLR prices to estimate that the IA was not able to contribute a margin to common costs. No such assessment has been made for CEI applicable in 2021 onwards, using relevant CEI costs and CEI prices. Furthermore, the retail price of FTTH in the IA has not been set, and there are no fundamental constraints on the amount of government subsidy to NBI. As a result, the FTTH business plan of NBI can be developed to include a contribution to Eircom's common costs within the CEI prices from Eircom.

The reasoning that lines in the IA cannot contribute due to the PSTN WLR price constraints is flawed

ComReg's reasoning is flawed for three reasons.

First: PSTN WLR lines in the Urban FACO markets are no longer subject to price regulation, therefore Eircom is free to set the price of PSTN WLR in the Urban FACO markets at the level required to recover the share of common costs that should be recovered from lines in the IA. According to the ANM, Eircom has room to earn at least an extra EUR2.21 per line in profit from the lines in Urban

²² TERA, Report on the determination of appropriate costing and pricing methodologies for VUA and NGA Bitstream, September 2018, page 10

FACO markets, and this, combined with the unrestricted nature of unregulated prices, enables PSTN WLR prices across Ireland to contribute to common costs for all IA lines (including those IA lines which are in Urban FACO markets). We obtain this margin of EUR2.21 by comparing PSTN WLR TD costs in the FACO and non-FACO areas. This amounts to EUR22 million per annum, when multiplied by the number of unregulated PSTN WLR lines (823 000 in the non-FACO exchanges), which is more than sufficient to cover the IA share of common costs. Therefore, the common costs associated with PSTN WLR lines in the IA could easily be distributed across all PSTN WLR lines, including sufficient contribution from the unregulated lines in Urban FACO markets, and including all of the PSTN WLR lines which Eircom Retail effectively purchases from Eircom Wholesale in its separated accounts.

Second: Revenue from PSTN WLR regulated prices in the Regional Low-Level FACO Market can at the very least be set at the current levels in order to contribute to the recovery of common costs. PSTN WLR is currently set by ComReg at a price of EUR16.59 and used to be set at EUR18.02 until decision D03/16. ComReg has now estimated that cost-based PSTN WLR in the Regional Low-Level FACO Market can be reduced to EUR16.07 in 2020/21, falling to EUR14.80 by 2024/25. This means that the current PSTN WLR price is above the estimated cost, excluding common costs in the IA. As the previous prices (EUR16.59 and EUR18.02 prior to that) were borne by the market (they were 'economic'), the new regulated PSTN WLR price could be retained at the higher level of EUR16.59 or even increased back to EUR18.02 if needed in order to support recovery of a share of common costs by IA lines.

ComReg argues in paragraph 6.19 of 2020 ANM pricing consultation that this would lead to excess cost recovery, however this would not be the case if implemented correctly in the ANM with the same amount of common costs added to the costs of PSTN WLR lines in the IA (present in the Regional Low-Level FACO Market) and removed from the share of common costs that are recovered from urban lines in the proposed prices i.e. as a zero-sum operation.

Furthermore, given that the previous PSTN WLR price control included indicative prices up to EUR16.82 and used to be EUR18.02, there is headroom for PSTN WLR prices to increase further above ComReg's proposed prices (reducing further to EUR14.80) and contribute further to IA common costs. The difference between the indicative price of EUR16.82 and the proposed price of EUR16.07, when multiplied by the number of physical (active) copper lines (1.28 million) amounts to EUR11.5 million per annum of extra 'economic' market revenue available to Eircom to contribute to common costs. There would be even more market revenue available if using the old price of EUR18.02 as a ceiling for what the market can bear.

Third: ComReg's argument for previously setting PSTN WLR prices on the basis of the highest of BU or TD costs, if applied now, would give a sufficiently high price to support common costs in the IA. As described in paragraph 5.35 of ComReg 18/95, the "*exception of using top-down historic costs in the case of [PSTN]-WLR was based on analysis set out in the 2016 Access Pricing Decision.. should be based on the higher of: (1) Eircom's top-down actual costs...nationally; or (ii) BU-LRAIC+ costs...in the modified LEA.*" In the ANM, for 2019 (1) is EUR14.24, and (ii) is EUR15.96. This shows that if ComReg adopted the same approach, in order to determine the cost basis for PSTN WLR then it would come to the opposite conclusion. In other words, using TD costs was the exception for decision 18/95 but should not be continued, and competition would now best be promoted by applying BU-

LRAIC+ to PSTN WLR. This means that ComReg's proposals on the PSTN WLR cost base and the non-allocation of common costs to IA lines, which effectively harms competition and does not encourage efficient investment, is based on an outdated position which no longer applies and contradicts ComReg's own previous reasoning of using the higher of BU or TD costs.

ComReg has not considered the possibility of USO funding of any Eircom's 'uneconomic' copper lines in the IA

Eircom's Universal Service Obligation (USO) calls for the provision of affordable tariffs, and Eircom can make an application to ComReg to fund its USO net cost. The net cost would include any shortfall in the recovery of common costs fairly allocated to IA lines if Eircom faced such a shortfall as a result of having to offer affordable tariffs. USO funding would not distort any competitive markets as it would be provided from a general industry fund. The ability of Eircom to access USO funding to support 'uneconomic' lines renders those lines economic for the purpose of being allocated their fair share of common costs.

3.3.5 ComReg is using an incorrect specification of common costs

ComReg has included variable costs (i.e. costs which vary with the number of access lines) in the pool of common costs (see Section 5.3.7 of this report). These variable costs are effectively indirect costs and should be treated in the same way as other indirect (non-common) costs in the ANM. Eircom may have chosen to identify these costs as common in its accounting, but **this does not mean the costs should be treated as common in a service costing environment**. We note in particular that the costs identified by Eircom as common costs appear large when compared against two recent similar EU costing models (see Section 5.3.2).

It is implausible, given the way that the Valuation Office determines network rateable value, for network rates costs to be a fixed and common cost independent of the scale or scope of the access network operator

If ComReg's specification of common costs is taken to be correct, then the access network operators NBI and SIRO would be expected to have a similar level of network rates cost to that of the ANM operator. This is implausible, given the way network rates are determined. ComReg assumes that network rates of around EUR10 million are a fixed common cost for an access network operator regardless of scale and therefore independent of the size of the network (number of lines, geographies of network deployed). If this were true, NBI's fixed access network would be assessed to have the same fixed rateable value as Eircom's and NBI would expect EUR10 million in annual network rates costs. In Section 5.3.6 of this report, we explain why network rates are not a fixed or common cost but should be treated as a variable indirect cost. In our opinion, as Eircom's IA network is retired, its rateable value will decline; as NBI's network is expanded, its rateable value will increase. This scaling of rateable value will occur across the whole country in a fully variable way, indicating that network rates are not a common cost, nor a fixed cost, but an indirect cost.

ComReg's specification of common costs, including network rates, can be compared against accounts for NBI and SIRO

ComReg's specification of common costs in all common categories should apply equally to Eircom, NBI and SIRO. Other than the network rates discussed above, according to ComReg's costing approach, NBI would also be expected to incur the same common costs in the ANM for its IA access network, namely, around EUR14 million for transport, accommodation, personnel and 'other' and a further EUR15 million for common IT systems. We do not have access to NBI's business plan but expect that ComReg has access to NBI's business plan and thus would be able to identify whether NBI incurs these (fixed) common costs from Year 1 of its business. ComReg should perform a similar comparison for SIRO, to provide further evidence of the fixed or variable nature of fixed access network common costs.

The specification of fixed (non-scalable) common costs, as set in the ANM, should by definition apply to any fixed access network operator in Ireland, regardless of footprint, scale or scope. If it is considered by ComReg that the fixed (non-scalable) common costs are a function of the long-run footprint, scale or scope of the fixed access operator then they can be allocated (as a shared cost) according to the footprint, scale or scope of the services concerned. Benchmarking of other fixed access operators' costs would provide further evidence to 'triangulate' the fixed common costs of an HEO access network in Ireland.

3.3.6 The cost of different lines in the ANM shows that in hundreds of exchange areas the cost of the UC lines is higher than the average cost of lines in the exchange

UC lines are used to determine the LLU and SLU prices for wholesale FTTC. Commercial lines must then bear the burden of common costs because IA lines are not allocated any share of common costs. However, in hundreds of exchange areas, UC lines are more costly than the average cost per line in the exchange area – even before the allocation of any common costs to any lines. In areas where the average cost per line decreases when the RC and IA lines are added, this shows that there are economies of scale in the direct and shared costs of the UC lines, and not dis-economies of scale caused by adding IA lines into the area.

ComReg relies on the following assumption as the basis for not allocating common costs to IA lines: that adding the longer lines to the area adds higher cost lines. However, the ANM reveals the opposite effect to a material degree. On the basis of the calculations of the ANM, many UC lines are more expensive than when RC and IA lines are included, and therefore IA lines should also share the burden of common costs.

Figure 3.10: Extract of information showing number of areas where UC lines cost more than the average line in the same area [Source: Analysys Mason, based on the ANM, 2021]

	Note	Value / output
Year		2021
Number of exchanges where cost per line in UC is higher than average cost per line in the exchange area	Unit costs measured before the allocation of common costs	263
Number of IA lines in these exchanges		47,363 (16% of IA copper lines)

3.3.7 Our recommendation on the treatment of common costs is to avoid any discrimination between services and geographies

Our recommendation, consistent with LRAIC+ best practice and based on the discussions set out in the previous sections of this document, is to apply a simple adjustment to the model, and to avoid any discrimination between services and geographies. ComReg should adopt the principle of allocating common costs to all services in all geographies, therefore allocating a share of common costs firstly to all lines in the IA, and secondly to all CEI across the network. This approach is set out in the 2013 EC Recommendation²³ which ComReg must take into utmost account (our emphasis is added in bold in the extracts below):

- common costs are **shared costs for products or services produced jointly** which are not attributable to any single product or service²⁴
- mark-up means the addition made to the incremental cost of a specific service in order to allocate and recover the common costs **through allocation to all services for which those common costs are relevant**²⁵
- for the purposes of setting **copper** and NGA wholesale access prices where cost orientation is imposed ... NRA's should adopt a ... costing methodology which includes a bottom-up modelling approach using LRIC as the cost model **with the addition of a mark-up for the recovery of common costs.**²⁶

As Eircom's network in the IA is reduced in extent in the future (e.g. closedown of IA copper lines), Eircom's common costs should be steadily rebalanced on an equal or equi-proportionate basis, supporting Eircom's non-common cost base and services.

This equal or equi-proportionate allocation should ideally be done according to a cost-based mark-up (EPMU, as presented in Section 3.3.2) whereby more costly lines such as active WLR PSTN lines take a greater share of cost compared to passive lines such as LLU/SLU, and compared to 'passive' civil engineering infrastructure such as poles. Alternatively, the allocation could be done according to lines, where all lines, whether copper or fibre, and in all geographies contribute equally to the common costs of Eircom (after deducting the allocation to CEI).

Our recommended approach would promote competition, and substantially reduce the distortive effects on different services, markets and geographies (whether done on a **per-all-lines** or **per-all-cost-based-mark-up** approach).

²³ Commission Recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment

²⁴ 2013 EC Recommendation, Definition, 6(b)

²⁵ 2013 EC Recommendation, Definition, 6(l)

²⁶ 2013 EC Recommendation, recommended costing methodology, paragraph 30

3.4 The ANM fails to respect cost orientation and takes an inconsistent approach to allocating various costs

3.4.1 There is no effort to allocate Direct R&M-line copper opex between footprints based on the number of faults

Based on Line Fault Occurrence data from ComReg,²⁷ there are approximately 4.35 and 3.53 times more faults reported per 100 lines in the RC area and IA area relative to the UC area, respectively.

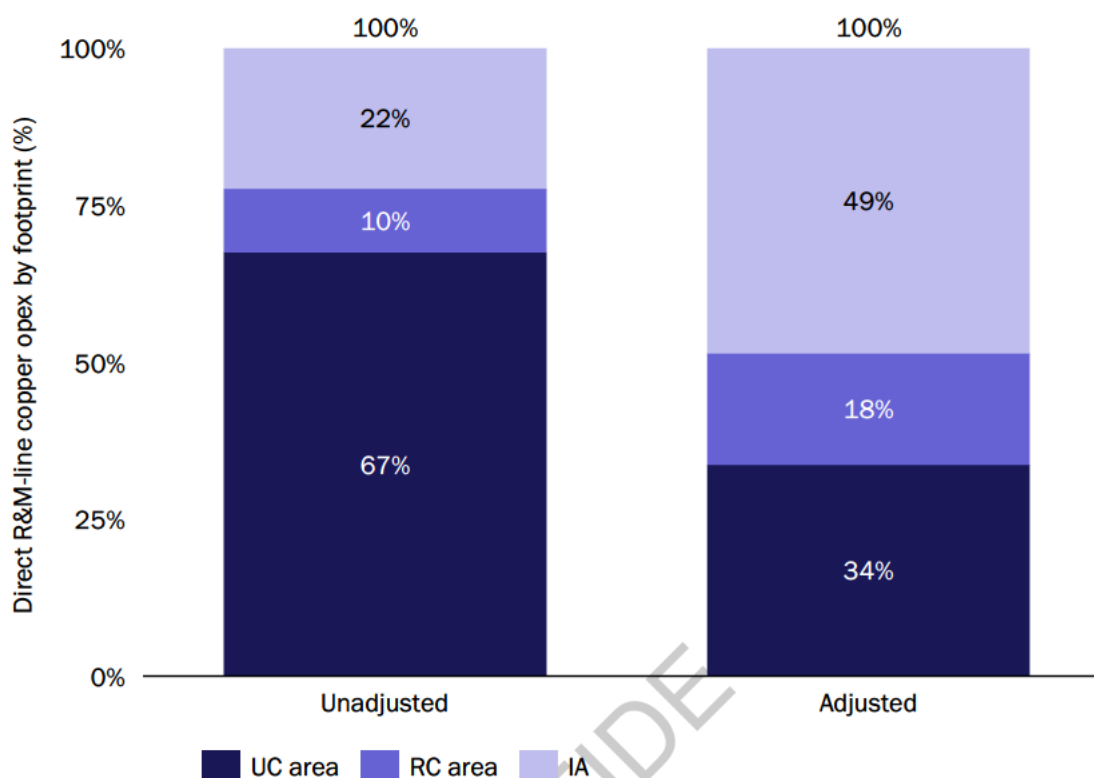
Taking this into consideration, we used a weighted estimate to show that only 34% (EUR5.5 million) of the FY2020 Direct R&M-line copper opex should be allocated to UC lines. However, as the ANM does not consider the relative propensity of faults by footprint, despite ComReg having access to reliable data showing higher fault rates in the IA (and rural) commercial areas, it assigns 67% (EUR11 million) of the FY2020 Direct R&M-line copper opex to UC lines. Therefore, an extra EUR6.5 million of FY2020 Direct R&M-line copper opex is allocated to UC, when it should be distributed between RC and IA lines according to the lines needing repair and maintenance. This analysis is presented in Figure 3.11 below.

The scaling approach of the ANM compounds this problem as the time period progresses because when longer copper lines are removed from the IA, the correspondingly high R&M-line opex from high-fault long IA lines is not avoided (i.e. the average cost per line does not decrease as it should), and the recovery of the R&M-line opex is increasingly concentrated on UC lines.

ComReg's previous approach to R&M appeared in paragraphs 5.234 and 5.247–5.249 in ComReg Document 15/67, which recognised that the direct cost of faults is related to the level of faults in the network.

²⁷ ComReg AFL USO Quarterly Reports

Figure 3.11: Percentage of Direct R&M-line copper opex by footprint, FY2020 [Source: Analysys Mason, based on the ANM, 2021]



3.4.2 The allocation of copper network opex, irrespective of the type or length of line, does not follow cost causation

The copper network opex has been evenly assigned per line, regardless of the type of line (passive, PSTN WLR, line share, SABB, ISDN) bearing in mind that active lines involve more equipment and therefore incur more faults.

This approach also does not consider the length of the lines. The longer lines seen in the RC and IA areas require higher opex due to the higher environmental costs (caused by, for example, storm damage) and length-related costs (such as maintenance driving).

Paragraph 5.30 of the ANM specification document indicates that the BU opex is obtained from the Revised CAM. However, it is our understanding that the Revised CAM determined (some categories of) line-related opex to be length related. It appears that the approach taken in the ANM is to disregard the Revised CAM approach based on the length of the lines, group all the line opex together and then distribute it, irrespective of length. This 'cherry-picks' one assumption from the Revised CAM without the associated underlying logical approach taken in the Revised CAM.

3.4.3 Tree trimming opex should be allocated to aerial cables according to the geographical extent of the network

Paragraph 5.19 of the ANM specification document recognises that tree trimming helps to maintain aerial cables (it would not be done for underground cables). However, aerial cables are predominantly present in the RC and IA areas, where longer lines will have more countryside trees along the routes, compared to the smaller number of shorter urban aerial routes.

Tree trimming opex should therefore be allocated on a cost-causality basis to aerial cables according to length and/or geography. An investment in a network in urban areas would not involve costs relating to rural and IA routes, therefore ComReg's current approach does not meet its objectives to incentivise efficient investment.

3.4.4 The RC lines pay a share of urban 'route-shared' costs by means of the RC overlap in UC, however IA copper lines do not contribute to the same shared costs

In paragraph 5.181 of 2020 ANM pricing consultation, ComReg explains how RC lines contribute to the share of some network elements in the UC area. However, Eircom's IA copper lines will also share the same routes, yet do not contribute to the shared cost in any way. This cost allocation is not related to the distribution of common costs – it is specifically related to direct costs of UC E-side network elements, and hence ComReg should also calculate the IA copper sharing of E-side network elements and distribute costs accordingly.

ComReg's current approach to the allocation of shared costs, which involves only UC and RC lines (despite the fact that IA lines equally share the costs), will distort efficient investment signals and competition between copper and other services in the IA. It also results in UC and RC customers effectively subsidising part of the shared costs of copper (and FTTH) lines in the IA.

3.4.5 The CEI approach leads to letting NBI transit the commercial footprint for close to free

The CEI approach leads to letting NBI transit the Commercial footprint for close to free because the incremental cost has been set to zero (with the exception of a very small billing element). This allocation breaks cost-causation principles, as the NBI will essentially share routes and assets with the lines in the RC area and UC area. This cost allocation is not related to the distribution of common costs – it is specifically related to the direct costs of commercial area E-side network elements, and hence ComReg should also calculate how NBI shares the commercial network elements and distribute costs accordingly.

It is inequitable to provide NBI with this nearly free access. It is also contrary to the interests of end users, because the residents of the IA do not contribute to the costs of the network that they share with urban and rural 'commercial' residents, who must pay for the full cost of these network elements despite the elements being used to deliver FTTH to the IA.

3.4.6 No land and building costs are allocated to IA lines, despite other non-common opex being allocated to IA lines

Land and building opex for copper and fibre are exclusively allocated to services within the commercial footprint. ComReg argues that it is reasonable to model all exchange buildings as located in commercial areas, as the incremental land and building costs incurred in providing services in the IA are minimal due to very few exchange areas being wholly positioned in the IA.

This allocation breaks cost-causation principles for non-common (shared) opex because the IA lines share the same land and buildings with the lines in the RC area and UC area. The fact that the exchange buildings are typically located in urban centres of exchange areas does not mean that they are not equally used by all lines in the area.

In addition, ComReg's proposal to not make IA lines pay for land and building costs is an arbitrary choice, given that IA lines pay a share of other non-common opex. In the long run (according to BULRAIC+ principles), the size of the efficient exchange building would scale with the number of copper lines and hence the size of MDF and cable access facilities, and therefore land and building costs should be treated as a scalable non-common cost per line.

Data from the ANM provides evidence of the extent to which the ANM is loading costs disproportionately onto UC lines, to the benefit of lines in the IA. As shown in Figure 3.12 below, 23% of exchanges contain a minority of UC lines, but those UC lines (less than 10 000) must bear the cost of the entire exchanges, while around ~66 000 copper IA lines in the same exchange areas make no contribution to the costs of those exchanges.

Figure 3.12: Extract of information showing disproportionate allocation of land and buildings to UC lines
[Source: Analysys Mason, based on the ANM, 2021]

	Note	Value / output
Year		2021
Number of exchanges where UC lines are less than 20% of the lines in the exchange	We pick 20% to identify exchanges where UC lines bear the burden of exchange-related costs, despite being the clear minority of lines in the area	260 (23% of exchanges)
Number of UC lines in those exchanges		9868
Number of IA lines in those exchanges		65 961 (23% of IA copper lines)

The effect of not allocating all copper network costs fully to all copper lines in the IA provides copper lines in the IA with an unfair advantage when competing with NBI's new FTTH lines, and when competing with other services in the IA (such as mobile or wireless). This is contrary to ComReg's objective of promoting competition.

3.4.7 The allocation of common costs on a per-line basis in the ANM is inconsistent with the approach followed in the PAM and DAM

The treatment of common costs in the pole access model (PAM) recognises a cost-based mark-up approach (albeit excluding IA poles which account for 68% of poles), where common costs are applied proportionately to the direct costs of the areas (pro-rata to capital annuity costs). This means that each pole (ignoring IA poles) takes an equal share of common costs. The approach of using a *length-related* cost-based mark-up for common costs is applied in the duct access model (DAM).

The corresponding access network costing principle would be that longer lines (needing more poles, or longer ducts) would be allocated a larger share of common costs by virtue of having a longer route (with more cost). This principle is however **not** followed in the ANM, because the ANM shares common costs per line regardless of the number of poles, or length, which the lines would use.

Approximately EUR4 million of common cost is allocated to CEI charges in the DAM and PAM, based on length/distance of route, which is inconsistent with the method applied in the ANM where common costs are not allocated by length/distance of route or associated capital assets deployed for lines in different geographies.

Applying different principles for the spreading of the same costs in different models (for different wholesale services) distorts incentives for operators to choose efficient investment decisions between: 1) own deployment, 2) access to CEI poles/ducts according to the length of route needed, or 3) wholesale access per customer line irrespective of number of poles/length on that route.

3.5 The latest NGA and NGN models used for pricing FTTC services have major consistency problems and are not up to date

3.5.1 The latest NGA HEO assumes an implausibly high and likely impossible proportion of EVDSL lines in the mix of NGA when the distribution of lines modelled in the ANM is considered

As shown in the latest NGA model in 2021–23 (*Results*, line 209), ~152 000 NGA lines use exchange-fed EVDSL lines in 2021, alongside ~ 512 000 cabinet-fed lines. This is a 23:77 mix of EVDSL:FTTC.

Elsewhere in the latest NGA model, more than ~200 000 EVDSL lines are modelled (*DSLAM eVDSL*, line 48).

Using the Geospatial model, we have identified the number of premises attached to each cabinet ID (YYY1_001...n) and attached directly to each exchange ID (YYY_). Each premises is identified as relating to the UC, RC or IA areas. Figure 3.13 below summarises the connections of all premises in the ANM to exchanges and cabinets.

Connection	Premises (thousands)			
	UC	RC	IA	Total
Direct to exchange (YYY_)	162	102	193	457
To cabinet (YYY1_001..n)	1313	189	246	1747
% direct	11%			

Figure 3.13: ANM premises by connection type
[Source: Analysys Mason, based on geospatial analysis, 2021]

As shown, there are ~162 000 premises connected directly to their exchange in the UC area, alongside ~1 313 000 cabinet-connected premises. These UC connections provide the FTTC services in the ANM and therefore latest NGA model. The ANM contains 11% of UC lines connected directly to the exchange.

First, the latest NGA model seems to effectively assume that the ~152 000 EVDSL lines carrying NGA (23% of the NGA mix) are associated with the ~162 000 premises in the ANM (11% of the mix), alongside ~512 000 cabinet-fed NGA lines associated with ~1 313 000 premises, which we consider to be implausible or likely impossible. This is because it implies a 94% premises penetration of VDSL for direct-to-exchange, and a 39% premises penetration of VDSL for cabinet-fed lines. There is no market logic or evidence that VDSL-based NGA would have such an extreme differential take-up when the connection point of the distribution cable in the hypothetically efficient ANM is considered. The ANM itself assumes that FTTC will reach an average of 42% of premises in the UC area.

Second, the larger number of EVDSL lines in the latest NGA model (over 200 000) is inconsistent with the ~162 000 UC direct-to-exchange premises modelled in the ANM.

The conclusion of the two points above is that:

- the latest NGA model is not consistent with the new hypothetically efficient ANM, and the NGA model is assuming too many exchange-fed lines, or
- the ANM modelling itself is flawed and leads to too many cabinet-fed lines.

Both potential conclusions are a cause for concern. This problem needs to be addressed by ComReg to ensure that costs for NGA services are efficient, consistent in respect of time/costing basis, and consistently defined across the service stack²⁸, and hence provide correct investment decision signals to the market.

3.5.2 NGA HEO demand volumes are out of date and not consistent with the demand profiles in the ANM HEO

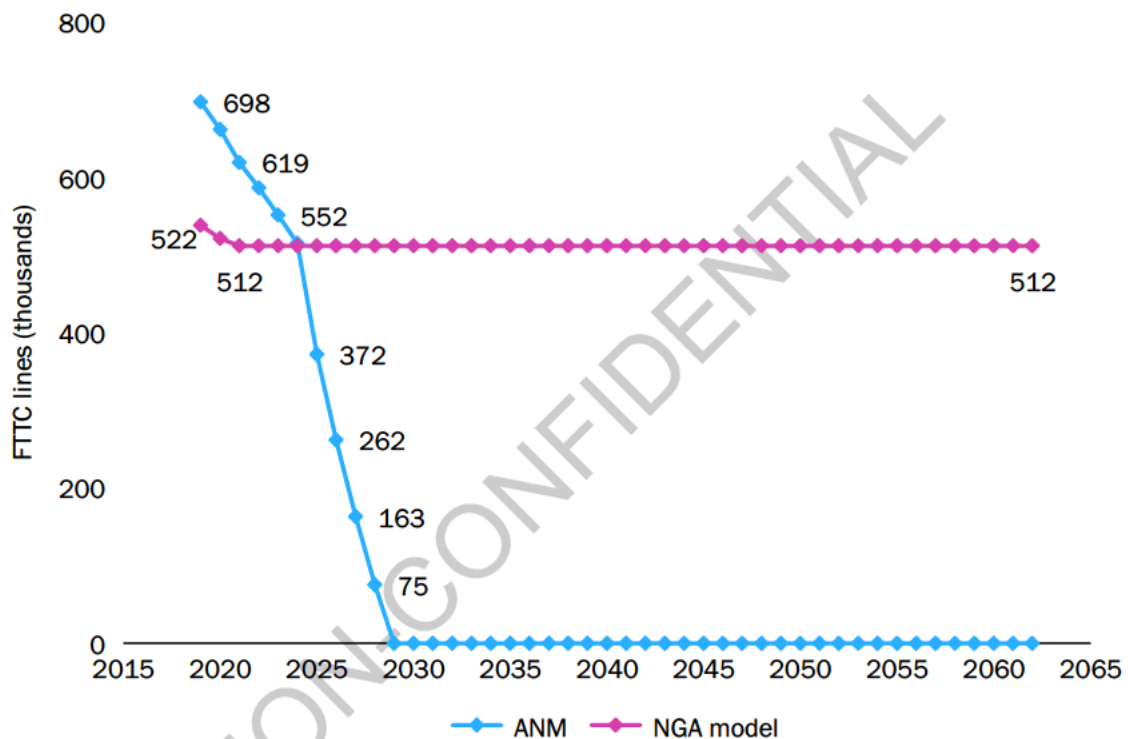
The NGA model and ANM model were developed by ComReg at two different points in time. On the one hand, the NGA model was developed historically and consistently with the pre-existing Revised CAM. The Revised CAM assumed that the copper network would be the basis of providing NGA

²⁸ SLU and LLU elements and proportions, NGA elements and proportions, NGN (core) elements and proportions, ancillary and other wholesale and common cost elements

(VDSL) services in perpetuity, and determined copper costs on this basis. On the other hand, the ANM represents ComReg's most recent perspective and assumes that the copper network will be entirely replaced in the coming years, and that FTTH will provide NGA services in perpetuity.

FTTC lines in the ANM are forecast to decline, and the service will be fully decommissioned in 2029, in line with the complete switch-off of the copper network. However, this trend is not observed in the latest NGA model, where FTTC demand remains flat in perpetuity at half a million lines. This highlights the fundamental underlying demand volume inconsistency between the two models, as shown in Figure 3.14.

Figure 3.14: FTTC demand in the ANM and the latest NGA model [Source: Analysys Mason, based on the ANM and the latest NGA model, 2021]



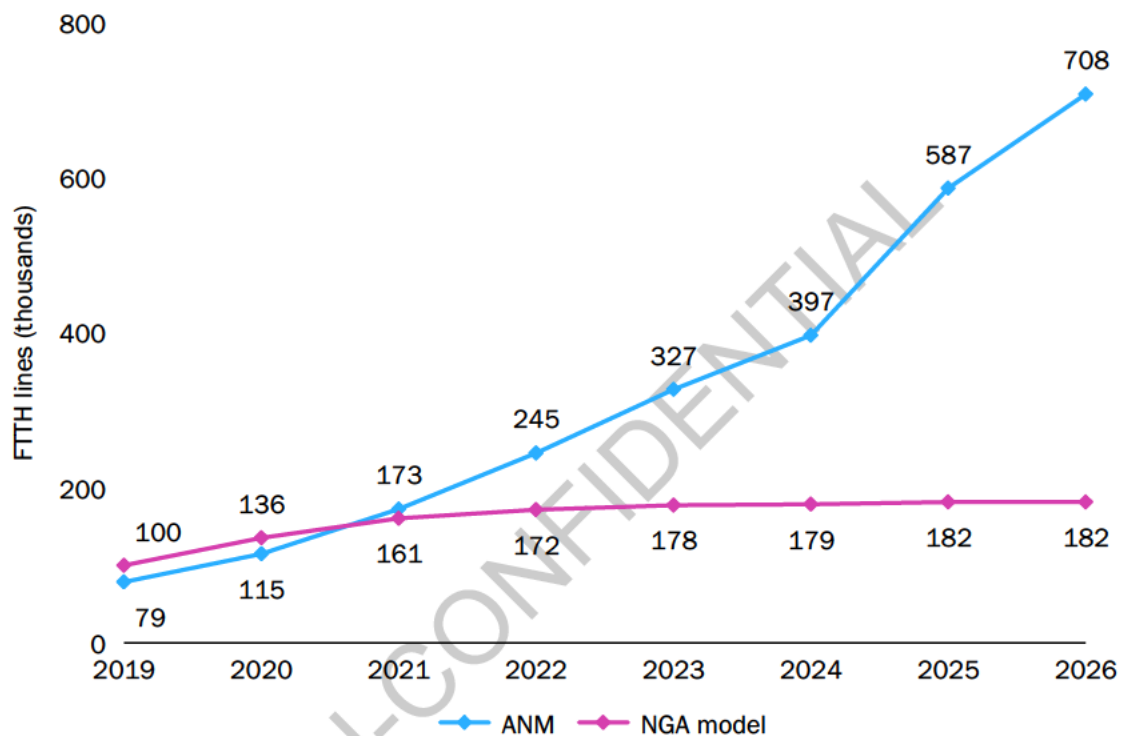
FTTH lines in the ANM are forecast to grow, as ADSL and VDSL customers switch over to this service in the future. However, this is again not observed in the latest NGA model, where FTTH demand remains very limited. Figure 3.15 below illustrates the FTTH demand in the ANM and the latest NGA model, highlighting the inconsistency which arises from the two opposite assumptions used by ComReg as the basis for the NGA and the ANM cost modelling:

- at the time of the NGA model, ComReg adopted the position “because ComReg is modelling VDSL as an anchor technology, it has adopted the assumption in the NGA Cost Model that Eircom will continue to use copper based VDSL technologies to target the 1.6m customers it currently passes with VDSL rather than overlay its VDSL platform with an FTTH solution.” (Paragraph 6.60 of ComReg 18/95)

- and now for the ANM, ComReg adopts the position “the modelling in the ANM has ... Eircom’s latest plan to overlay FTTH to pass approximately 1.45m premises over 5 years in the Urban Commercial footprint”. (Paragraph 6.43 of ComReg 20/101)

This inconsistency gives rise to a pair of costing models (the NGA model and the ANM) which are not coherent in principle and hence not providing objective and reliable results.

Figure 3.15: FTTH demand in the ANM and the latest NGA model [Source: Analysys Mason, based on the ANM and the latest NGA model, 2021]



3.5.3 The NGA HEO represents a very different deployment and coverage situation to the ANM HEO, leading to inconsistent results

The major inconsistency between the network deployment and coverage approach and assumptions of the NGA and ANM models is demonstrated further by the figures below, which show that:

- the NGA links modelled in the ANM and the latest NGA model differ over time (Figure 3.16)
- the ANM has substantially more exchanges serving FTTC than the latest NGA model (Figure 3.17)
- there are more exchanges with FTTC cabinets in the ANM than in the latest NGA model (Figure 3.18).

Figure 3.16: NGA links modelled in the ANM and the latest NGA model [Source: Analysys Mason, based on the ANM and the latest NGA model, 2021]

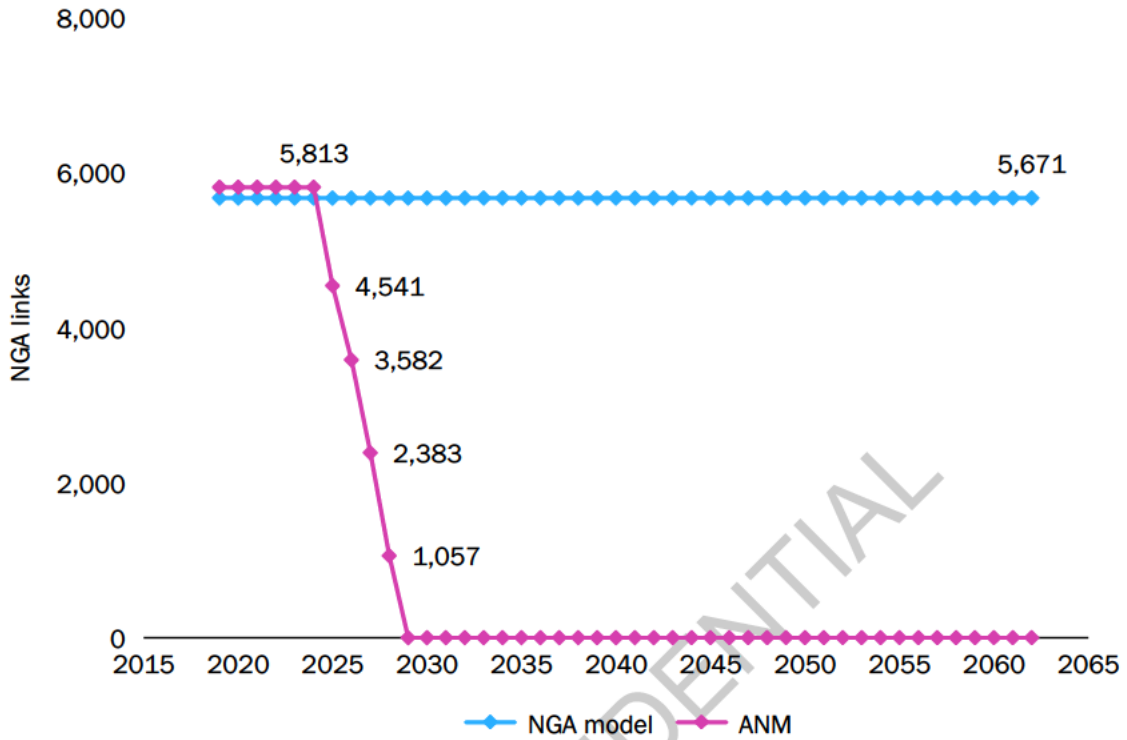


Figure 3.17: Exchanges with active FTTC lines in the ANM and the latest NGA model [Source: Analysys Mason, based on the ANM and the latest NGA model, 2021]

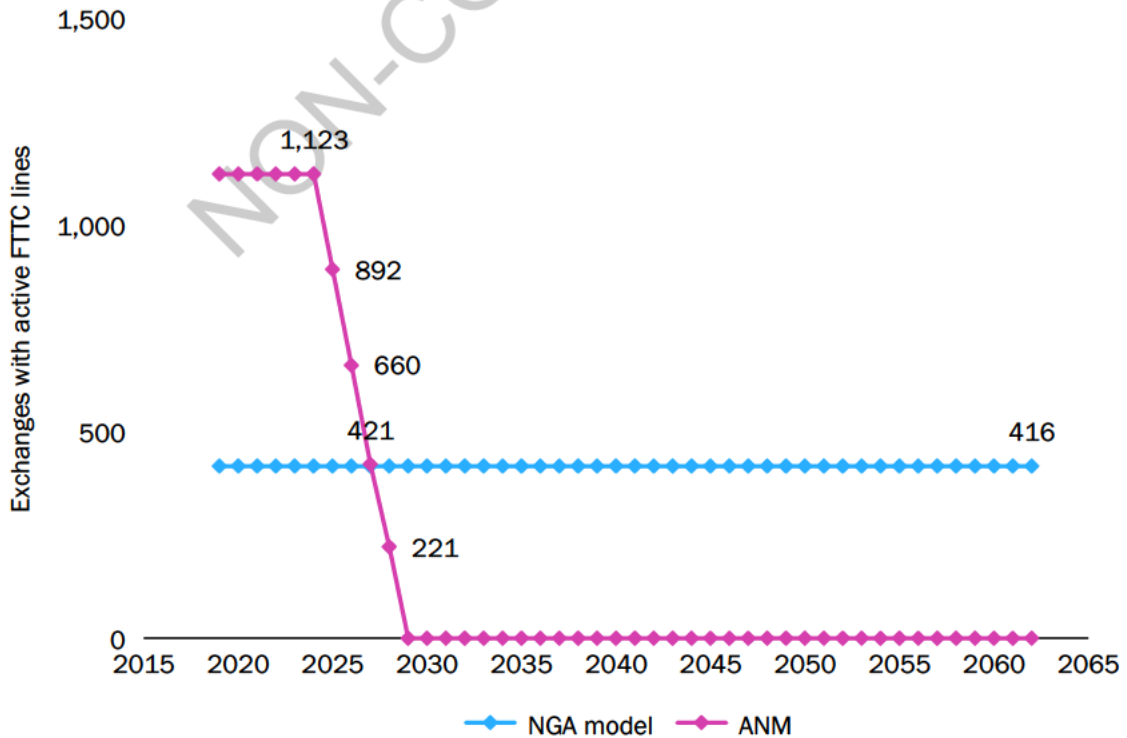
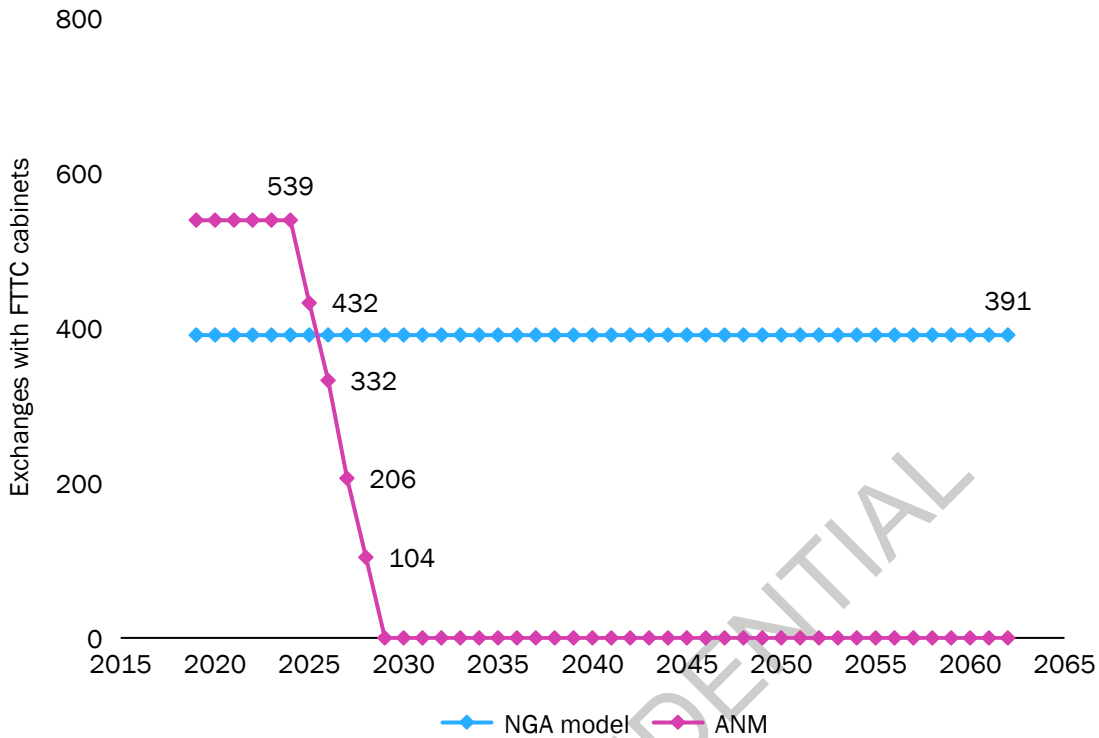


Figure 3.18: Exchanges with FTTC cabinets in the ANM and the latest NGA model [Source: Analysys Mason, based on the ANM and the NGA model, 2021]



3.5.4 Recurring capital/deployment costs in the latest NGA model are over-dimensioned for the number of lines served

Over-dimensioning of EVDSL equipment

The EVDSL DSLAM roll-out in the latest NGA model is based on the peak demand for the service. This approach leads to substantial over-provision, as the EVDSL lines are forecast to decline beyond the peak in 2016. The substantial over-provision in the model is then continued in perpetuity to 2062, as shown in Figure 3.19. This amounts to a long-term utilisation of deployed port capacity of only 14% which is inconsistent with an efficient HEO operator maximising its productive efficiency, and results in wholesale costs above their efficiently incurred levels.

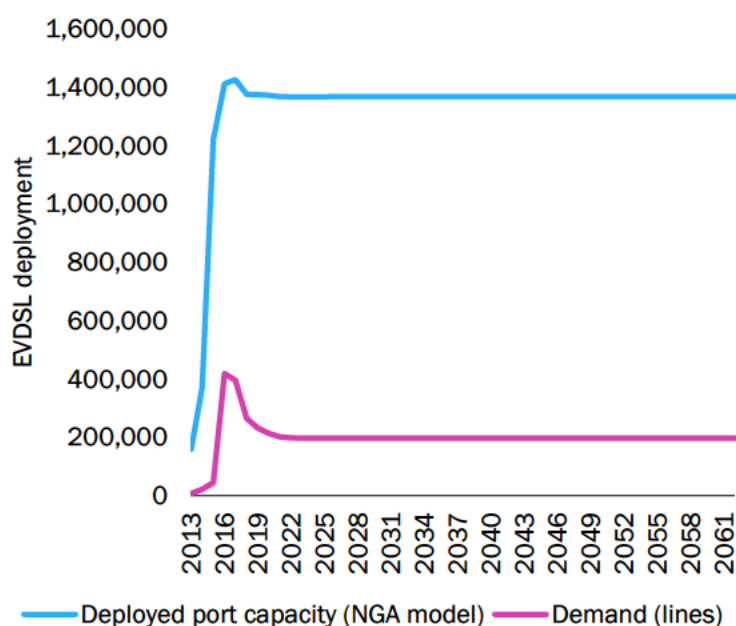


Figure 3.19:
Comparison of
deployed capacity and
demand for EVDSL
ports [Source:
Analysys Mason,
based on latest NGA
model, 2021]

In a separate analysis, we have used the latest NGA model to calculate two alternative EVDSL DSLAM deployments.

- Alternative 1: A more efficient roll-out would replace large 1728-port DSLAMs with small 192-port DSLAMs once the demand required at each exchange declined to a lower level. This estimate demonstrates a reduction in the contribution cost of EVDSL, from EUR1.34 to EUR1.11 per line. It should be noted that this estimate is approximate, and we would expect that an even more efficient deployment could be achieved, for example by using up to four small DSLAMs as an alternative to one large DSLAM.
- Alternative 2: Secondly, a roll-out using small 192-port DSLAMs in multiple configurations as required by the demand at each exchange results in a significantly more cost-effective deployment. This is because it avoids the over-capacity of deploying large 1728-port DSLAMs which are only really needed for a short transient peak, and in a small number of exchanges. This second estimate demonstrates a significant reduction in the contribution cost of EVDSL, from EUR1.34 to EUR0.82 per line.

Figure 3.20 below compares the DSLAM capacity deployments in the latest NGA model with the two alternatives presented above, highlighting that a more reasonable and efficient utilisation can easily be obtained than that indicated by the latest NGA model.

Figure 3.20: EVDSL DSLAM deployment cases [Source: Analysys Mason, 2021]

	Actual EVDSL demand	Latest NGA model port capacity (TERA)	Alternative 1 (Analysys Mason)	Alternative 2 (Analysys Mason)
2016 (in thousand lines)	418	1412	1285	597

	Actual EVDSL demand	Latest NGA model port capacity (TERA)	Alternative 1 (Analysys Mason)	Alternative 2 (Analysys Mason)
2026 (in thousand lines)	197	1369	879	322
Utilisation in 2026		14%	22%	61%
Contribution to unit cost, per month		EUR 1.34	EUR1.11	EURO.82

3.5.5 The latest NGA model costs are out of date: 2016 TD inputs (i.e. from Eircom) and Eircom derived figures are used in several places, and are out of date given cost reductions in Eircom

Figure 3.21 below shows the list of dated cost inputs which should be updated in the latest NGA model.

Figure 3.21: List of cost inputs that need to be updated in the latest NGA model [Source: Analysys Mason, 2021]

Input	Cost (EUR)	Contribution to final costs – 19/20 (EUR)	Source
Wholesale billing and administration cost	0.50	0.15 – FTTC 0 – EVDSL	Confidential; potentially Eircom (FY2014) ²⁹
Carrier billing and administration	0.50	0.5 – FTTC/EVDSL	Eircom (FY2017)
VDSL migration cost	0.10	(0.1) – FTTC/EVDSL	Confidential
NGA common cost	3 706 677	1.33 – FTTC/EVDSL	Eircom (FY2016)
NGA common cost	10 251 017		Eircom (FY2016)
Broadband repair cost	5 393 646	0.51 – FTTC/EVDSL	Eircom (FY2016)
Annual power requirement costs – FTTC	1 872 843	~0.32 – FTTC	Eircom (FY2016)
Annual power requirement costs – EVDSL	223 065	~0.13 – EVDSL	Eircom (FY2016)
Annual land and building cost	319 563	~0.04 – FTTC ~0.02 – EVDSL	Eircom (FY2016)
NGA cabinet-related maintenance	550 477	~0.08 – FTTC ~0.04 – EVDSL	Eircom (FY2016)
Total contribution from costs sourced from Eircom		2.83 – FTTC 2.43 – EVDSL	

²⁹ Based on 5.261 of ComReg15/67 making reference to wholesale costs derived from 2014 regulatory accounts

Evidence of TERA's reliance on out-of-date Eircom inputs appeared in the March 2017 documentation of the draft NGA model before it was finalised for the 2018 Pricing Decision

When TERA developed the NGA model, it explicitly relied on inputs and information from Eircom. In TERA's model update note for ComReg³⁰ produced for this consultation, TERA states that "*the hypothetical efficient operator's operating costs are not those that Eircom reports in its accounts ... but rather those of operating the asset base derived in a bottom-up logic*".

This new statement from TERA contradicts the evidence in Figure 3.21 which shows that various inputs are 'top-down' total common costs based on out-of-date Eircom information, or per-unit figures derived from out-of-date Eircom inputs. Any input based on data from Eircom in 2016 can readily be updated or checked for 2019 or 2020 based on the most recent and therefore current efficient standards of costs appropriate for the Irish operating situation (which can be obtained from comparable Eircom data, or equivalent data from other wholesale operators such as SIRO).

Of further concern is that the unit prices of equipment are sourced from an even older NGA model 'updated by Eir'.


This evidence calls into question the reliability of the latest NGA model for setting FTTC prices for the period 2021–2024, and suggests that TERA has failed to properly assess, as requested by ComReg,³¹ "*an assessment of the NGA model, in particular with respect to elements outside the scope of the [updates for LLU, SLU, NGA Link, and WACC]*".

The source of information used in the NGA model is shown in Figure 3.22.

³⁰ Section 3.1 of TERA's NGA/NGN models update, 14 August 2020

³¹ Section 1 of TERA's NGA/NGN models update note, 14 August 2020

Figure 3.22: Slide 5 of TERA's NGA wholesale cost model documentation [Source: TERA, 2017]



Sources of information

- Several sources of information have been used:

Source	Use
Integrated Broadband and fixed Voice Forecast FY17 to FY26	December 2016 broadband volumes per site and technology (including rival platform data)
AMP Volumes per sites and per technology	Historical take-up curve
300 k Plan phasing	FTTH target sites and phasing
OPEX LLU model	Calculates OPEX level
NGN BU-LRIC model	<u>Bitstream</u> Backhaul cost calculation Inter-aggregation nodes link and <u>exch</u> to <u>agg</u> link for VUA costs calculation
Former NGA model updated by <u>Eir</u>	Unit prices of equipment Number of lines per exchange Engineering rules
<u>Eir's 2015/16 HCA Accounts</u>	<u>Opex</u> , Common and indirect cost for <u>equipments</u>

Ref : 2016-28 5

An amount of EUR10 million plus another EUR3.7 million of common costs, sourced from Eircom (FY2016), need to be reviewed and updated

First, the use of Eircom's decision on what constitutes common costs is not appropriate, as discussed with regards to the ANM in Section 3.3.5 of this report.

Second, no attempt has been made to identify the equivalent up-to-date figures from Eircom's FY2019 accounts (or the FY2020 accounts that are now available).

Third, no attempt has been made to check whether the EUR10 million plus EUR3.7 million of common costs sourced from FY2016 Eircom is not being double counted with the EUR38 million included in the ANM.

Finally, footnote 54 of the Cartesian ANM specification document³² indicates that Cartesian has removed 'core' network opex from the costs included in the ANM, but does not say that opex included in the latest NGA model has also been excluded from the costs in the ANM. This applies to both non-common costs (e.g. R&M relating to FTTC DSLAMs, line cards, etc.) as well as the common costs which are incorporated into the latest NGA model. It is clearly stated that TERA has not made any

³² Access Network Model, Specification Document, October 2020 by Cartesian

adjustments to the costs in the latest NGA model. This highlights inconsistencies between the ANM and NGA, and also highlights that the potential for double counting or over-recovery of opex cost categories included in both models has not been checked.

Broadband fault costs are sourced from Eircom

No attempt has been made to check any double counting between the access network fault and maintenance costs derived from Eircom accounts included in the ANM, and the broadband fault costs sourced from Eircom in the latest NGA model. This cross-check is needed because the cost base of Eircom has changed since the latest NGA model was populated and the classification of costs as either access (and therefore part of the ANM), or broadband (and therefore part of the NGA) may no longer be consistent.

Fault cost per line has not been updated

The fault cost per line of EUR0.63 has not been updated to reflect the ANM HEO footprint. This update is necessary, given that openeir reflects the Eircom network's nationwide footprint and this value is based on Eircom data rather than data set by ComReg as an HEO cost.

In addition, no attempt has been made to check any double counting between the fault and maintenance costs derived from Eircom accounts included in the ANM, and the additional EUR0.63 in the latest NGA model.

Capital costs for active cabinet and cabinet plinth in the latest NGA model, sourced from outdated Eircom inputs, are extremely high compared to corresponding costs in other European access models

The capital costs for active cabinet (EUR6066) and cabinet plinth (EUR7078) in the latest NGA model, which are based on 2016 inputs, are extremely high compared to the active cabinet (EUR4000) and cabinet plinth (EUR150) costs in the Greece NGA model, which are based on 2019 inputs.

This suggests that the cost inputs in the latest NGA model (which on the basis of TERA's 2017 documentation appear to be sourced from "a former NGA model updated by Eir") need to be thoroughly reviewed and updated with more recent information reflecting the costs of deploying FTTC nationwide in Ireland.

The input of a 'double count' of EUR0.10 shows that the model needs 'manual' adjustments to make it consistent with other models

This input needs to be reviewed in line with the costs allocated in the ANM, to identify the scope of any potential double counting across the models and update the value accordingly. Without this update the model cannot be relied upon to provide correct cost results and to ensure that there is no over-recovery of costs.

The assumption of an extra 30% 'admin' charge for SLU links indicates double billing for wholesale administrative costs

It is not clear or explained why SLU (which is not billed as a standalone wholesale product, but as a proportion of a VDSL service) requires extra wholesale administration. This input needs to be reviewed in line with the wholesale administrative charge incurred by an efficient operator (and/or based on Eircom's accounts source), to identify the scope of any potential over-recovery or double counting across the models and update the value accordingly.

3.5.6 The NGN model repeats the inconsistencies seen between the ANM and latest NGA models

Customer numbers are inconsistent with the mix of lines in the ANM

The demand forecast in the NGN model for FTTC, EVDSL and FTTH services is inconsistent with the mix of lines in the ANM. This needs to be updated in accordance with the latest analysis in the ANM, and it should be consistent across the three models.

Demand (traffic) volumes are out of date, particularly due to a higher number of FTTH customers

The demand volumes in the NGN model are out of date, as they do not reflect the likely increase in traffic from the growing number of FTTH customers which is fundamentally assumed as the starting point of the modelling, and is reflected in the ANM.

The higher capability offered by FTTH across the modelled access network is highly likely to lead to larger core network traffic consumption (GBytes per month). This is particularly the case given that ~300 000 homes served by ADSL in 2016 in the RC area are now assumed to be served by FTTH.

The assumption that FTTH will be deployed in the next five years drives additional CEI costs as a result of including FTTH growth in the ANM, but the impact of FTTH has been omitted from the NGN model, where cost reductions due to higher traffic are expected. This likely results in NGN model cost outputs (which are used as input in the latest NGA model) being higher than necessary (given the higher traffic expected) which does not promote the interests of FTTC end users who would be over-paying for the associated capacity elements, to the benefit of FTTH users.

Mix of local and remote customers is not consistent with the ANM HEO

The NGN model also applies a mix of local and remote customers connected to VUA. The data on the availability of local and remote VUA at the various MDF/ODFs across Eircom's network needs to be updated. The NGN model currently uses data from 2016 and this will be inconsistent with the positioning in the ANM which uses a new scorched-node approach to cabinets and remote switches.

3.6 Operating costs and common costs are out of date and not reflective of an efficient operator, leading to over-recovery of efficiently incurred costs by Eircom

3.6.1 The cost base of the ANM model uses out-of-date information

The operating costs and common costs included in the ANM are based on the average of the FY2017/2018 and FY2018/2019 AFIs.³³ The model does not capture the latest FY2019/2020 data, which is now available.

3.6.2 The cost base of the latest NGA model uses out-of-date information

Many of the relevant costs included in the latest NGA model are based on FY2015/2016 data, which, at the time of writing, is four years out of date. This reduces the credibility and the accuracy of the model results for FY2020 and the upcoming years.

3.6.3 Costs have trended downwards in recent years

Eircom's accounts reveal that the operating costs are following a downward trend, despite FY2015/2016 showing a slight increase due to exceptional circumstances.³⁴

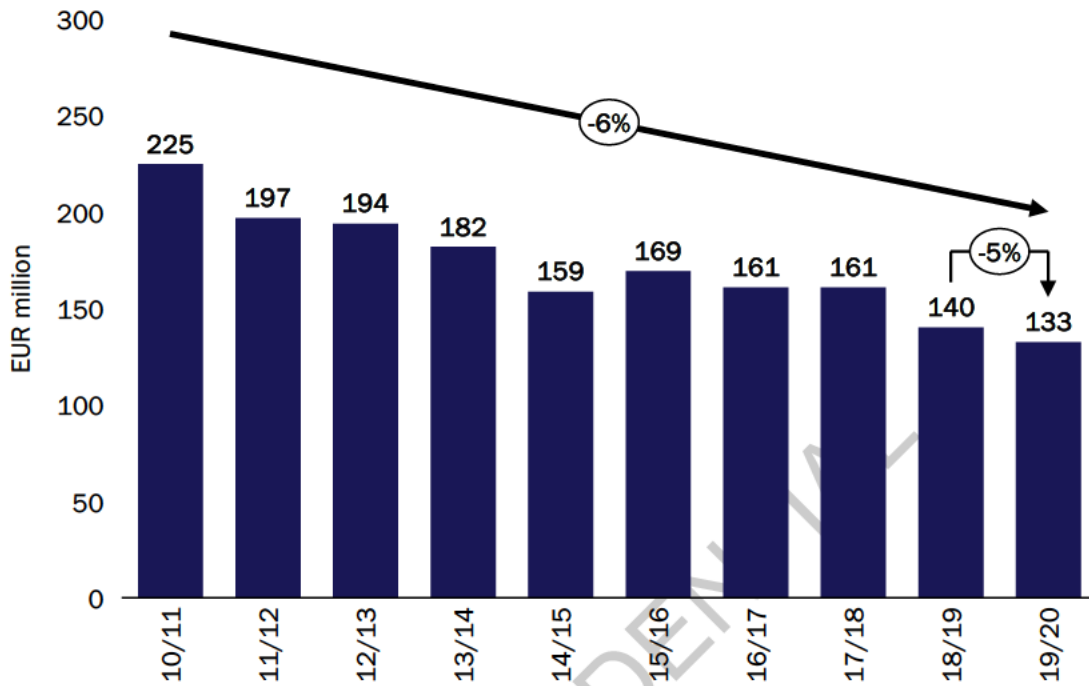
Figure 3.23 below shows the total operating costs (excluding depreciation) recorded under Eircom categories "Wholesale Fixed Narrowband" and "Unbundled Access and Wholesale Broadband Access" and demonstrates the downward trend in Eircom's costs. In the last year, total operating costs (excluding depreciation) have decreased by 5%, with a sustained CAGR of -6% from FY2010/2011 to FY2019/2020.

³³ AFI = additional financial information. Paragraphs 5.123, 5.124, 5.125 and 5.138, 2020 ANM pricing consultation

³⁴ Low storm activity in the prior year (FY2014/2015)

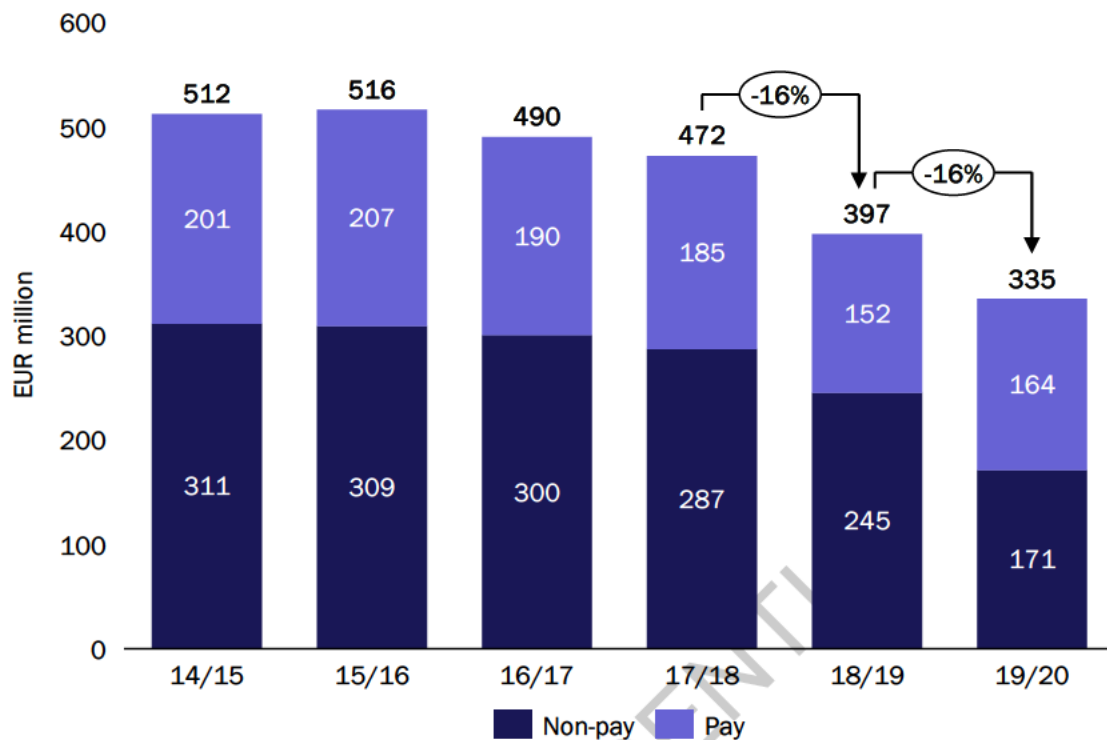
Figure 3.23: Level and change in Eircom's operating costs (excluding depreciation) recorded under Eircom categories "Wholesale Fixed Narrowband" and "Unbundled Access and Wholesale Broadband Access"

[Source: Analysys Mason, based on Eircom historical cost separated account, 2021]



As illustrated in Figure 3.24 below, pay-related and non-pay costs in Eircom's annual reports appear to be following the same trend, with a decrease of 16% from FY2018/2019 to FY2019/2020, in line with the decrease observed in the historical cost separated account in Figure 3.23.

Figure 3.24: Pay-related and non-pay costs [Source: Eir group annual reports, 2020]



We also highlight that a significant proportion of cost savings appear to have been made in the network and wholesale side of the business, as opposed to savings in retail activities. For example, the Incentivised Exit Scheme, which is regarded as a major cost-saving initiative mentioned in Eircom's annual report for FY2019/2020,³⁵ mostly affected staff working in the operational and technical side of the business closely related to wholesale network services. It can be observed that the number of operational/technical staff decreased by 554 between FY2014/2015 and FY2019/2020. In addition, the annual report for FY2018/2019 mentions that *"The reduction in pay costs was primarily due to a combination of lower contractor costs and savings from the voluntary redundancy programme launched in the prior year"*. Both contractor costs and the redundancies, mostly in the operational/technical division as discussed, are related to the services accounted for and sold by the wholesale business.

The most recent data therefore provides additional evidence of the sustained cost declines which should be reflected in the ANM and in the latest NGA model used to inform regulated prices.

³⁵ Eircom Holdings (Ireland) Limited, Annual Report for Bondholders, Year Ended 30 June 2020, Restructuring and cost transformation programme.

4 Comments on Section 4 of 2020 ANM pricing consultation: “Price Control and cost methodologies for PSTN WLR in the Regional Low-Level FACO Market”

In this section, we comment on ComReg's proposal for price control and cost methodologies for PSTN WLR in the Regional Low-Level FACO Market, as set out in the 2020 ANM pricing consultation.

4.1 Q2 on use of TD FAC and BULRAIC+ for WLR

Q2 Do you agree with ComReg's preliminary view that the monthly charge for PSTN WLR in the Regional Low-Level FACO Market should be set using the TD FAC approach based on Eircom's HCAs for the copper loop component and a BULRAIC+ approach for the active equipment? Please provide reasons for your response.

4.1.1 ComReg's implementation of common cost allocation in the ANM model does not appear to properly implement its methodological choice to use TD FAC and BULRAIC+ for setting PSTN WLR charges

ComReg proposed to use TD FAC and BULRAIC+ for setting PSTN WLR charges. ComReg's ANM model does not properly implement that methodology due to its treatment of common costs.

Table 9 characterises LRAIC+ as “(including) a mark-up to allow for the recovery of common corporate costs typically using an equi-proportionate mark-up (EPMU)” and FAC as “(attributing common) costs between the various services offered by the operator”. Therefore, by not allocating common costs to all services, what ComReg has implemented is not TD FAC and BULRAIC+.

In addition, an FAC approach should take a share of all costs ('fully allocated'), yet the TD implementation of the calculation does not include common costs shared to PSTN WLR lines in the IA.

This highlights ComReg's inappropriate decision on the allocation of common costs across the costing of all fixed access and CEI services. Section 3.3.7 discusses further how ComReg's approach is inconsistent with the EC Recommendation.

5 Comments on Section 5 of 2020 ANM pricing consultation: “Cost Modelling Approach for the Access Network Model (ANM)”

In this section, we comment on ComReg’s proposed cost modelling approach for the ANM, as set out in the 2020 ANM pricing consultation.

5.1 Q4 on the Service Demand module

Q4 Do you agree with that the assumptions and approaches used to model demand in the Service Demand module? Please provide reasons for your response.

5.1.1 The allocation of demand forecasts by exchange-footprint is unreliable

Given the way the geospatial module works (i.e. the assumption that Eircodes are assigned to the closest exchange), ComReg is unable to use the actual demand by exchange and has developed a set of assumptions to apportion national demand by exchange-footprint:

- 100% availability and technology share for respectively FTTC, FTTH and ADSL in respectively UC, RC and NBP-IA
- 100% SIRO FTTH availability “at an exchange-footprint was assumed if at least one SIRO FTTH line was active at that exchange-footprint in 2019 or if there was at least a 50% coverage of the premises in that exchange-footprint”³⁶
- “Cable services and FWA availability were assumed constant based on the uptake of these services at Q2 2019 in each of the exchange-footprints”³⁷
- FTTC lines apportioned evenly between the premises in the UC area rather than using actual FTTC lines by Eircode
- “Eircom total active lines are apportioned to exchange-footprints based on the total count of premises in each-exchange footprint after considering whether competing services were active at these premises”³⁸
- The apportionment does not seem to differentiate between residential and business premises (with the exception of FTTC) or to take into account the fact that some exchanges would have a higher proportion of business premises than others
- There is an assumption that all premises in an exchange-footprint can access fibre as soon as fibre service is available in that exchange-footprint

³⁶ Paragraph 5.37, 2020 ANM pricing consultation

³⁷ Paragraph 5.37, 2020 ANM pricing consultation

³⁸ Paragraph 5.38, 2020 ANM pricing consultation

- Copper is decommissioned five years after fibre is deployed.³⁹

Those various assumptions interact in a complex way and lead to demand forecasts by exchange-footprint which are unrealistic. This can be seen most easily by comparing the ANM with actual service availability:

- FTTC is available at 992 of 1226 exchanges (81%) (based on Eircom's NGA APQ and Masked CLI file⁴⁰)
- the ANM locates FTTC lines at 1123 of 1148 exchanges (98%).

The spreading of FTTC demand across 98% of exchanges reduces the economies of scale which exist for FTTC areas, and instead causes FTTC inputs (LLU and SLU) to pay disproportionately more for areas which have lower economies of scale (being RC and IA areas). The presence of FTTC in the ANM at 131 additional exchanges, particularly where those exchanges include mainly rural areas, will increase the cost of UC services, particularly LLU and SLU. The inappropriateness of the algorithm can easily be observed by using the Ardagh (ADH)⁴¹ exchange as an example:

- ADH is an exchange that currently has ~380 active copper lines (from 727 premises).
- ADH supplies FTTC services in the ANM, but in reality FTTC is not available at this exchange (which is also the case at the other 130 exchanges of this type).
- In the model, ADH also has 15 ISDN basic lines and 2 primary rate ISDN users, which is unlikely given the characteristics of the village. These 17 lines are more likely to be present in urban areas, further supporting the economies of scale in UC FTTC areas.
- The ANM allocates nine FTTC UC lines to ADH and, according to the allocation rules of the model, these nine lines will pay for the costs of the exchange building (along with two other CGA UC lines).
- The ANM deploys around 230 rural FTTH lines, which suggests that IA FTTH may be serving 100–200 premises in Ardagh.

ComReg should ideally apply an alternative algorithm based on data rather than assumptions, such as:

- Either using Eircode data:
 - identify the current services taken by Eircode
 - use the new mapping from Eircodes to exchanges to re-calculate the demand by exchange
- And/or using other data that shows take-up of services by exchange (such as billing information):

³⁹ Paragraph 5.40, 2020 ANM pricing consultation

⁴⁰ Source: Sky Ireland

⁴¹ Ardagh appears to be a village in County Longford, with a population of around 1000 in its two electoral divisions. There is little commercial development: two pubs, both called Lyons, a small shop, post office and a repair shop, primary school and community centre. (Source: Ardagh Local Area Plan 2006–2012)

- identify the current services taken by address included in the billing information (address at which service is provided rather than address at which invoice is sent)
- use mapping of address included in the billing information to exchanges to re-calculate the demand by exchange.

This would provide a more solid starting base than the broad assumptions listed above.

If ComReg is unable to apply a data-based approach, it should revisit its assumptions to address the problems we have identified above and avoid the largest distortions.

5.1.2 The copper switch-off assumptions lead to inefficient and distorted results

The copper network is switched off last in the NBP-IA

The model sets the copper switch-off date to be a specific number of years after the enablement of Eircom's FTTH network in an area, which results in the legacy network being switched off last in the IA.

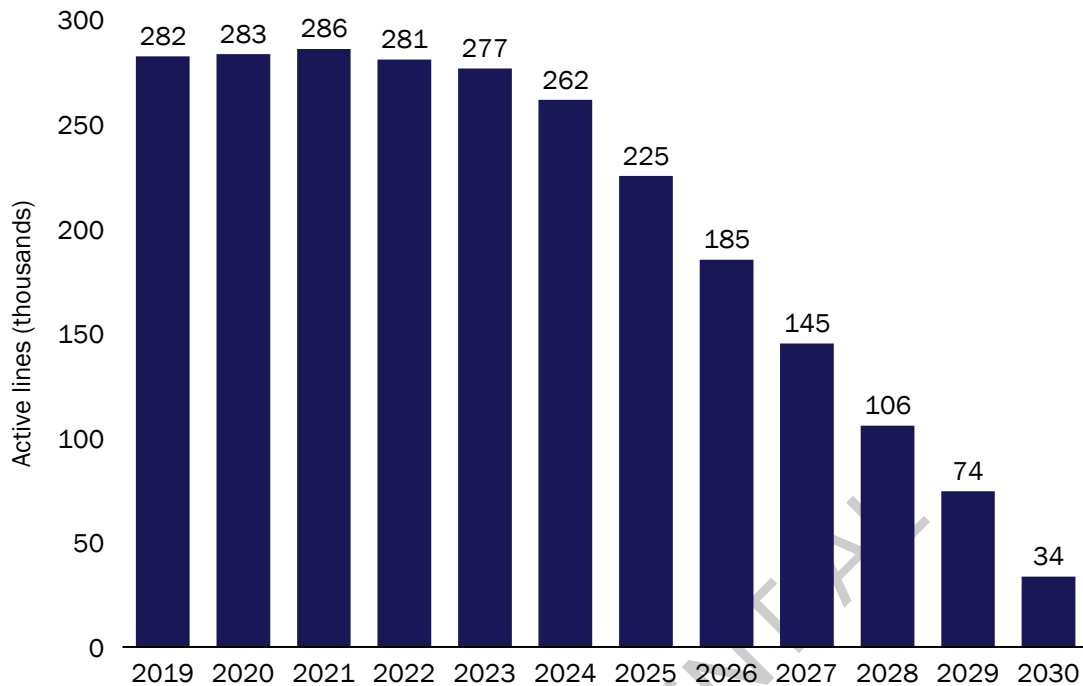
It is inefficient that the geographical network area that ComReg considers to be the 'most uneconomic' is maintained for the longest time, especially given the ongoing NBI deployment. The fact that the copper network in the IA continues for the longest time, and amounts to many thousands of lines which continue to earn revenue over the modelled decade (2020–2030) emphasises the ability of these lines to support the recovery of common costs from the outset.

In addition, this late switch-off is not discussed in 2020 ANM pricing consultation document and can only be seen by investigating the demand module in detail.

Approximately 19% of Eircom's active lines do not contribute to common costs over the price control period

The number of lines not contributing to the recovery of corporate common costs averages ~266 000 over the next five years of price control (see Figure 5.1), or 19% of the average active line base over the same period (~1 433 000 average).

Figure 5.1: Active lines not recovering common opex [Source: Analysys Mason, based on the ANM, 2021]



The commercial costs recovered from copper and fibre are extremely distorted, with most costs loaded onto copper services

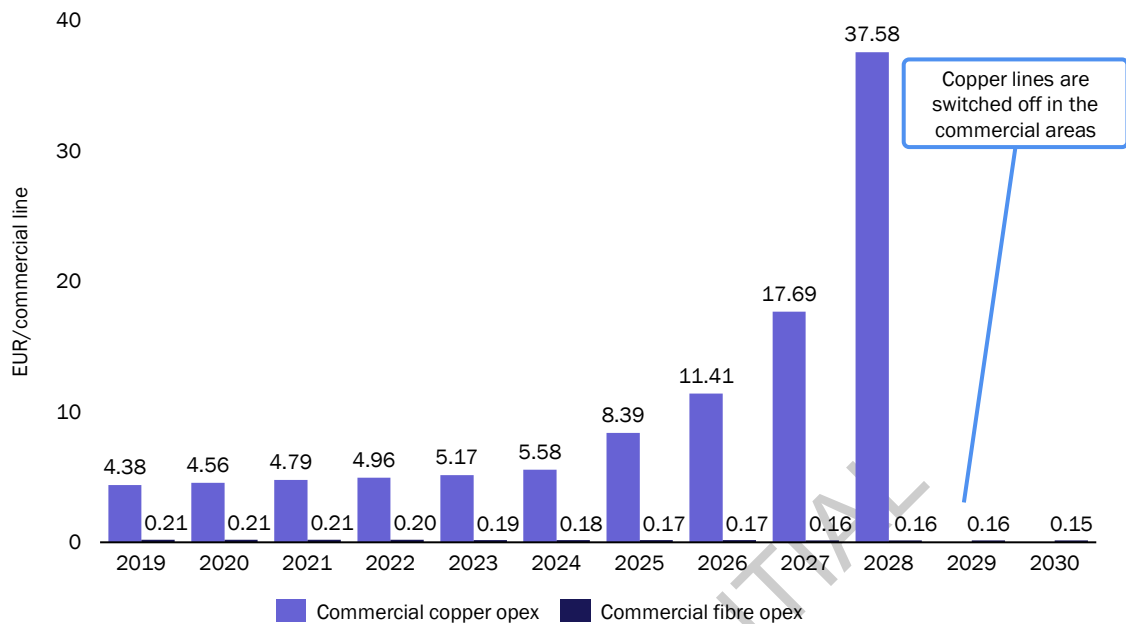
Commercial copper and fibre costs are based on network land and building costs: “*The Network Land and Buildings costs that are modelled directly in the ANM are limited to those parts of Exchange buildings that are associated with access cables (mainly the MDF).*”⁴²

These costs do not change over time, as the cost trend applied to them is set to zero, and they are not scaled in line with the change in copper and fibre demand. Therefore, due to the gradual copper switch-off, the commercial copper opex is recovered over a decreasing number of lines, which leads to a rapidly increasing cost per line. As customers migrate to FTTH and the total number of fibre lines increase, the cost per fibre line falls further as shown in Figure 5.2.

ComReg should adjust the distribution of network land and building costs to scale and distribute uniformly according to the lines active at each exchange building.

⁴² Paragraph 5.78, 2020 ANM specification document

Figure 5.2: Commercial copper and fibre opex recovered per commercial line [Source: Analysys Mason, based on the ANM, 2021]



5.2 Q5 on the Geospatial module

Q5 Do you agree with ComReg's preliminary views that the Geospatial module is appropriate for dimensioning the access network (copper and fibre) of a HEO with Eircom's network presence in Ireland? Please provide reasons for your response.

5.2.1 The list of exchanges used for the geospatial modelling does not reflect the latest data

The geospatial modelling is based on the same list of 1148 exchanges as in the Revised CAM (2016). Cartesian has not used the more up-to-date list of 1203 exchanges provided by Eircom (2019) because many of the 55 additional exchanges have been created in recent years and consequently do not have reliable HCA data.⁴³ This would lead to longer loops than necessary if all 1203 exchanges had been included.

5.2.2 The geospatial model understates the number of RC premises

Paragraph 4.19 of the ANM specification document suggests ~281 000 premises have been defined as RC, however this significantly understates the actual number of premises that appear to have been defined as RC (based on the variation to the Commitment agreement from 21 November 2019 which indicates 299 239 plus 42 730 premises, totalling ~342 000). We believe that the majority of the discrepancy in numbers will be IA area premises, which will result in a greater sharing of common and commercial costs according to ComReg's methodology.

⁴³ See footnote 69 in paragraph 5.20 of the 2020 ANM pricing consultation

5.2.3 The geospatial model overstates the length and cost of urban road segments required

Paragraph 4.22 of the ANM specification document indicates in bullet 1 that road segments are defined according to the majority number of premises attached to the road. This means that long road segments which head out of a town and into the countryside will be classified as urban, and paid for entirely by the urban households (through the standalone UC footprint), even though the majority of the road length (and its cost) are to reach RC households further out of town.

The cost which is loaded entirely onto the urban footprint is then further overstated by the assumption indicated in Figure 27 of the ANM specification document, which is that transition road sections (i.e. sections that are partly in rural and non-rural areas) are set to underground, increasing the cost above that required for rural overhead cables. The number of cables deployed along the length of the road segment is also related to the total number of premises attached to the road segment, hence a long segment serving the edge of town will include a long (underground) high-capacity cable to reach a number of out-of-town RC premises. Figure 40 of the ANM specification document suggests that the road segment is covered from the first to the last premises of the road section.

The geospatial model should split every road segment which transitions from urban to rural at the shortest point where it is not needed for urban premises, to be consistent with the UC standalone footprint.

Bullet 2 of paragraph 4.22 in the ANM specification document further serves to highlight the need to assign road segments according to the premises served, as the approach taken to assign a no-premises roads to the geographical zone takes no account of whether that road is needed to connect urban or rural premises.

5.2.4 The geospatial model overstates the size of cables required

As mentioned above, the ANM specification document indicates that the capacity of cables deployed along the length of a road segment is related to the total number of premises attached to the road segment.⁴⁴ This is inefficient, as it requires expensive cables all the way to the end of the road. An efficient design would use tapered cables, the capacity of which decrease as they move away from the exchange or from the street cabinet, particularly in areas where cables pass by urban premises at the edge of town out to the rural area premises.

In addition, we note that paragraph 5.82 indicates that total additional cable capacity is 30% due to the extra 10% capacity mentioned in paragraph 5.51, as well as rounding to cable sheath sizes. This uplift is unnecessary when the cable segment is serving urban and rural premises, as the required cable size to reach the rural premises is unlikely to be 30% larger than the urban premises set. This inefficiency leads to more expensive cable sheaths being deployed in rural areas which in turn means that fixed access services costs are assessed above their efficiently incurred levels. This is detrimental to the interest of end users.

The additional cable capacity is also excessive and inefficient compared to what was previously assumed in the Revised CAM. This is effectively allowing the ANM HEO to deploy an over-

⁴⁴ Paragraph 5.81 indicates 1.1 pairs/fibre per premises passed, so in effect there is no tapering

dimensioned cable network for copper, which is about to be retired. This is evident from comparing Figure 47 in the ANM specification document with Slides 131 and 132 in the Revised CAM documentation:⁴⁵

- the Revised CAM assumes $\times 1.1$ copper deployment for the E-side, and rounding up of cable size for the D-side
- the ANM applies $\times 1.1$ and rounding up for both the E-side and D-side.

5.2.5 The geospatial model overstates the number of ducts required

Paragraph 5.84 in the 2020 ANM pricing consultation indicates that the number of E-side and D-side ducts depends on the number of sub-ducts (used for fibre) and copper cables. The use of tapered copper cables discussed in Section 5.2.4 above would therefore reduce the demand for ducts as they move away from the exchange or from the street cabinet.

5.3 Q6 on the Opex module

Q6 Do you agree that the approaches to modelling costs in the Opex module are appropriate? Please provide reasons for your response.

5.3.1 The Opex source needs updating and is too heavily reliant on Eircom AFIs

ComReg indicates in paragraph 5.12 of 2020 ANM pricing consultation that “The financial/costing information obtained from Eircom is largely based on its financial year ending 30 June 2019. Eircom also provided volumes of active lines by service and exchange as of Q2 2019.”

This means that the ANM cost inputs are based on data from 18 months ago.

Eircom's 2020 separated accounts have now been made available and should be taken into account in order to reflect up-to-date classification, Eircom's recent cost reductions and increased allocation of costs to fibre.

Including Eircom's 2020 separated accounts can also allow ComReg to reflect a more averaged level of storm-related costs. (ComReg refers to averaging storm-related costs in paragraph 5.125).

5.3.2 The amount considered by Eircom as common costs appears very high

ComReg seems to have assumed that Eircom's categorisation of common versus non-common costs is acceptable. There is no evidence of scrutiny of this key set of inputs. However, in our view Eircom arrives at a very large amount of common costs. For instance, there is a significant disparity in the number of administrative staff at SIRO and Eircom, and this disparity has further increased in recent times, as shown in Figure 5.3 below.

⁴⁵ TERA, Calculation of prices for the fixed line access network, Draft results presentation, Ref: 2013-51-DB-ComReg

Figure 5.3: Comparison of SIRO and Eircom administrative staff numbers [Source: Sky, 2020]

SIRO Ltd – December 31 2019		Eircom Holdings Ltd – June 30 2020		
SIRO Limited				
Notes (continued)		As of 30 June		
4 Labour costs (continued)		2019 2020		
		(unaudited) (unaudited)		
Average number of employees	2019	Operational/technical.....	1,730	1,639
Operations	70	Sales/customer support.....	1,082	955
Sales	9	Administration ¹	214	369
Administration	15	Total fixed line.....	3,026	2,963
	94	Mobile.....	475	301
		Total fixed line and mobile.....	3,501	3,264

In Q4 2019, SIRO's administrative staff consisted of 15 employees, whereas in Q2 2019 Eircom had 214⁴⁶ employees, which increased to 369⁴⁷ by Q2 2020.

The difference in size must also result in substantially higher administrative costs for Eircom than for SIRO, which are then potentially included in the pool of common costs. This seems to be inconsistent with the consideration that scale and scope has nothing to do with common costs.

In addition, Eircom's administrative staff has increased by 155 employees from 2019 to 2020 which is inconsistent with Eircom's broader initiative of reducing headcount (as discussed in Section 3.6). This inconsistency hints at a possible reclassification of sales/operating staff to administrative functions. Any such reclassification should be excluded from common costs. As Eircom's common costs should not scale between 2019 and 2020 (except, say, for inflation-based salary rises), any significant increase in common costs allocated by Eircom must be fully investigated and excluded from the efficient cost base.

More generally, based on these irregularities and the lack of transparency on how Eircom calculates common costs, it is imperative that ComReg reviews the costs submitted by Eircom, along with the rationale provide with it.

5.3.3 Using the average of AFI data from two years to estimate common costs is incorrect

Paragraph 5.138 of 2020 ANM pricing consultation indicates that common costs are taken from the average of the two most recent AFIs, however this approach lacks rigour, as it is necessary to analyse the level of common costs in both years to establish the correct amount of fixed common costs. Storm events should have no impact on common costs, and there should be no reason to take an average including higher common costs since the lower value should be considered the relevant figure. It is also possible that Eircom has chosen to classify costs as common to suit its own business priorities rather

⁴⁶ Eircom Holdings (Ireland) Limited, Annual Report for Bondholders, Year Ended 30 June 2019.

⁴⁷ Eircom Holdings (Ireland) Limited, Annual Report for Bondholders, Year Ended 30 June 2020.

than a rigorous economic BULRIC+ method, and taking into account Eircom's knowledge of ComReg's previous common cost allocation choice.

5.3.4 The use of a different AFI basis for copper-related opex and fibre-related opex leads to a distortion

Paragraph 5.8 of 2020 ANM pricing consultation shows that copper-related opex is 'uplifted' due to the average of higher storm-related costs in 2018 and lower storm-related costs in 2019, whereas fibre-related costs are defined based only on the lower storm-related costs in 2019. This distorts the cost allocation, including the spreading of indirect costs, loading more costs on copper lines.

More recent 2020 AFI data should also be available now to update the fibre cost base.

5.3.5 Considering working capital as 100% fixed is incorrect

In the 2020 ANM pricing consultation, working capital is treated as 'other common cost' and assumed 100% fixed. Working capital typically relates to the costs of running the business. The larger the business, the greater the working capital required, and as such it should be treated as a fully variable cost. Working capital should also be carefully analysed to ensure that it does not include any inefficiently high amounts in the actual AFIs (e.g. excessively high amounts of cash held as working capital assets).

5.3.6 The treatment of network rates as fixed and common costs does not reflect the reality of rateable valuation

The assumption in the 2020 ANM pricing consultation is that network rates, of ~EUR10 million, are fixed cost, and common cost. However, network rates are determined based on a global valuation, with Eircom treated as a public utility undertaking. Global valuation covers all physical networks, including masts, posts, wires, and other ancillary constructions and buildings. It is done based on 'Net Annual Value' as defined in Section 48 of the Valuation Act, and the public utility undertaking can appeal the value. The Eircom net annual value is EUR80 million and is apportioned by county.⁴⁸ The apportionment by county should in some way reflect the network asset value in those areas. The valuation is done on a five-year cycle, but the firm can appeal the value.

The rateable value of Eircom's network is directly linked to the value of every pole, wire and building in the network. The rateable value is also geographically distributed, and would specifically reduce when NBPIA enters – because an efficient operator would appeal the reduction in its rateable value with evidence of the removal of hundreds of thousands of copper cables and the withdrawal of active services in the IA.

⁴⁸ Central Valuation List, October 2020; see <https://www.valoff.ie/en/publications/central-valuation-list/central-valuation-list-october-2020-.pdf>

Rates should be considered a variable cost associated with every element and should be treated as a mark-up on all annualised costs. Treating rates as fixed and as common does not reflect that it is a variable cost per item, nor an item which Eircom can appeal to have reduced as the extent of its network declines.⁴⁹

In addition, we note from clause 3.8 of Eircom's current pole access licencing agreement⁵⁰ that Eircom passes a portion of Local Authority Rates to access seekers which is calculable based on the pole route accessed. This raises the question as to why such costs are lumped in as common costs at all given they can be allocated to specific routes. The pole routes being used by NBI are easily identifiable and thus there is no reason why they should not be contributing in the same way as any other access seekers that contribute to the cost of network rates.

ComReg's treatment of network rates as a fixed common cost is also inconsistent with Eircom's own treatment⁵¹ of network rates as "*a charge on the revenue-generating capacity of Eircom's network infrastructure*" which clearly indicates that revenue earned on PSTN WLR lines in the IA qualifies for a share of network rates, as well as poles used for NBI's FTTH. ComReg's approach to treat all network rates as a common cost which is then allocated to lines in the commercial areas is equivalent to assuming that an operator not present in the non-commercial area would nevertheless pay network rates on cables, ducts and poles beyond the reach of its network. This would be grossly inefficient and would not be the strategy followed for instance by an investor which chose not to deploy infrastructure in other areas (as it would not pay rates on others' networks). ComReg's approach therefore fundamentally distorts the 'build/buy' signal and is therefore detrimental to the promotion of competition and the interests of end users.

5.3.7 The variable part of input costs obtained from Eircom should be treated as non-common

The model includes tables of input common costs (opex, depreciation, mean capital employed) obtained from Eircom. The common costs are scaled according to the assumption (from Eircom or Eircom/ComReg) of the proportion of the common costs which are fixed; the rest scale with the amount of other costs in the network/model. This highlights that a material proportion of the modelled common costs are actually variable costs which scale with the number of lines and associated line costs elsewhere in the access network. Variable costs which scale with the number of lines and associated line costs should be treated as non-common and allocated with other non-common costs. In particular we note that for the proportion of common costs are scalable then treating as a common cost the amount associated with activity beyond the urban area is an effective cross-subsidy for those costs paid by urban services (i.e. FTTC). This leads to inefficiently high FTTC charges and is therefore detrimental to the promotion of competition and the interests of end users.

⁴⁹ <https://www.valoff.ie/en/publications/central-valuation-list/> and <https://valoff.ie/en/about-us/legislation/working-consolidation-of-valuation-acts-2001-to-2020-august-2020-.pdf>

⁵⁰ <https://www.openeir.ie/wp-content/uploads/2020/05/Pole-Access-Licence-Marked-11022019.pdf>

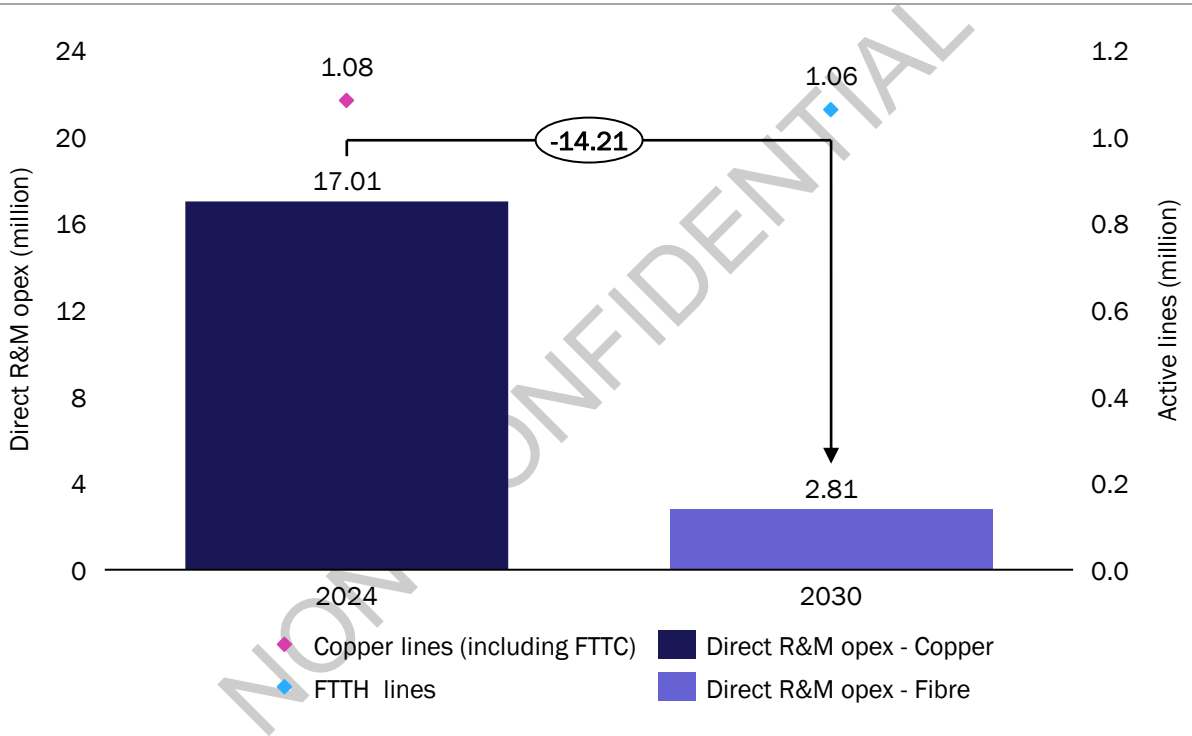
⁵¹ Paragraph 5.142

5.3.8 The modelled Direct R&M opex is substantially higher for a mature copper network than a mature fibre network

Direct R&M opex attributed to copper is substantially higher than Direct R&M opex attributed to fibre. It seems implausible that the Direct R&M opex for a mature and efficient copper network is approximately six times more than the Direct R&M opex for a mature and efficient fibre network. From our analysis of the ANM, this substantial difference appears to arise from the scaling applied to line-related opex in the ANM.

Figure 5.4 shows the number of active (commercial) lines and the direct opex attributed to two similar-sized networks, highlighting an implausible six-fold reduction in such costs between copper and fibre.

Figure 5.4: Active lines and Direct R&M opex for copper and fibre [Source: Analysys Mason, based on the ANM, 2021]



There are a number of possible sources of this major discrepancy.

First, the opex model uses AFIs as inputs, as shown in Figure 5.5 below.

Figure 5.5: AFI costs used as model inputs [Source: Analysys Mason, 2021]

Reference
I.Opex.1

Opex

Cost Type	Units	Copper	Fibre	Provisioning
Direct I&P	eur	0	0	3,997,870
Direct R&M - Line	eur	28,736,509	1,953,253	0
Direct R&M - Network - MDF Related	eur	2,737,594	42,992	0
Direct R&M - Network - Pole Testing	eur	982,079	27,997	0
Direct R&M - Network - Tree Trimming	eur	352,495	10,887	0
Direct R&M - Network - Preventative	eur	841,537	0	0
Indirect Network Management	eur		30,118,976	
Indirect IT	eur		776,410	
Network Land & Buildings	eur	832,106	28,047	0
Network Power	eur	164,916	217,064	0
Common Network Rates	eur		9,669,398	
Common IT	eur		5,417,872	
Common Accommodation	eur		322,413	
Common Transport	eur		286,633	
Common PersAdmin	eur		1,706,336	
Common Other	eur		10,362,054	

ComReg appears to have assumed that Eircom's allocation of copper-vs-fibre costs in the AFIs was acceptable. However, given that Eircom is only at the early stages of the FTTH process, the allocation is likely to be uncertain, with the possibility that many costs are categorised as 'network' by default and therefore end up in the copper cost category.

Second, when we perform a calculation using the R&M – line opex which has been allocated by Eircom itself (as shown in the AFI-sourced values in Figure 5.5), we obtain an average cost per line which Eircom believes is very similar between copper and fibre, as shown in Figure 5.6 below.

	Copper	Fibre
Direct R&M – line opex, EUR	28 736 509	1 953 253
Number of commercial copper lines, 2019	1 024 194	78 815
Average opex per commercial line, EUR	28	25
Total number of copper lines, 2019	1 306 592	
Average opex per line, EUR	22	

Figure 5.6: AFI allocated opex per line
[Source: Analysys Mason, based on ANM, 2021]

We conclude that the scaling approach in the ANM model grossly distorts the opex per line associated with copper and fibre deployments, which effectively distorts competition between copper NGA and fibre NGA technologies and services.

5.3.9 The allocation of fibre costs non-common opex between FTTC and FTTH is flawed

Paragraph 5.152 of 2020 ANM pricing consultation indicates that “The same logic is followed for fibre related costs except Opex is initially split between FTTC/FTTH services based on active lines count.”

In the Opex module, we see that this leads to an allocation of 71% to FTTC and 29% to FTTH.⁵²

This cost allocation based on the number of lines does not follow cost causation. It fails to take into account the key factors that drive the relative consumption of non-common opex by FTTC and FTTH:

- that FTTC fibre links are buried/ducted, short and shared with FTTH, whereas FTTH lines are longer, and go all the way to the house
- that FTTH lines have more fibre (in number and length of fibres) than the FTTC fibre
- that FTTH lines also have aerial fibre needing more maintenance (FTTC fibre is all ducted/buried, and largely protected by the maintenance of ducts).

Overall, the allocation used by ComReg significantly overloads the fibre opex onto FTTC fibre links. It needs to be replaced by an accurate approach following cost-causation principles.

5.3.10 The combination of Eircom's AFIs and ComReg's allocation leads to implausible costs for copper and FTTH line

The combination of Eircom's AFIs split between copper and fibre (discussed in Section 5.3.8 above) and ComReg's scaling and allocation of fibre costs non-common opex between FTTC and FTTH (discussed in Section 5.3.9 above) lead to implausible costs for copper and FTTH line, as shown in Figure 5.7. We note in particular that if these cost differentials were reflective of reality, we would have expected Eircom to have already rolled out or to be rapidly rolling out FTTH as by far the lowest-cost option.

Figure 5.7: Non-common opex produced by the Opex module [Source: Analysys Mason, 2021]⁵³

Copper			FTTH		
Footprint	Units	Average	Footprint	Units	Average
Urban Commercial	€/line/year	43.54	Urban Commercial	€/line/year	6.35
Rural Commercial	€/line/year	43.54	Rural Commercial	€/line/year	6.35
Intervention Area	€/line/year	38.57	Intervention Area	€/line/year	0.00
Total	€/line/year	42.34	Total	€/line/year	6.35

5.3.11 Provisioning opex should be allocated to PSTN WLR lines rather than to all copper lines

Eircom's AFI statements used for the identification of BU copper and fibre opex allocate all the Provisioning opex to Copper, and none to Fibre. This is explained in paragraph 5.10 of the Cartesian ANM specification document which explains that most of these costs are related to PSTN WLR services, as in particular FTTC and FTTH provisioning is capitalised. These costs are then scaled with the total number of lines, rather than the number of PSTN WLR provisioning events (or lines). These costs, despite being related mainly to PSTN WLR, are then lumped into the total non-common copper network costs and distributed across all copper connections equally. These PSTN WLR related provisioning costs should be distributed to PSTN WLR lines only, according to distribution by

⁵² Cells G33-G34 in sheet "Calc_Opex_Apportionment"

⁵³ Rows 11 to 35 in sheet "Output_Capex"

exchange, including PSTN WLR lines in the IA. Not doing so essentially leads to FTTC lines paying both for their own (capitalised) provisioning costs as well as subsidising the provisioning costs of PSTN WLR lines (by around EUR1 million).

5.4 Corporate common costs are not “reusable/non-replicable” assets and should therefore not be based on TD FAC

The implementation of corporate common costs in the opex module is effectively TD FAC which is not consistent with ComReg’s methodological choices as corporate common costs are not “reusable/non-replicable” assets.

Instead ComReg should ensure that the corporate common costs used in the model are efficiently incurred costs either by modelling them based on a BULRAIC+ approach⁵⁴ or by applying efficiency adjustments.

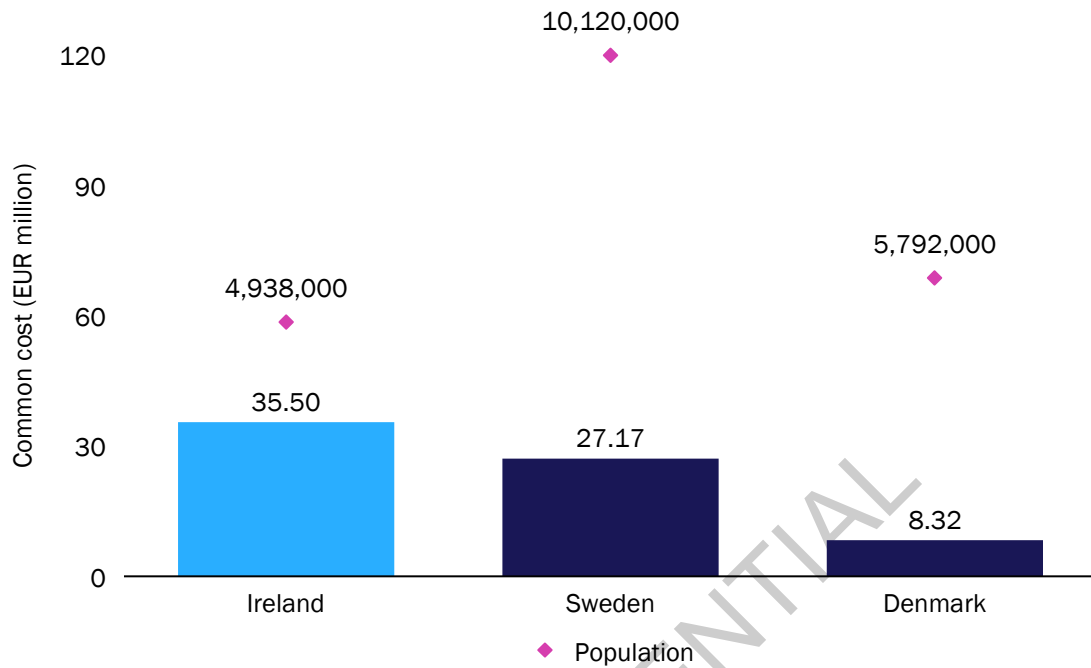
With regards to efficiency adjustments, Section 5.3.2 of this report discusses how the common costs included in the ANM (coming from Eircom) are significantly higher than those of other operators in Ireland. This suggests that the amount of common costs defined in the ANM should not be considered largely fixed, nor common in nature. In addition, Section 5.4.1 below shows that common costs included in the ANM (coming from Eircom) are significantly higher than the ones in other European access models, which again suggests that the approach taken by ComReg in Ireland needs to be updated to reflect an efficient level of common costs.

5.4.1 Benchmarking shows that the common costs, and the resulting common costs mark-ups included in the ANM, are very high

The total common cost costs included in the ANM are substantially higher than the corresponding costs in other European access models with similar or even bigger populations than Ireland, as shown in Figure 5.8 below.

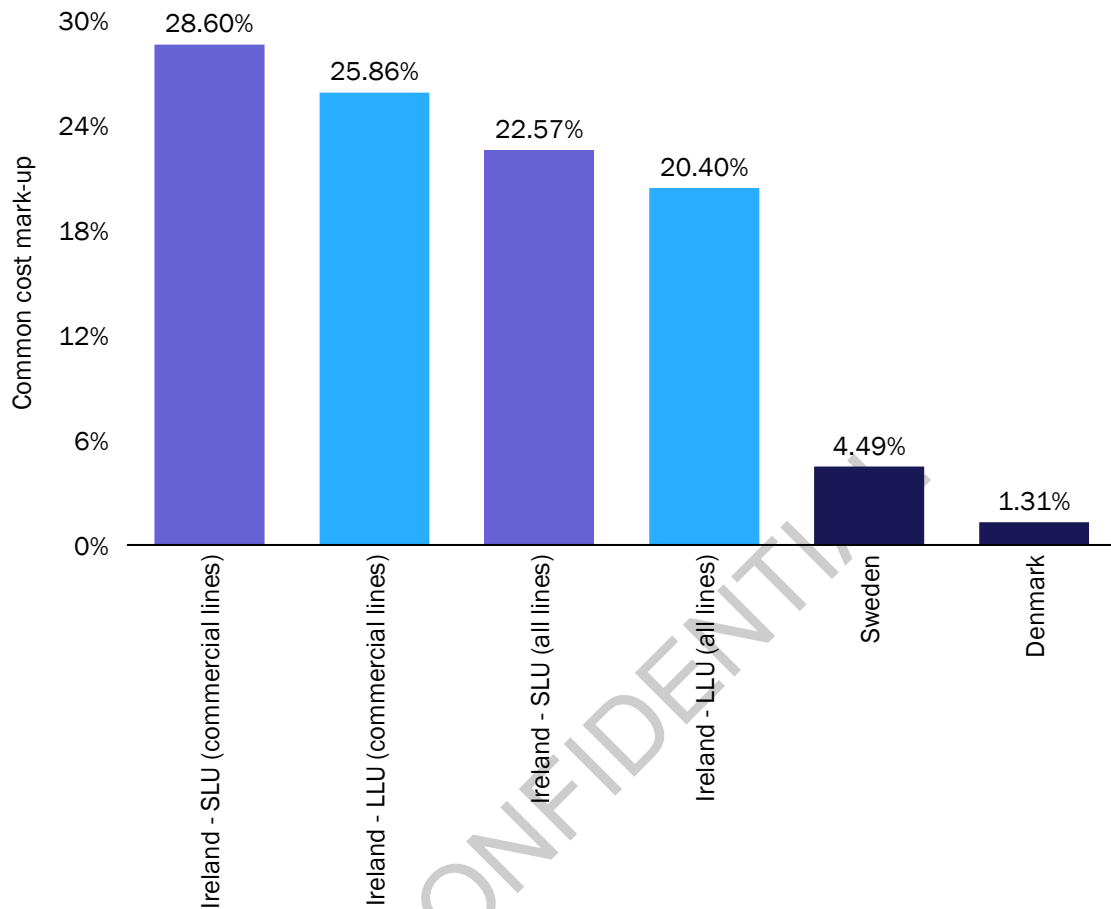
⁵⁴ This is for instance the approach followed by BIPT, the Belgian regulator, for its NGA and NGN models.

Figure 5.8: Benchmark of total common costs in 2020 [Source: Analysys Mason, based on ANM, Danish access cost model (non-confidential), Swedish access cost model (non-confidential), and EIU (population)]



Consequently, this results in excessive common cost mark-ups for SLU and LLU services in the ANM. While this mark-up is comparatively lower when common costs are allocated between all active lines rather than just the commercial lines, it still remains very high, as shown in Figure 5.9 below.

Figure 5.9: Benchmark of common cost mark-ups in 2020 [Source: Analysys Mason, based on ANM, Danish access cost model (non-confidential), and Swedish access cost model (non-confidential)]



5.5 Q7 on the Capex module

Q7 Do you agree with ComReg's preliminary views that the costing approaches adopted in the Capex module are appropriate? Please provide reasons for your response.

5.5.1 The unit capex costs for copper and FTTC networks elements, used to derive network capex, are not based on up-to-date data

The unit capex costs for copper and FTTC networks elements, used to derive network capex, are not based on up-to-date data, and rather use values from the Revised CAM (2016). These network elements also tend to have a negative (i.e. downwards) price trend, due to the increasing technology maturity.

The assumed unit costs and cost trends should be updated with more recent cost information and equipment estimates, for example sourced from Eircom's recent bill-of-materials for cables, trenching work, and active equipment.

This deficiency applies also to NGA equipment (e.g. MSAN active equipment).

5.5.2 The opex-specific costs in the capex model are not based on up-to-date data

The opex-specific costs in the capex model are not based on up-to-date data, and rather use values from the Revised CAM, with the exception of PSTN WLR-specific cost, as seen in Figure 5.10 below. The implication of using old data is that they may not reflect efficiency gains made in recent years. In addition, the use of different sources for different services increases the risk of double counting if the way the costs have been allocated by service has changed.

Figure 5.10: Active port and service-specific opex cost [Source: ANM and Analysys Mason, 2021]⁵⁵

Opex-specific costs	Unit	Cost	Source
MSAN port	EUR/line/month	0.88	Revised CAM
ISDN BRA port	EUR /line/month	0.95	Revised CAM
ISDN PRA port	EUR /line/month	0.67	Revised CAM
DSL port	EUR /line/month	–	Revised CAM
Data traffic	EUR /line/month	–	Revised CAM
LLU-specific costs	EUR /line/year	–	Revised CAM
SLU-specific costs	EUR /line/year	–	Revised CAM
LS-specific costs	EUR /line/year	7.42	Revised CAM
PSTN WLR-specific costs	EUR /line/year	5.11	Eircom (2019)
SABB-specific costs	EUR /line/year	–	Revised CAM
FTTH OLT port	EUR/line/month	0.89	Revised CAM
Copper tie cables	EUR/line/month	–	Revised CAM
Fibre tie cables	EUR/line/month	–	Revised CAM

The reference in paragraph 8.14 of the Cartesian ANM specification document to an ‘input’ from Eircom based on Eircom’s view that “those values should still be relevant” should be disregarded by ComReg as Eircom has no incentive to update information that may lead to lower pricing outcomes. Instead, Eircom should be asked to provide inputs based on its latest information.

We note in particular that a large part of the EUR2.5 per month supplementary charge for POTS FTTC is from the input of EUR0.88 opex per MSAN port shown in Figure 5.10. This input was obtained from the Revised CAM, which itself is based on out-of-date opex, as Eircom did not supply any up-to-date information.

5.5.3 The allocations of E-side copper assets to SLU- and POTS-based FTTC is fundamentally flawed

The allocations of E-side copper assets to SLU- and POTS-based FTTC is flawed in three ways.

⁵⁵ Rows 52-64 in sheet “Input_Opex” in file “ANM_Capex_NonConfidential_ComReg 20101.xlsx”

First, the calculation of the Copper Annual Costs Cost per Line⁵⁶ uses the same number of physical copper active lines⁵⁷ when calculating the costs of the D-side and E-side assets. In other words, it does not take into account the proportion of lines that use only D-side assets (i.e. SLU and non-EVDSL FTTC lines⁵⁸). This is contrary to cost causation.

Second, the Copper Cost Allocation matrix seen in the Capex module shows that SLU receives an allocation of all copper E-side assets (with the exception of cable, joint and termination) as shown in Figure 5.11 below.

Figure 5.11: Copper Cost Allocation Matrix [Source: ANM and Analysys Mason, 2021]⁵⁹

Network Element at Network Level	LLU	SLU	Line Sharing	PSTN-WLR	SABB	ISDN BRA	ISDN PRA
D-Side							
Trench	1	1	0	1	1	1	2
Chamber	1	1	0	1	1	1	2
Pole	1	1	0	1	1	1	2
Duct	1	1	0	1	1	1	2
SC	1	1	0	1	1	1	2
Cable	1	1	0	1	1	1	2
Joint	1	1	0	1	1	1	2
E-Side							
Trench	1	1	0	1	1	1	2
Chamber	1	1	0	1	1	1	2
Duct	1	1	0	1	1	1	2
Cable	1	0	0	1	1	1	2
Joint	1	0	0	1	1	1	2
Termination	1	0	0	1	1	1	2
Manhole	1	1	0	1	1	1	2
MDF Related	1	1	0	1	1	1	2

This allocation matrix is consistent with the use of the same number of physical copper active lines when calculating the costs of the D-side and E-side assets but does not reflect cost causation: SLU, by definition, does not use the copper feeder at all. Analysis of the Consultation Revised CAM (consultation version from July 2015) confirms that SLU does not use E-side equipment and is not allocated E-side costs.

Third, the calculation of the costs for the Supplemental charge for POTS-based FTTC⁶⁰ includes two elements:

- all E-side copper assets⁶¹
- the cost for the MSAN port and the tie cable.⁶²

⁵⁶ Rows 466 to 487 in sheet "Calc_Network_Annual" in file "ANM_Capex_NonConfidential_ComReg 20101.xlsx"

⁵⁷ Calculated as Physical Copper Active Lines = FTTC active lines (POTS and Standalone) + Current Generation Access (CGA) active copper lines (Voice-only, ADSL, ISDN, other business copper)

⁵⁸ EVDSL is not viable beyond 1.5km

⁵⁹ Cells C22:J40 in sheet "Input_Other" in file "ANM_Capex_NonConfidential_ComReg 20101.xlsx"

⁶⁰ Row 83 in sheet "ANM outputs" in file "ANM_Capex_NonConfidential_ComReg 20101.xlsx"

⁶¹ Row 479 in sheet "Calc_Network_Annual" in file "ANM_Capex_NonConfidential_ComReg 20101.xlsx"

⁶² Row 497 in sheet "Calc_Network_Annual" in file "ANM_Capex_NonConfidential_ComReg 20101.xlsx"

The cumulative effect of the three flaws described above is that:

- The copper E-side assets (with the exception of cable, joint and termination) are paid by both SLU- and POTS-based FTTC, thus there is double counting of those costs to FTTC users using POTS-based FTTC
- FTTC users not using POTS-based pay for both E-side assets they do not use (from the SLU) and for E-side assets they use (from the NGA links).

ComReg should make the following changes:

- use different volumes to calculate D-side and E-side costs
- set all copper E-side allocation to SLU to zero.

5.5.4 The capex module assumption that SLU lines need 85% of a line's worth of opex is not backed up by evidence and the correct proportion for SLU appears to be less than 70%

ComReg's assumption that an SLU line needs 85% of a line's worth of opex⁶³ is an arbitrary assumption not backed up by evidence in 2020 ANM pricing consultation.

We note in addition that ComReg has not assumed that PSTN WLR, SABB or ISDN-BRA need more than one line's worth of opex because of additional ports, PSTN equipment, line-cards, etc. At the same time, line sharing is assumed to have zero opex.

There does not seem to have been an attempt to allocate opex on a cost-causation basis (e.g. based on where faults take place, what equipment needs maintenance, how much NE is used) – there is just an arbitrary 85% applied to SLU only.

Examination of the Revised CAM reveals that this percentage is not actually an input assumption, but a ratio calculated on the basis of capex proportion:

Opex proportion for SLU = $(D\text{-side capex} + \text{Final drop capex}) / (D\text{-side capex} + \text{Final Drop capex} + E\text{-side Capex} + \text{NGA capex})$

Calculating this proportion for the UC area which determines the relevant SLU cost results in 53%, however we understand that the opex per line amount has already been divided between copper and fibre (incorrectly in our view; see Section 5.3.8, Section 5.3.9, Section 5.3.10 and Section 5.3.11 of this report), and therefore calculating the opex proportion for SLU (and ignoring the NGA capex part) results in an opex proportion of 67–68% in 2021–2023. This is a material input to the calculation, with the corrected percentage amounting to a reduction in cost of 1 EUR per line per month.

⁶³ Cell E61 in sheet "Input_Other" in file "ANM_Capex_NonConfidential_ComReg 20101.xlsx"

5.5.5 The approach for crossing from minor side to major side does not consider cost

Figure 46 of the ANM specification document suggests that crossing from the minor side (the side with the lower premises density) is done on the basis of least distance, however an efficient operator would do this on the basis of least cost. The least cost approach has not been assessed.

5.5.6 The dimensioning of cable pairs leads to overstatement of cost

In relation to the copper network, as demand is declining and the network is to be shut-down in the near future, there is no need to include the same over-dimensioning of copper pairs⁶⁴ as seen in the FTTH deployment (where demand is increasing, and spare capacities are likely to be needed). The number of copper pairs should be dimensioned on the basis of the required premises without any over-dimensioning for expansion.

5.5.7 Accelerated pole replacement costs are mainly caused by FTTH and deployments in the IA, but the model does not follow cost causation for pole and common pole activities

The accelerated pole replacement in the UC area amounts to around 5000 poles per annum for the period 2020–2024, driven by FTTH.⁶⁵

Around 82% of pole replacement occurs in the IA⁶⁶ over the main pole expansion period (2020–2026). Only 18% of the poles are in commercial areas. In the price control period (2020–2024), a similar 78% of capex is incurred for IA poles, out of EUR90.6 million of pole capex; the model also shows that urban FTTH-driven pole replacement comprises 12.8% of the pole capex, and BAU replacement and additions in the UC area comprises 4.1% of pole capex. This raises two questions:

- Since ~80% of pole activity is related to the IA, it is evident that common costs for pole activities, ~EUR1 million in cost per annum,⁶⁷ should be shared proportionally with the 80% of pole activity in the IA. Instead, these common costs are allocated to 20% of the pole activity represented by the UC and RC areas.
- The majority (~75%) of the UC pole activity is caused by accelerated deployment for FTTH, and therefore the majority of urban pole costs should not be allocated generally to lines in the UC area. However, the capex model allocates the annualised costs of poles deployments ~90% to copper and 10% to FTTH in 2022; 75% to copper and 23% to Fibre in 2024.

⁶⁴ Shown in Figure 47 of the ANM specification document

⁶⁵ Row 223 in sheet "Calc_Capex2 in file "ANM_Poles_NonConfidential_ComReg 20101.xlsx"

⁶⁶ Total of row 239 over total or row 240 in sheet "Calc_Capex2 in file "ANM_Poles_NonConfidential_ComReg 20101.xlsx"

⁶⁷ EUR1 million is identified from row 101 plus row 117 in sheet "Calc_per_pole_costs" in file "ANM_Poles_NonConfidential_ComReg 20101.xlsx"

5.5.8 The adjustment of the pole replacement cycle to suspend unplanned pole replacement leads to FTTC paying a disproportionate amount for poles, and FTTH receiving an explicit discount

The model 'adjusts' the accelerated pole replacement cycle during the "suspension of unplanned replacement" (Phase 3, as shown in Figure 82 of the ANM specification document⁶⁸). This results in negative accelerated pole replacements in the period 2025–2031. This negative pole cycle further highlights the distortion of the PAM calculations in that copper lines pay for the majority of accelerated pole replacements (a capital cost which is transferred to the ANM) during the period when FTTC is price controlled, followed by a period from 2025 to 2031 when an increasing number of FTTH services are given a discount ('negative poles') in the amount of pole-related capital costs transferred to the ANM. What this means in practice is that FTTC prices in the next few years are subsidising a new FTTH network. This is contrary to ComReg's objective of encouraging efficient investment, and contrary to the requirements of technology neutrality.

ComReg should adjust the ANM so that pole replacement costs are allocated to the services that cause the pole replacements, taking into account that copper services are being rapidly switched off in commercial areas.

5.6 Q8 on the assumptions around FTTH connections

Q8 Do you agree with ComReg's preliminary view that the assumptions made around FTTH connection costs in the ANM are appropriate? Please provide reasons for your response.

Please see the response to Q17 for all comments on FTTH connections.

⁶⁸ ANM – Specification Document_ComReg 20101.pdf

6 Comments on Section 6 of 2020 ANM pricing consultation: “Pricing approach for existing access services”

In this section, we comment on ComReg’s proposed pricing approach for existing access services, as set out in the 2020 ANM pricing consultation.

6.1 Q9 on the pricing for PSTN WLR

Q9 Do you agree with ComReg’s preliminary views that the price for PSTN WLR should be based on a price per year for each year of the price control period based on the ANM modelled outputs for that year? Please provide reasons for your response.

Service	Current price	1 July 2020 - 30 June 2021	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024	1 July 2024 - 30 June 2025	1 July 2025 - 30 June 2026
PSTN WLR	16.59	16.07	15.77	15.41	15.35	14.80	15.67
Supplemental charge for POTS based FTTC services*	2.91	2.48	2.39	2.31	2.24	2.18	2.09

6.1.1 No geographical footprint can be defined as ‘non-commercial’ for PSTN WLR and thus PSTN WLR in the Regional Low-Level FACO Market should attract its share of common costs

In principle, no geographical footprint is non-commercial for PSTN WLR.⁶⁹ This because the three defined footprints (UC, RC and NBP IA) have been defined specifically for NGA services and have not been defined in any way or with any analysis in relation to PSTN WLR.

The concept that PSTN WLR is uneconomic in the IA originates from an outdated and now superseded analysis conducted by TERA in 2015. This analysis was based on comparing prices and costs at that time. Page 10 of TERA’s report⁷⁰ states that “An analysis of cost data in the D03/16 CAM indicates that cost per customer served of extending network services into the IA is higher than the SB WLR price.” Cartesian has not updated this analysis for the ANM considering up-to-date costs and prices, particularly taking into account that copper services in the IA are being retired and are priced on a TD HCA (depreciated assets) basis.

Therefore, the analysis that ComReg relies on to identify a ‘non-commercial’ area in the copper network is no longer applicable.

⁶⁹ Except potentially that part already supported by a USO contribution (but with that contribution it can be considered commercial)

⁷⁰ Report on the determination of appropriate costing and pricing methodologies for VUA and NGA Bitstream, Ref: 2015-65-DB-ComReg-VUA pricing

Further, Eircom conducted PSTN WLR deployment a considerable time ago, so there is no question of Eircom's IA lines needing some free-ride for common costs or taxpayer-subsidies for deployment like NBI.

6.1.2 If ComReg is concerned that common costs should be in commercial areas only, there is nothing preventing it allocating the IA share to PSTN WLR in Urban FACO markets, where pricing is entirely unconstrained

In the current FACO market review, ComReg proposes to completely deregulate the FACO market (including WLR) in urban areas which have been aligned to where NGA is present. Eircom is thus entirely unconstrained on PSTN WLR prices following a nine-month sunset period. So even if one was to argue that the common cost recovery should be in commercial areas only, as far as a fair allocation of common costs to the WLR service generally (across all lines) is concerned, Eircom is free to recover that full allocation of common costs (i.e. include the rural lines' share) in the prices it sets for PSTN WLR in urban areas.

6.1.3 Affordability is not an area of concern as the current PSTN WLR prices are higher than the proposed ones

In paragraph 4.7, ComReg notes that *"too high a price (for WLR) would impact on the availability and affordability of the voice service for end-users."* However, it is clear that the current price of EUR16.59 is by definition affordable, as the market has shown its capacity to bear it. The calculated and proposed PSTN WLR prices are declining steadily, from the current price of EUR16.59 down to EUR14.80 at minimum, and there is evidently capacity for those lines in the IA to contribute to the recovery of common costs by not being reduced below EUR16.59. We note in addition that prior to D03/16, the PSTN WLR price was EUR18.02 and affordability was not an issue at that price level – in fact the market was larger than it is now.

6.2 Q10 on the pricing for POTS based FTTC

Q10 Do you agree with ComReg's preliminary views that the supplemental charge for POTS based FTTC should be based on the incremental costs, using the same approach as for PSTN WLR? Please provide reasons for your response.

Service	Current price	1 July 2020 - 30 June 2021	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024	1 July 2024 - 30 June 2025	1 July 2025 - 30 June 2026
PSTN WLR	16.59	16.07	15.77	15.41	15.35	14.80	15.67
Supplemental charge for POTS based FTTC services*	2.91	2.48	2.39	2.31	2.24	2.18	2.09

6.2.1 The calculation of POTS based FTTC is flawed

Please refer to Section 5.5.3 of this report for a detailed discussion of this topic.

6.3 Q11 on the pricing for LLU and SLU

Q11 Do you agree with ComReg's preliminary views that the prices for LLU and SLU should be derived based on the UC Footprint and set by way of maximum prices (rather than the existing price points) as set out in Section 7? Please provide reasons for your response.

Service	Current price	1 July 2020 - 30 June 2021	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
LLU*	11.52*	12.72*	12.72*	12.79*	13.44*
SLU	6.12	10.43	10.39	10.39	10.82
Line Share**	0.77**	0.62**	0.62**	0.62**	0.62**
Dark Fibre	0.28 (Dublin), 0.15 (Provincial)	0.11	0.11	0.11	0.11

6.3.1 The calculation of SLU is flawed

Please refer to Section 5.5.3 of this report for a detailed discussion of this topic.

6.3.2 The increase in the price of LLU and SLU is extreme

In paragraph 4.7 of 2020 ANM pricing consultation, ComReg notes that “too high a price (for WLR) would impact on the availability and affordability of the voice service for end-users.” It does not seem that ComReg is giving the same consideration to end users of services based on LLU/SLU (such as FTTC) as it does for end users of services based on PSTN WLR. This appears to be detrimental to the interest of end users and not respecting of technological and service-neutrality principles.

The increase in the price of LLU and especially of SLU comes from a number of specific assumptions and decisions taken by ComReg, including:

- The approach to common cost allocation to exclude recovery in NBA IA areas
- The allocation of common costs on a per-line basis and with 1 LLU = 1 SLU
- The allocation of the transit assets and network costs only to commercial areas
- The flawed allocation of copper feeder assets
- The use of AFIs provided by Eircom; through the scaling applied in the ANM, the AFIs allocate an implausibly high amount of line-related costs to copper compared to fibre
- The reliance on Eircom's choice of common costs including cost categories, such as network rates, which are not fixed common costs such as rates.

The combined impact of the previous assumptions and decisions listed above has a dramatic effect on proposed LLU and SLU prices.

The ANM model appears to be biased against LLU and SLU – they are the only services whose prices are increasing despite a universal reduction in the WACC used compared to the Revised CAM.

6.3.3 ComReg's proposed allocation of common costs to LLU and SLU is not consistent with BU-LRAIC+ best practice and is contrary to the EC Recommendation

Paragraph 3.26 of 2020 ANM pricing consultation states that “ComReg does not propose to amend its approach to the costing of LLU, SLU or Dark Fibre which will continue to be set on the basis for a combination of BULRAIC+ and TD-HCA. ComReg in particular does not consider that a review of the methodologies underpinning the pricing for LLU and SLU is required in the context of the update of the Revised CAM and development of the ANM.”

However, allocating common costs only to lines in the commercial area results in a disproportionate allocation of common costs to LLU and SLU and is therefore not consistent with BU-LRAIC+ best practice.

ComReg's approach is also contrary to the approach set out in the 2013 EC Recommendation⁷¹ which ComReg must take into utmost account (our emphasis is added in bold in the extracts below):

- common costs are **shared costs for products or services produced jointly** which are not attributable to any single product or service⁷²
- mark-up means the addition made to the incremental cost of a specific service in order to allocate and recover the common costs **through allocation to all services for which those common costs are relevant**⁷³
- for the purposes of setting **copper** and NGA wholesale access prices where cost orientation is imposed ... NRAs should adopt a ... costing methodology which includes a bottom-up modelling approach using LRIC as the cost model **with the addition of a mark-up for the recovery of common costs.**⁷⁴

6.3.4 ComReg's proposed allocation of TD inefficient common costs to LLU and SLU is not consistent with BU-LRAIC+ best practice

Common corporate costs should be adjusted for efficiency as they are not reusable assets valued under TD HCA.

In particular, the increase in corporate costs should be investigated and the share of common costs as a share of total costs should be compared to other operators in Ireland as well as efficient access network operators across the world.

It can be anticipated that some corporate costs could rise slowly, e.g. with inflationary pay rises for common staff. However, ComReg should analyse the AFIs to identify whether Eircom has classified

⁷¹ Commission Recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment

⁷² 2013 EC Recommendation, Definition, 6(b)

⁷³ 2013 EC Recommendation, Definition, 6(l)

⁷⁴ 2013 EC Recommendation, recommended costing methodology, paragraph 30

an increased level of common costs in the 2018 and 2019 AFIs beyond that which would be expected from underlying inflationary trends.

Not doing so allows Eircom to potentially recover inefficiently incurred costs and/or move costs from network or retail activities to common costs in order for these costs to be included in the price of regulated services.

6.4 Q15 on the pricing for FTTC-based services

Q15 Do you agree with ComReg's preliminary views that the price for FTTC based services should be updated in line with the approach at paragraph 6.82? Please provide reasons for your response.

Service	FTTC based services - €				
	Current Price	1 July 2020 - 30 June 2021	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
FTTC based VUA²⁴	20.10*	18.67 *	18.62*	18.62*	19.08*
FTTC based Bitstream: National Handover					
Per Port	24.94*	22.45*	22.47*	22.59*	23.22*
Per Mbps	0.37	0.34	0.29	0.27	0.27
FTTC based Bitstream: Regional Handover					
Per Port	21.84*	20.50*	20.47*	20.51*	21.05*
Per Mbps	0.20	0.13	0.11	0.11	0.11
Assumed 90/10 mix for Regional / National Handover					
Per Port	22.65*	20.69*	20.67*	20.72*	21.26*
Per Mbps	0.24	0.15	0.13	0.13	0.13

6.4.1 The LLU and SLU inputs used as inputs for FTTC-based services need to be revised

ComReg uses the LLU and SLU prices calculated by the ANM as inputs for FTTC-based services, which creates two fundamental problems:

First, as discussed in Section 5.5.3 of this report, the LLU input is based on the average cost of D-side and E-side copper assets in the entire UC area and is therefore not the right input for EVDSL FTTC-based services which are (1) by definition much shorter and (2) do not have separate D-side and E-sides.

To fix this, ComReg should modify the geographical modelling so that copper assets used for EVDSL FTTC-based services are reported separately from D-side and E-side copper assets. Alternatively, ComReg should make adjustments to E-side copper assets to ensure that only the proportion of those assets usable for EVDSL FTTC-based services is included in the costs of EVDSL FTTC-based services.

Second, as also discussed in Section 5.5.3 of this report, the SLU input calculation is flawed. The areas of concern mentioned in that section need to be addressed and corrected to ensure that only the relevant copper access costs are allocated to the costs of EVDSL FTTC-based services.

6.5 Q16 on the pricing for CG bitstream services

Q16 Do you agree with ComReg's preliminary views that the price for CG Bitstream services should be updated in line with paragraph 6.86? Please provide reasons for your response.

Service ²⁵	CG Bitstream - €				
	Current price	1 July 2020 - 30 June 2021	1 July 2021 - 30 June 2022	1 July 2022 - 30 June 2023	1 July 2023 - 30 June 2024
<i>BMB: National handover</i>					
Per Port	8.70*	7.74*	7.89*	8.07*	8.30*
Per Mbps	0.57	0.54	0.44	0.37	0.33
<i>BMB: Regional handover</i>					
Per Port	6.94*	6.33*	6.35*	6.41*	6.52*
Per Mbps	0.25	0.23	0.19	0.16	0.14
<i>Bitstream IP: National Handover</i>					
Bitstream IP²⁶	9.14*	8.16*	8.23*	8.36*	8.55*
<i>Bitstream IP: Regional Handover</i>					
Bitstream IP²⁷	7.13*	6.51*	6.50*	6.53*	6.63*

Based on the common cost approach proposed by ComReg, CGA broadband lines in non-commercial areas are not contributing to the recovery of common costs and are therefore effectively subsidised by lines in commercial areas. This subsidy appears unnecessary as Eircom is not obliged to provide CGA broadband where it is loss making. In addition, FWA providers tend to be more present in the non-commercial footprints and would be competing with subsidised CGA broadband services provided by the SMP operator. This is detrimental to the promotion of competition and therefore to the interest of end users.

7 Comments on Section 7 of 2020 ANM pricing consultation: “FTTH Connections”

In this section, we comment on ComReg’s proposal for FTTH connections, as set out in the 2020 ANM pricing consultation.

7.1 Q17 on the relevant factors for FTTH connections and migrations

Q17 Having outlined ComReg’s initial assessment of relevant factors for the costs associated with connections and migrations, do you consider that they are relevant and complete? Do you consider that any other factors are relevant? In response please provide well justified reasons and provide data to assist in ComReg’s consideration of this matter.

7.1.1 Other NRAs have applied asset lifetimes consistent with the general FTTH costing model

We have compared the lifetimes applied by ComReg for FTTH street distribution infrastructure with those in five other cost models in the public domain. The lifetimes are shown in Figure 7.1 below. This indicates that ComReg’s assumed lifetimes for FTTH street distribution infrastructure are all within the range of these five models, although ComReg’s assumptions for fibre cabling are at the bottom (shortest lifetime) of the benchmark range.

Figure 7.1: Benchmark of FTTH street distribution infrastructure asset lifetimes [Source: Analysys Mason, 2021]

Asset type	Jurisdiction with published cost model of FTTH networks					
	Ireland	Denmark ⁷⁵	Finland ⁷⁶	Greece ⁷⁷	Norway ⁷⁸	Sweden ⁷⁹
Year model finalised	2020	2019	2017	2020	2019	2018
Poles	30	–	40	15	20	–
Ducts	40	35	40	36	50	40
Trench	40	35	40	36	50	40
Aerial fibre cables	15	–	30	15	20	–
Underground fibre cables	20	35	30	20	20	20

⁷⁵ Model available at <https://erhvervsstyrelsen.dk/sites/default/files/2019-09/Offentlige%20modeller.zip>

⁷⁶ Model available at <https://www.traficom.fi/sites/default/files/media/regulation/REDACTED-BU-LRIC-English-2018.xlsx>

⁷⁷ Model available at https://www.eett.gr/opencms/opencms/EETT/Electronic_Communications/Telecoms/MarketAnalysis/Agora4_3a/Notification-bottom-up-NGA.zip

⁷⁸ Model available at https://www.nkom.no/ekom-markedet/kostnadsmodeller-og-wacc#Iricmodell_for_faste_aksessnett

⁷⁹ Model available at <https://www.pts.se/globalassets/startpage/dokument/ovrigt/kalkylmodell/2018/kalkylmodell-for-det-fasta-natet-1.0-ms-access-.zip>

However, a stark difference between ComReg's approach and these other reference cases is that the other models, without exception, apply final-drop infrastructure lifetimes which are the same as its street distribution infrastructure equivalents. In contrast, ComReg applies assumed final-drop lifetimes that are significantly lower than its street distribution infrastructure equivalents (in the case of ducts/trench/poles, less than 40%). This is clearly demonstrated in Figure 7.2 below.

Figure 7.2: Benchmark of FTTH final-drop asset lifetimes as a proportion of FTTH street distribution infrastructure lifetimes [Source: Analysys Mason, 2021]

Asset type	Jurisdiction with published cost model of FTTH networks					
	Ireland	Denmark	Finland	Greece	Norway	Sweden
Poles	33%		100%	100%	100%	
Ducts	38%	100%	100%	100%	100%	100%
Trench	38%	100%	100%	100%	100%	100%
Aerial fibre cables	67%		100%	100%	100%	
Underground fibre cables	75%	100%	100%	100%	100%	100%

We do not see why ComReg would make this distinction. In our opinion it cannot be justified due to, for example, climate factors, since four of the reference case models are in northernmost Europe and have a more inhospitable climate than Ireland. We therefore consider that ComReg should align the assumed final-drop lifetimes with the street distribution infrastructure equivalents.

7.1.2 International benchmarks indicate that wholesale FTTH connection and migration charges are set very differently and are significantly lower than is the case in Ireland (where charges are EUR100/100)

With reference to the five countries benchmarked in Section 7.1.1, we observe that the approach to connection and migration charges is significantly different to that applied by ComReg. As can be seen in Figure 7.3 below, most countries recover all final-drop infrastructure costs through the monthly rental charge rather than through one-off charges.

Figure 7.3: Approach to recovery of final drop infrastructure costs [Source: Analysys Mason, 2021]

Country	Final-drop assets recovered through monthly rental	Final-drop assets recovered through connection/migration charges
Ireland	None	All
Denmark ⁸⁰	All of the first 30 metres of the final drop	Only any final-drop length in excess of 30 metres (charged to the end user), otherwise charges cover system processes, technical visits and technical migration costs (may be charged to the access seeker or end user)
Finland	Monthly rental is calculated including final-drop assets, with the installation one-off charge annualised and netted off	

⁸⁰ See <https://tdcgroup.com/en/fiber/vilkaar>

Country	Final-drop assets recovered through monthly rental	Final-drop assets recovered through connection/migration charges
Greece	Trench/cable	None (one-off charges cover system processes, technical visits and technical migration costs)
Norway	All final-drop infrastructure	Not modelled
Sweden ⁸¹	All trench, manhole, subduct, cable deployed on public land (i.e. pavements and road)	All microtrench, cables, subduct and network termination points/frames deployed on private land (charge incurred by the householder), plus any technical migration costs (may be charged to the access seeker or the end user)

7.2 Q18 on the market impact of existing FTTH connection and migration charges

Q18 Do you have any views as to the market impact of the existing FTTH connection and migration charges on the potential competition problems that ComReg identified in the WLA market? If you consider that the existing price control obligation is materially failing to address these problems, please provide supporting evidence and reasoning.

Existing FTTH connection and migration wholesale charges are EUR100 each.

These charges will lead to a distortion in wholesale and retail competition, and introduce a greater risk of negative margin for other alternative operators, because:

- the charges do not reflect the distribution of benefits
- customers who switch supplier more often will give rise to materially higher wholesale charges for their retail service provider (RSP) than customers who switch infrequently.

7.2.1 Charges do not reflect the distribution of benefits

ComReg must ensure, as set out in Regulation 13(3) of the Access Regulations, that its cost recovery mechanism or pricing methodology (i.e. the price control obligation) maximises consumer benefits.

It is evident that consumers benefit from the FTTH connection assets deployed by Eircom. ComReg concluded (ComReg D11/18 paragraphs 13.44 and 13.45) when setting the price control obligation for FTTH connection and migration charges that the principle of distribution of benefits be considered when setting charges for connection, migration and rental, and that “*subsequent customers who benefit from an asset contribute to the recovery of the associated cost*”.

ComReg’s approval of a EUR100 wholesale charge for each connection and migration implies that the distribution of benefits from the act of connecting (or migrating) is the same for all customers, regardless of how long they subscribe to the service. For example, it implies that the benefit for the first customer

⁸¹ See <https://www.pts.se/globalassets/startpage/dokument/ovrigt/kalkylmodell/2018/modelldokumentation-av-kalkylmodell-for-det-fasta-natet.pdf>, page 137

who might rent FTTH for 12 months is the same as the benefit for the second customer in that property, who might rent the FTTH service for many years.

In the context of broadband, the benefit of FTTH is experienced on a daily basis, as the end users' broadband speed is faster and more reliable than their current broadband (especially in the case of the rural deployment area). Through these increased speeds, end users benefit through various socio-economic aspects, such as smart-home benefits, teleworking, distance learning and access to a range of social benefits (e.g. streaming, multiple family members benefiting from being able to use the service at the same time). These benefits do not materialise at the instant an end user takes up a connection, but are realised on an ongoing basis, every time the FTTH broadband service is used. Consumers can also choose to migrate between service providers. Having taken an earlier decision to connect to FTTH, a consumer is faced with the choice (i.e. when a minimum term contract ends) of continuing with the current provider or moving to a new provider. The consumer does not regain any instantaneous benefit from switching to another provider. Rather, the consumer gains benefits from the ongoing monthly service offered by the new provider, for the ongoing monthly price.

It is clear that in the competitive retail market, Eircom Retail does not attempt to recover **any** amount of the cost of the customer network connection from the retail connection charge to the end user; Eircom Retail connection charges are zero, as shown in Figure 7.4 below. Eircom Retail only charges monthly rental to the end user, consistent with the reality that the end user pays for the benefits of FTTH on an ongoing basis, and pays nothing (with no benefit ascertained) from the instantaneous event of connecting to FTTH. This contrasts completely with Eircom Wholesale, which essentially recovers close to 100%⁸² of the estimated cost of connection from the wholesale connection (and migration charges), and close to none of the connection costs from ongoing rentals.

Since the launch of FTTH, Eircom has set retail connection charges lower than the prevailing wholesale connection charges. Rivalry in the market means that charging substantially higher retail connection charges will discourage consumers and take-up. Therefore, an RSP cannot expect to recover EUR100 of wholesale charges upfront from a retail customer. This means that neither the RSP nor the customer gain any direct benefits from the connection or migration event. For an RSP, the benefits (profits) flow with the ongoing monthly retail service, not upon the connection or migration event (which causes a loss).

To match Eircom's offer of zero connection charge, the other authorised operator (OAO) faces an instantaneous connection margin squeeze (i.e. loss) of EUR100. On the other hand, Eircom as a whole faces no margin loss from the retail connection charge of zero because Eircom capitalises its connection-related costs.

In terms of the distribution of benefits to consumers:

- An end user or OAO sees no instantaneous benefit from the act of connecting to FTTH in Ireland (i.e. there is no benefit gained at the moment a connection is made)

⁸² ComReg's non-confidential FTTH connections model suggests that the EUR100 connection and migration charge is close to the estimated EUR116 cost basis

- An end user or OAO sees no instantaneous benefit from the act of migrating from one FTTH service provider to another
- An FTTH broadband connection is only an ongoing benefit to end users and the RSP that serves them.

This highlights that the distribution of benefits at the retail and wholesale level is completely concentrated on the rental of the ongoing service. This means that retail and wholesale connection and migration charges should be as low as possible, since the prices paid for the instantaneous connection and migration events do not confer direct benefits, and the cost recovery of the service in its entirety should be distributed as much as possible to rental charges. Pricing which does not reflect, or very poorly reflects, the distribution of benefits is uneconomic, since it distorts efficient economic decisions by wholesale buyers and retail consumers.

Figure 7.4 below shows that retail connection charges of zero, or substantially less than the EUR100 wholesale charge, are a fundamental feature of the FTTH retail market, shown here for high-value 1Gbit/s services. We used a sample of real addresses in Ireland to test the offers which retail providers would make, similar to residential customers browsing offers from three main suppliers.

Figure 7.4: Retail FTTH connection and rental charges, as offered on 4 December 2020, showing the standard price (strikethrough if discounted) and discounted price [Source: Operator websites, 2020]

EUR	Eircom		Sky		Vodafone	
	Connection	Monthly	Connection	Monthly	Connection	Monthly
		24-month contract	⁸³	12-month contract		12-month contract
D15 Y6##	0	85.00 54.99	20	70 50	49.19 0	70 40
F91 TD##	0	85.00 54.99			49.19 0	70 40
F91 E2##	0	85.00 54.99			49.19 0	70 40
T12 HC##	0	85.00 54.99			49.19 0	70 40
F91 AE##	0	85.00 54.99			49.19 0	70 40
F91 N6##	0	85.00 54.99			49.19 0	70 40

7.2.2 Customers who switch supplier more often will give rise to materially higher wholesale charges for their RSP than customers who switch infrequently

The calculated level and recovery of connection-related costs is based on the average customer, who has an estimated lifetime of 42 months with the same provider. Current wholesale connection and migration charges place the vast majority of connection-related cost recovery on the connection/migration events, and a small amount on the monthly rental. Therefore, the number of such connection and migration events becomes critical to the cost recovery situation for a customer. For example:

⁸³ Triple-play

- Customer A engages with the market and switches more regularly than every 42 months (given that customer contracts are often limited to 12 months).⁸⁴ This will cause each of the multiple service providers to pay EUR100 to Eircom Wholesale in connection and migration charges. For this customer, there will be an over-recovery of the customer-specific connection-related network costs, over the lifetime of the asset. In addition, the loss incurred by the RSP, arising from the retail price for connection being below the wholesale price, will also be incurred multiple times.
- Customer B does not engage with the market and switches less regularly than 42 months. This customer will incur the EUR100 charge fewer times, and there will be an under-recovery of customer-specific connection-related network costs.

Over the lifetime of the assets, both customers will incur the same in **wholesale monthly rental charges** for the service provider.

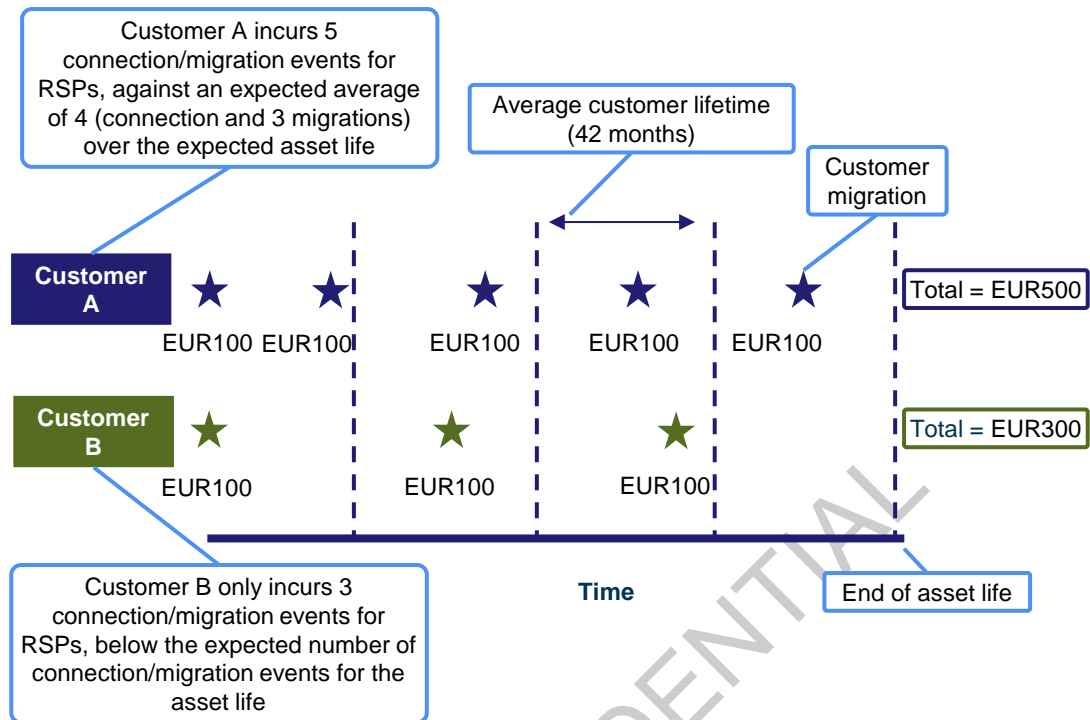
At a wholesale level, this means that customers who switch more often will subsidise those customers who do not switch as often. As a general principle, customers on the wholesale network should essentially be considered equal. For instance, if a customer that is connected to the network changes RSP multiple times over the life of the network, this should be no different from a customer that stays with just one RSP (recognising only that the rapidly switching customer causes additional small administrative fees). At the network level, both customers will incur the same customer-related connection investments (on average), but under the prices approved by ComReg one customer will contribute significantly more to the costs than the other. ComReg's objectives, as set out in the Communication Regulations Act,⁸⁵ state that ComReg should "*ensure that there is no distortion or restriction of competition*", and the currently approved charging structure causes a considerable distortion of competition.

It is not supportive of a competitive market, or supportive of the creation of appropriate incentives that customers who engage more regularly with the market and switch often should cause RSPs to pay Eircom Wholesale additional multiples of EUR100, compared to customers who might engage with the market less often. This is illustrated in Figure 7.5 below.

⁸⁴ Eircom Retail, Vodafone and Sky all offer standard FTTH contracts of 12 months

⁸⁵ See <http://www.irishstatutebook.ie/eli/2002/act/20/section/12/enacted/en/html>

Figure 7.5: Illustration of how regular churners subsidise longer-lifetime customers [Source: Analysys Mason, 2021]



In addition, incurring EUR100 many times does not represent cost causality, because every migration event does not cause EUR100 of costs for Eircom Wholesale. It is estimated by ComReg that each migration event causes EUR2.50 of administrative costs (2018 Pricing Decision paragraph 13.23).

The current pricing structure of EUR100/100 leads to an uneconomic competitive distortion which affects the whole FTTH market to the advantage of Eircom, and to the detriment of competition, OAOs and end users. As illustrated by the simple numerical example of two customers in Figure 7.5 (with the stipulated average lifetime of 42 months), the competitively active Customer A causes EUR200 of **additional** wholesale charges to be paid to Eircom Wholesale by its RSPs, compared to the less active Customer B. This will reduce the level of competition in the market, since it significantly limits the ability of OAOs to offer attractive prices to induce switching. Both customers cause the same costs for Eircom Wholesale,⁸⁶ and Eircom Wholesale would recover all of its costs on average. Eircom as a whole would benefit from this situation, because if it happened to lose the competitively active customer to an OAO, then Eircom as a whole would gain the higher wholesale revenue in the form of payments from the OAO (and the OAO's end users) including a EUR100 wholesale connection charge levied by Eircom on the day it loses the customer (and the OAO gains the customer). Eircom could then use these payments to cross-subsidise the network costs and retail prices of customers who do not switch as often.

The overall effect of the EUR100 wholesale charge for connection and migration will be a significant reduction in competitive intensity, to the benefit of Eircom as a whole. The approved prices dampen the effect of competition in favour of the current provider, and against the future potential provider(s), since

⁸⁶ Apart from the multiples of small EUR2.50 administrative costs

the current provider does not face a further EUR100 charge for retaining a customer. In the majority of cases on Eircom's FTTH network, the current provider is Eircom Retail, and so the present-day situation is not supportive of competition.

Another way of looking at the EUR100 wholesale migration charge is 'losing bonus' for Eircom. If an OAO is able to win a customer from Eircom retail FTTH, Eircom wholesale 'wins' EUR100 from the migration charge, which is vastly in excess of the administrative costs which Eircom incurs.

A connection and migration charge regime of the order of EUR2.50 for the administrative costs of the activity, with the network costs of connection recovered through monthly rentals averaged across all customers on the network, would be a more economic and pro-competitive cost-oriented pricing approach reflecting the distribution of benefits.

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8 Comments on Section 8 of 2020 ANM pricing consultation: “Other regulatory measures”

In this section, we comment on ComReg's proposal for other regulatory measures, as set out in the 2020 ANM pricing consultation.

8.1 Q20 on the need for annual review of ANM by Eircom

Q20 Do you agree with ComReg's preliminary view that Eircom should review the ANM annually for material/exceptional changes, and that such material/exceptional changes are brought to the attention of ComReg for consideration? Please provide reasons for your response.

Asking Eircom to review the ANM annually and bring material/exceptional changes to the attention of ComReg for consideration creates an incentive for Eircom to only report changes that would be beneficial to itself. To ensure regulatory objectivity, ComReg should conduct the annual review itself.

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8: BRG Report on behalf of Eircom

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Review of Access Network Model and Specification of Price Control for PSTN WLR

An analysis of ComReg's Consultation paper

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FINAL REPORT, JANUARY 8, 2021

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I. Introduction and objectives

1. BRG has been asked by eir¹ to provide independent economic analysis of ComReg's review of the Access Network Model ("ANM") it has built to inform the determination of the prices for Eircom's copper access, its proposals for the Price Control for Public Switched Telephone Network Wholesale Line Rental ("PSTN-WLR") and its proposed update of the prices of other copper-based services.
2. Our review is focussed on reviewing the following elements of ComReg's approach:
 - First, we consider ComReg's overall approach for pricing copper-based products and how it has implemented the principle of cost orientation in calculating the relevant copper access costs in the ANM and in the related NGA Model;
 - Second, we review some of the core elements of the ANM, and provide comments on the modelling approach and specific assumptions used in the model;
 - Third, we review the consistency of ComReg's assumptions across the different elements of the ANM and in relation to the different copper services; and
 - Last, we provide an indication of how the level of prices set by ComReg would change based on correcting for errors/inappropriate assumptions and changing some of the modelling assumptions.
3. We have been provided with the confidential versions of the relevant models, which were originally provided to Eircom and which have some randomised inputs. We were also provided with the underlying input data files for the ANM that were originally provided to Eircom. In the case of the demand calculation for the ANM, the confidential model provided to Eircom did not contain any of the underlying calculations used and so we relied on the non-confidential version of this model, which had highly randomised inputs. We were also provided with the version of the NGA Model provided to Eircom in 2018 for comparison. We list below the references we use in this report for the primary ANM and NGA modelling files, along with the filename that we received. Where we reference other input excel files for the ANM in this report, we refer to them by their Excel filename.
4. For the ANM:
 - The "Capex Module" – ANM_Capex_Consultation_ComReg 20101_eir.xlsb

¹ Note: We use "Eircom" in the rest of this document to be consistent with ComReg's usage.

- The “Opex Module” – ANM_Opex_Consultation_ComReg 20101_eir.xlsb
 - The “PAM Module” – ANM_Poles_Consultation_ComReg 20101_eir.xlsb
 - The “DAM Module” – ANM_Ducts_Consultation_ComReg 20101_eir.xlsb
 - The “Service Demand Module”. We did not receive a full version of this, but received a confidential version containing only outputs and a non-confidential version containing logic and calculations. We refer to these as:
 - The “Service Demand Output Module” – ANM_Service_Demand_OutputsOnly_Consultation_ComReg 20101_eir.xlsb
 - The “Non-Confidential Service Demand Module” – ANM_Service_Demand_Logic_Only_NonConfidential_ComReg 20101.xlsb
 - The “Geospatial Module”. We received a data extract file, source code and a specification document (“ANM Geospatial Passive Dimensioning Module: Database Extract Specification Document”)
5. For the NGA Model:
- The “NGA Model” – Copy of NGA Model_ComReg 20101_eir.xlsm
 - The “2018 NGA Model” – *Copy of NGA Cost Model.xlsx*. We further received a specification document for this model (“NGA Cost Model Specification document”)
6. We have also reviewed the consultation documentation for ComReg 20/101, consisting of the non-confidential consultation document (“*Regulated Wholesale Fixed Access Charges: Review of the Access Network Model and Specification of the Price Control for Public Switched Telephone Network Wholesale Line Rental*”), model specification document (“*Access Network Model Specification Document*”), and model user guide (“*Access Network Model User Guide*”). We refer to these throughout the report as the “Consultation”; the “Specification Document” and the “Model User Guide”.
7. We refer to Eircom’s response to this Consultation (“*eir response to ComReg 20/101*”) as the “Eircom Response to Consultation”.
8. Our report also makes reference to a number of other documents and consultations. We list below the terms that we use to reference these, along with their full titles.

- The “CEI Consultation” – this refers to ComReg 20/81, “Pricing of Eircom’s Civil Engineering Infrastructure (‘CEI’): CEI access in the context of the National Broadband Plan (‘NBP’)”. We also refer to the two draft models provided as part of this consultation. To differentiate these from the PAM Module and the DAM Module of the ANM, we refer to these as:
 - The “Draft CEI PAM” – 200911_Draft PAM_Consultation_ComReg 2081_eir.xlsb.
 - The “Draft CEI DAM” – 200911_Draft DAM_Consultation_ComReg 2081_eir.xlsb.
- The “2018 Pricing Decision” – this refers to ComReg 18/95, “Pricing of wholesale broadband services: Wholesale Local Access (WLA) market and the Wholesale Central Access (WCA) markets”.
- The “2020 WACC Decision” – this refers to ComReg 20/96, “Review of Weighted Average Cost of Capital (WACC) – Response to Consultation and Final Decision”.
- The “2016 Access Pricing Decision” – this refers to ComReg 16/39 “Pricing of Eir’s Wholesale Fixed Access Services”.
- The “Mid-Term Assessment of the Regional WCA Market” – this refers to ComReg 20/114 “Mid-term Assessment: Regional Wholesale Central Access (WCA) Market”.
- The “Revised CAM” – refers to the copper access model used for the 2016 Access Pricing Decision.
- The NGN Core Model – this refers to a model used to derive certain core network cost inputs that are relevant to the provision of FTTC based NGA services (e.g., inter-aggregation link46 costs for Bitstream and the link costs from the aggregation node to the exchange for VUA).

II. Summary of Conclusions and Structure of Report

II.1. SUMMARY OF CONCLUSIONS

9. We have reviewed the ANM and NGA models, and their supporting documentation. We have also reviewed ComReg's Consultation Document relating to these models. Our chief conclusions are:
- The models are based on a selective notion of "hyper-efficiency." ComReg has opted to update prices (e.g., FTTC prices) at short intervals, or to set prices (e.g., for PSTN-WLR) to change every year to reflect that year's cost estimates. ComReg has also applied an updated WACC, which it derived in its recent 2020 WACC Decision, but it applies this not just to investments made from this point forward but also to historic investments made prior to 2020.
 - Likewise, ComReg uses a "modified scorched node" approach to re-optimize Eircom's copper network to reflect the way an operator building such a network today would modify the topology of the network.
 - This "hyper-efficient" and frequently updated approach to pricing is based on applying a theory that is suited to the dynamics of markets where entry and exit are rapid and cost-less. There is no clear-cut case for applying this "contestable markets" approach to last-mile fixed telecom infrastructure, either from the perspective of preventing the incumbent operator from earning excess returns or from the perspective of sending the right signals for entry and investment. There is simply not a thick supply of entrants who will respond to short-term changes in costs and demand. Further, the approach has negative consequences for investment and cost recovery, and it risks violating the "fair bet" principle if the approach is applied in a way that prevents firms from recognizing the "upside" (positive shocks to cost and demand) but not the downside (negative shocks).
 - Further, ComReg fails to apply this "hyper-efficient" principle logically. Thus, in allocating common costs in the commercial area between copper (including FTTC) and FTTH, ComReg in effect assumes that an efficient new operator would roll-out simultaneously both FTTC and FTTH networks. This is hardly likely. ComReg is also inconsistent in implementing this assumption because it does not consider that deploying FTTH would inevitably shorten the life of copper and FTTC assets, which would become obsolete once FTTH is deployed. A similar issue applies in the case of LLU and SLU prices, which are based (in part) on the costs that an efficient operator

would incur in replacing copper network assets, even though an efficient operator today would not invest in a copper network.

- ComReg also justifies the stranding of copper network costs on the basis that Eircom has over-earned on narrowband copper access products, but this analysis is conceptually and factually questionable. Basing policy decisions on whether Eircom has technically over-earned or not reflects a narrow policy lens. It has the effect of reducing the prices of copper-based services, and thus reducing the attractiveness of fibre-based services, which would seem contrary to public policy interests.

10. At a more specific level:

- We have found the Service Demand Module to be lacking in transparency and to contain calculations and assumptions that are internally and logically inconsistent.
- Furthermore, the lack of a confidential version of the Service Demand Module to link with the rest of the ANM Modules provided to Eircom means that there is no opportunity to test the effects of different assumptions in this Module. It therefore is not suited for purpose and fundamentally undermines the consultation.
- ComReg has modelled a decline in Direct Repair and Maintenance (“R&M”) opex over time as the number of users on the copper network declines. We understand from Eircom that they do not expect any such decline in the period of this price control and that there will in fact be an increase in the complexity of R&M work caused by needing to maintain and diagnose faults on parallel FTTH and copper networks.
- There are a number of inconsistencies in the modelling between the different ANM Module and between the ANM and the NGA Model.
- The top-down results of the model significantly rely on assumptions which are not well documented. For example, ComReg forecasts a significant drop (50%) in copper capex in 2020 but has provided no evidence for this.
- In addition to basing annuities for historic investments on the new WACC instead of the WACC that applied at the time that the investment was made-- with the attendant problems that we note above-- ComReg also makes a mathematical mistake in calculating annuities, in the case of NGA product prices, which depresses the value of these annuities and further exacerbates the potential for costs to be under-recovered.

- ComReg has also not supplied the NGN Core Model, which feeds into the calculation of FTTC prices and has a significant effect, so we cannot verify the inputs that are derived from this NGN Core Model.
- ComReg also inappropriately bases the regulated FTTC Bitstream prices on both geographic areas where bitstream is regulated and on those where bitstream has been deregulated. This latter set of deregulated geographic areas consists of urban exchanges with comparatively favourable conditions for deployment, and one can expect many cost elements within the bitstream cost stack (including the local loop costs calculated by the SLU and LLU cost) to be lower in these areas than in other areas. Including these competitive areas when calculating the regulated FTTC Bitstream price therefore results in the price being artificially lowered for the other areas with less favourable deployment characteristics, i.e., there is an implicit cross-subsidy from competitive (for bitstream purposes) to less competitive, regulated exchanges, which is inconsistent with principles of cost-orientation.² This will result in under-recovery on FTTC Bitstream in the regulated exchanges.

II.2. STRUCTURE OF THIS REPORT

11. The rest of this report is structured as follows:

- in Section III, we provide an overview of ComReg's approach to set the regulated prices of copper-based access products, and of the methodology that it has used to derive the relevant costs using the ANM;
- in Sections IV, V and VI, we provide comments on the specific elements of the ANM, and in particular of the Service Demand Module, the Opex Module, and the Capex Module;
- in Section VII, we review the NGA Model and how it has been used by ComReg to update the prices of FTTC services;
- in section VIII we comment on the consistency of ComReg's assumptions across the different modules; and

² It may be the case that the bitstream market is competitive in many of these exchanges because of the presence of the regulated Virtual Unbundled Access ("VUA") product, and that without this product these exchanges would not be competitive. The national VUA prices are set based on the Urban Commercial footprint and VUA uptake is largely confined to urban areas. However, neither of these factors justifies basing regulated FTTC Bitstream prices on the input costs faced in the "competitive" urban areas. They should instead be based on the actual input costs faced in geographies where the pricing of bitstream products warrants regulation.

- in Section IX, we provide an assessment of the impact of modified some of the key assumptions on the costs, and the corresponding implications on the prices that ComReg proposes to set.

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III. ComReg's approach to pricing copper products and ANM cost methodology

III.1. 1. INTRODUCTION

12. In this initial section, we first consider ComReg's general approach to regulatory and economic principles which are relevant to setting cost-orientated prices. This approach is reflected in the ANM and NGA models. We then consider the more specific ways in which ComReg has applied this to approach to determining the prices of specific services. We focus on the prices of specific products: (a) PSTN-WLR; (b) LLU-SLU, used as an input to the regulated price of FTTC; (c) CG SABB; and (d) FTTC services (including FTTC and eVDSL).
13. We note that in specific relation to the prices of FTTC services, ComReg has not sought to review the pricing approach agreed in 2018, but has updated prices to reflect changes in WACC and changes in the prices of the access inputs (namely the SLU and LLU prices determined using the ANM and the backhaul costs determined in the NGN core model). Additional information on how ComReg has calculated the updated prices in the NGA Model are provided in Section VII below.

III.2. COMREG'S GENERAL APPROACH

14. We start by considering ComReg's general approach to setting regulated prices, and consider particularly whether ComReg's approach reflects a correct application of important regulatory principles such as providing a "fair bet" to Eircom, i.e., a fair opportunity to recover its efficiently-incurred costs; and providing the correct signals for efficient investment and entry into fixed-line markets.
15. Our review highlights several areas in which we believe ComReg's approach is selective and appears inconsistent with regulatory principles and some of ComReg's own regulatory objectives (e.g., incentivising fibre rollout). These areas include (a) its treatment of the WACC; (b) its treatment of stranded costs; and (c) its application and interpretation of principles behind costing methodologies such as historic cost accounting (HCA) and LRAIC+.
16. One particular theme that we have identified in ComReg's high-level approach is the application of what might be termed "hyper-efficiency." In effect, ComReg proposes frequent updates of prices

- In the case of PSTN-WLR, where it proposes new prices each year based on estimated costs for that year;
 - In the case of FTTC, it proposes to update prices that were set in 2018;
 - In general, it proposes to apply an updated WACC of 5.61% to determine service prices, applying such a WACC even to historic investments that were made at a time when the WACC may have been much higher.
17. ComReg also proposes the use of a “modified scorched node” approach, in effect changing the network configuration to reflect the existing connectivity to cabinets and exchanges by a hypothetical efficient entrant in that given year. This is regardless of the actual costs of making such changes and, perhaps even more importantly, regardless of the fact that no operator building a new network today would build a copper-based access network (even an FTTC network).
18. These facets of ComReg’s approach indicate an underlying model in which “signals” for efficient entry are being constantly updated. Many aspects of this approach are, however, unrealistic, unnecessary or inappropriate, and are counterproductive to providing investors in networks with stability or certainty. Among other things, there is not a thick supply of firms that are willing to or capable of investing in fixed-line networks (especially not the last-mile element) and firms make investments for the long-term. As a result, it is fanciful to think that any real-world investment signals are affected by updating costs and prices frequently. Further, these updates are not costless. In many cases, ComReg’s updating of costs and prices is likely to violate the “fair bet” principle as we discuss below and is likely to prove counterproductive for investment.
19. Equally, ComReg’s treatment of stranded copper network costs—that they do not matter because Eircom has earned excess returns on copper assets in the past—is based on a potentially incorrect analysis of excess returns and thus contradicts an important facet of the “regulatory bargain” between regulated operators and regulators—that a regulated firm should be allowed (a fair opportunity) to recover efficiently-incurred costs. ComReg’s treatment of stranded costs also has the effect of lowering prices of copper-based services, thus reducing consumer incentives to switch towards more modern fibre-based services. This appears hardly consistent with a broader presumed policy goal of promoting uptake of FTTH technologies. Further, in setting LLU and SLU prices on a LRAIC+ bottom-up basis, ComReg models the costs of replacing a copper network today, an endeavour that an efficient entrant would not undertake.

III.3. APPROACH TO THE WACC

20. ComReg’s approach to the WACC reflects its “hyper-efficient” approach in that ComReg believes that the relevant WACC to apply to the entire capital base is the current WACC. Thus, ComReg has applied the new regulatory WACC of 5.61% it has determined in October 2020 to both bottom-up and top-down calculations and to both the return of historic investment, e.g., the investment made in the duct and pole network, and in building the aggregation network used to deliver FTTC, as modelled in the NGA Model.
21. From the economic point of view, changing the allowed return for an investment made under different market conditions, i.e., conditions under which a higher cost of capital would have applied, has undesirable consequences. When companies invest in new assets, they make the investment on the basis that the expected return equals or exceeds their cost of capital at the time of investment, and they raise finance, as appropriate, at a rate that reflects expected market conditions at the time of investment. Revising the level of allowed returns on such historic investment means that such companies will end up earning less than the return that markets required at the time of investment, and ultimately it would discourage such operators from making future investments because they were not able to achieve the returns they expected (and indeed needed) when making historic investment.
22. The risk of under-recovery is highlighted by considering how companies finance their network investment. One of the assumptions of the Capital Asset Pricing Model (“CAPM”), which is used by regulators to define WACC, is that companies finance investments through a combination of borrowing (issuing debt instruments of varying maturity), and equity investment. When borrowing, operators often issue bonds with a long term to maturity and in doing so they commit to a given level of interest rates until the maturity of the debt. While fixing the rates provides them with predictability in future periods, this also means that in relation to such debt, they will not be able to benefit from a reduction of such rates. We see that this issue is often reflected in the way in which utility regulators determine WACC, with explicit consideration of the level of embedded debt.
23. ComReg’s view may be based on the idea that in competitive markets firms with higher costs cannot sustain higher prices when other firms are able to finance the same investments more cheaply. In this view, a firm with high financing costs would face the threat of replacement by firms who are able to undercut it because their financing costs are lower. This view of “contestable markets” is arguably misapplied to telecommunications infrastructure investment, where there are irreversible or “sunk” investments that cannot be recovered by exiting the market. That is, exit is costly, as is entry. There is not a thick supply of entrants who will invest in a last-mile access network in response to short-term changes in the cost of capital. Any such investments will be made on a long-term basis.

Firms will not make long-term irreversible investments under conditions where entrants are able to rapidly enter the market in response to short-term changes in the cost of capital. Thus, the idea that prices must be updated to match the costs that “this year’s entrants” face is misapplied in the context of access network investment in telecommunications.³

24. Further, in unregulated markets, firms will be allowed to make “excess returns” (even large ones) if they committed to risky sunk investments in long-lived assets and the risk that materialised was to the upside. Likewise, they will have to swallow potential losses if the risks materialise to the downside. The excess returns that a firm actually realises cannot be reflective of market power—whose exercise is the real concern of regulation— if the risk-adjusted expected return at the time the investment was made does not exceed the WACC at the time the investment was made.⁴ Thus, simple comparisons of actual returns against the regulated WACC are uninformative about “excessive returns.”
25. In summary: Eircom cannot be said to be earning excessive returns if it is merely making returns commensurate with the cost of capital associated with the investment. Nor is continually updating prices to reflect contemporaneous capital market conditions based on any realistic model of entry and competition in telecommunications. There is no *need* to regulate Eircom’s returns on this basis, and as we have pointed out, there is a real cost in terms of promoting investment if the firm’s prices are subject to frequent and constant revision. This is particularly true if the revisions are asymmetric or one-sided in their nature, a point we take up in our discussion of the “fair bet.”
26. In addition, we note that ComReg adopts a forward-looking “efficient” operator approach to pricing that is consciously based on mimicking long-run equilibrium in competitive markets. On the other hand, when ComReg alleges that Eircom has made excessive returns it bases this on historic costs and on an accounting-based measure, the Return on Capital

³ More broadly, ComReg’s philosophy reflects the proposal that prices should be set as if there were unimpeded and costless entry and exit in the market. This can never be the case with telecommunications networks where sunk costs make entry and exit costly. See Hausman, Jerry A. (2002), “Regulated Costs and Prices in Telecommunications”, in Madden and Savage eds., *The International Handbook of Telecommunications Economics*, Vol. II. ComReg’s approach of constantly updating the incumbent firm’s regulated prices also has an impact on facilities-based investment by non-incumbent firms. The incumbent firm’s regulated price is an input into the investment calculus of would-be rival firms. It is difficult for these firms to make long-term sunk investments if they cannot form stable expectations about regulated prices.

⁴ See, for example, OECD (2012), *Background Paper on Excessive Prices*, DAF/COMP/WP2(2011)7/Rev1, at paragraph 168 and footnote 190.

Employed (ROCE), that has no support as a measure of economic profit.⁵ Thus, economic precepts inform some parts of ComReg's approach, but not all parts.

III.3.1. ComReg's Mathematical Error

27. Even if it were appropriate to update the prices to reflect the updated WACC determined by ComReg in October 2020, which, as we have explained above, we do not accept, ComReg has made a mathematical error in the application of WACC to determine the level of tilted annuities and economic depreciation in both the DAM and PAM modules and in the NGA Model. This error arises because ComReg fails to apply a higher WACC to the period before the WACC change in the calculation of the annuity. This error has led to an understatement of the unit cost of the components for which economic depreciation and tilted annuities are used to determine unit costs. We will provide an example of this mistake and explain the approach required to resolve this issue in Section VII.5.3 below.
28. The ComReg models do not have an inbuilt flexibility to adjust the level of WACC to different cohorts of investment or to correct the mathematical error made but ComReg in calculating the level of annuities. However, this can be demonstrated through an example.
29. We consider a firm that has financed 100% of the capital required for copper investment of €100m in Ireland in 2011 by issuing a 20-year bond with a 10% yield.⁶ We also assume that the firm agrees a fixed annuity for repaying this bond over the twenty years. To simplify the calculation, we also assume no inflation over this period. Based on this scenario, the *Fair Bet Annuity*⁷ would amount to €11.75m.
30. We then assume that the interest rate in 2021 drops to 2%, as a result of the European Central Bank monetary policy which has reduced the cost of borrowing. We further suppose

⁵ The economic measure of profits is the internal rate of return ("IRR"). In a highly influential paper that largely led to U.S. competition authorities abandoning the use of accounting profitability measures for purposes of evaluating economic profits and market power, Fisher and McGowan (1983) state that the IRR is the only valid measure of economic profitability. See Fisher, Franklin and John McGowan (1983), "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits", *American Economic Review*, Volume 73, Issue 1, pp. 82-97. Thus, given that ComReg has used concepts such as economic depreciation instead of straight-line accounting depreciation, and economic replacement costs instead of accounting book costs, it ought also to use economic measures of profitability instead of accounting ones. The fact that ComReg sets prices partially based on historical costs for PSTN-WLR services, whose profitability it evaluates using ROCE, does not offer validation for the use of the ROCE either. The choice to set prices based on historic costs is driven by the consideration that prices in the PSTN-WLR market do not serve as entry signals. However, this does not render the ROCE a valid measure of economic profits, which should still be assessed on whether cash flows exceed the level at which their present value is zero, using a discount rate exactly equal to the WACC.

⁶ In 2011, Irish government bonds peaked, as one of the consequences of the 2008 financial crises.

⁷ The *Fair Bet Annuity* corresponds to the fixed annual payment that the firm committed to pay on taking up the loan, i.e., the annuity that provided the lender with a 'fair bet' at the time the lender provided the capital.

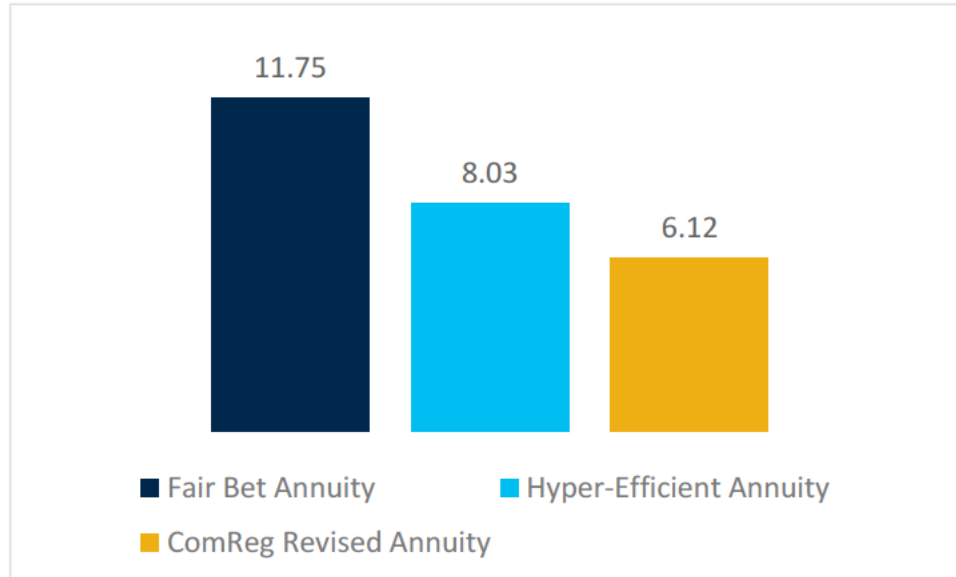
the firm was able to renegotiate the terms of the bond such that the lender would consider the capital repaid to 2021 and offer a forward-looking interest rate of 2% for the remaining 10 years to the maturity of the bond. This would reduce the annuity from €11.75m to the *Hyper-Efficient Annuity* of €8.03m, i.e., the firm would be able to save €3.72m a year in repaying the loan for the last ten years of the investment (a discount of 32% relative to original expectations).

31. Of course, we want to emphasise—consistently with our discussion above about the pitfalls associated with changing a firm’s allowed return on an investment away from the actual cost of capital at the time the investment was made— that it is far from clear that the lender would be willing to agree to such a refinancing as it would consider that the higher return was justified by the risk at the time the original financing was offered. Lenders would not want to make a habit of reopening fixed-rate loans to renegotiation—such fixed-rate arrangements have upsides and downsides for the borrower. The borrower benefits from certainty and is inoculated against increases in market interest rates. By the same token, the borrower cannot benefit if market interest rates fall relative to the original rates. The lender would not want to undermine these fundamental premises that underpin the fixed-rate arrangement. In fact, agreeing to a renegotiation of the interest rate might be seen as taking a “haircut” in that it undermines the business case and profitability of the original arrangement.⁸
32. However, the manner in which ComReg has calculated annuities is akin to an even more unattractive and perhaps unrealistic proposition. In this case, it is akin to the firm asking the lender to not only agree to applying the 2% interest rate going forward, but also to agree that the 2% rate should have been applied to all the borrowings since 2011. The “ComReg Revised Annuity” corresponds to this scenario. In this case, the financier not only takes a “haircut” relative to the expectations it had at the time it originally made the loan, but it under-recovers even relative to a variable-rate borrowing arrangement.
33. The three annuities under each of these scenarios are shown in Figure 1 below. The *Fair Bet Annuity* corresponds to the fixed annual payment that the firm committed to pay on taking up the loan. The *Hyper-Efficient Annuity* assumes that the firm is able to force the lender to take a 32% “haircut” on the payment originally agreed on the loan and charge the

⁸ In fact, the WACC is relevant to regulatory determinations precisely because it reflects the *opportunity cost* of capital. This opportunity cost is based on the returns the financiers could earn on marginal projects of equivalent risk, e.g., in unregulated industries. In these other industries, the investor’s expected return is based on how well the project will perform commercially, and not on market interest rates. For example, if the alternative investment is in making fibre sheaths, the sales and profits of fibre sheaths will determine the return that the investor makes, and those returns will not directly be impacted by how market interest rates change over the life of the investment. Financiers will thus balk at committing their capital to a regulated industry in which the allowed return is directly and mechanically linked to changes in market interest rates, but perhaps only in a one-sided way.

lower interest rate for the remaining life of the loan. The *ComReg Revised Annuity* assumes that the firm receives a further 16% reduction in the repayment, on the basis that new repayment is calculated assuming that the new lower interest rate is applied to the whole life of the asset.

Figure 1: Annuities for repaying a €100m loan over 20 years under three scenarios (€m)



Source: BRG Calculations

III.4. THE FAIR BET PRINCIPLE AND SIGNALS FOR COST RECOVERY

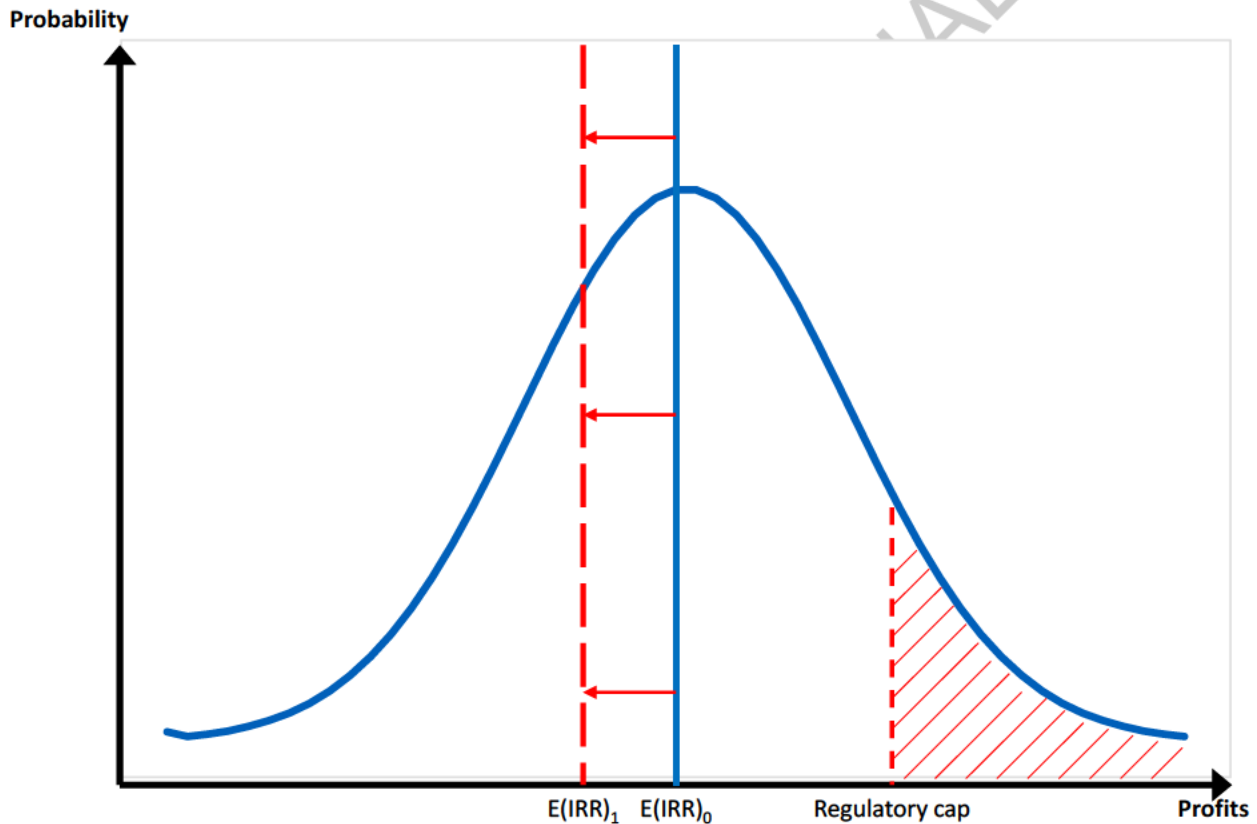
34. Reducing the rate of return retrospectively because prevailing market rates have fallen also contravenes the "fair bet" principle, under which companies are allowed to keep the upside of improved market conditions on the basis that it is a fair reward for the risk they are taking, and that they are expected to suffer the consequences if rates increase. This is particularly the case if the regulator implements these retrospective revisions in a one-sided fashion, i.e., revising returns when it leads to lower prices but not otherwise.⁹ Further, as we have discussed below, there is little merit to constantly updating the cost of capital and hence

⁹ There is some evidence that regulators can be selective in their implementation of economic principles. See, for example, Hausman, Jerry A., J. Gregory Sidak and Timothy J. Tardiff (2008), "Are Regulators Forward-Looking? The Market Price of Copper Versus the Regulatory Price of Mandatory Access to Unbundled Local Loops in Telecommunications Networks", *Federal Communications Law Journal*, Volume 61, Issue 1, pp. 199-228. The authors point particularly to the New Zealand Commerce Commission's failure to take rising copper prices into account when setting the price of unbundled local loops, as an example of regulators being forward-looking or efficiency-minded only in a selective way.

prices to reflect competition from “this year’s entrant.” This is a fundamentally unrealistic model of how competition and entry might occur in the last mile in telecommunications.

35. The impact of “ex-post” (after the investment is made) regulation on the “fair bet” principle is captured by comparing how such intervention affects the expected value of the investment relative to the “ex-ante” (before the investment is made) position. The regulatory regime provides the investor with a “fair bet” if the expected return—taking into account upside and downside risks to costs and revenues—equals (approximately) the investor’s cost of capital.

Figure 2: Example of impact of regulation on “fair-bet” principle



Source; BRG

36. Figure 2 shows the probability of return outcomes at the outset of a certain investment. This is distributed, in this case normally, across a range of values.¹⁰ The weighted average return, $E(IRR)_0$, is the probability weighted average return of all the possible returns. This

¹⁰ It should be noted that for simplicity we have plotted all returns as positive, but clearly most investments will have a wider range of returns including negative returns.

return is the ex-ante expected return, i.e., the return expected just at the time the investment is being made. An operator would go ahead with any investment that produces an expected return at or above the WACC.

37. However, if the regulatory regime is revised ex-post, e.g., because the regulator feels that the firm is earning too much relative to what a firm in a competitive or contestable market would earn today, this change “truncates” the distribution of returns available to the regulated firm. If such truncation had been anticipated ex-ante, i.e., if the regulated firm recognised that the regulator would intervene to cap its returns, this would be equivalent to reducing the ex-ante expected return (which would now be assessed over the truncated normal distribution in Figure 3). Clearly, this reduction in expected returns would affect and possibly negate the business case for the investment, and such ex-post interventions to deprive investors of upside scenarios would violate the “fair bet” principle. That is, it would not be a fair bet if regulators made one-sided ex-post interventions to cap excess returns, but a symmetric policy was not applied in the case of negative surprises to costs or demand. In any case, if regulators intervened constantly to modify the returns available to the firm—even if this were done symmetrically—it would hardly represent a “bet”, and would more represent a constant, time-consuming and costly micromanagement of the regulated firm’s profits. This is unlikely to provide a healthy environment for investment.
38. The problems of allowing for a “fair bet” and providing certainty to investors also pervade other aspects of ComReg’s pricing approach.
39. As we have explained above, ComReg has also decided to update the regulated FTTC prices to reflect reductions in the WACC and in the level of LLU and SLU cost-based prices.¹¹ This approach is consistent with other proposals and decisions made by ComReg in other areas. For example, we note that in the 2020 WACC Decision and in the CEI Consultation, ComReg proposes a level of WACC which is significantly lower than the previous WACC as a result of the reduction in interest rates in the broader economy.
40. Again, this regulatory approach is at odds with the principles of providing certainty to investors as well as being inconsistent with the principle of allowing a fair bet that we discussed above. The European Commission has, for example, recently moved to recognise the potential impact of overly-frequent price control reviews on investor confidence, and a similar concern about investor confidence and certainty arises in the context of frequent revisions of regulatory asset bases and other pricing parameters at

¹¹ We note that while in the Consultation ComReg states that the “The LLU and SLU costs derived in the ANM are slightly higher than the equivalent costs that were derived in the Revised CAM to inform the 2018 Pricing Decision”, the update NGA Model which ComReg has shared with Eircom indicates a level of LLU and SLU prices which are above those used in the model used for determining FTTC Prices.

short intervals (e.g., within two years of the last revision).¹² In fact, our concerns about the one-sidedness of ComReg’s approach are enhanced by our review of its treatment of hyper-efficiency in the context of LLU and SLU prices, and in the context of the modified scorched node approach. In the first case, there is a strong argument that ComReg should be basing these prices on the current costs of FTTH networks—which reflects the technology that today’s hypothetical operator would use—and not on copper or FTTC networks.

41. In the second case, ComReg uses a modified scorched node approach to dimension the access network. This implies that the access network modelled in the ANM is based on Eircom’s existing cabinets and exchanges, as the model “re-assigns premises to the nearest cabinets/exchange as relevant”.¹³ ComReg states that the new modelled architecture will be more efficient than Eircom’s existing architecture, as the nature of network development is such that operators do not always optimise links when new nodes are assigned to the network. The modified scorched node approach is implemented as part of the Geospatial Module, by setting algorithms that calculate the most “efficient” node for the connection of each premise. We have reviewed the approach as presented in the Consultation but have not reviewed the details of how this approach was implemented in the Geospatial Module.
42. We have a number of concerns about the application of the modified scorched node approach to the definition of the costs of Eircom’s copper network. First, we understand that ComReg calculates the scorched node approach by considering the route to the closest node, but without considering the costs of reconnecting premises to the new node. The scorched node approach is designed to measure the costs which are faced by a theoretical operator that runs a network which is equivalent to the Eircom network and optimises it. Such an operator, in achieving efficiencies, would consider whether it would be efficient to re-assign customers, and do so only if the savings from the shorter connection are higher than the cost of setting the new connection. Second, there is limited precedent for a modified scorched node approach used to model copper networks at this stage of development, or for access networks more in general. The modified scorched node approach is not very common, but it is sometimes used estimating the cost of mobile networks, where the modifications can be limited to change the function of a node, but

¹² The European Commission has recently moved to recognise the potential impact of overly-frequent price control reviews on investor confidence, stating that “*in the interest of greater stability and predictability of regulatory measures, the maximum period allowed between market analyses should be extended from three to five years, provided market changes in the intervening period do not require a new analysis.*” EEC Directive (2018/1972), 11 December 2018, explanatory notes, para. 177.

¹³ Consultation 5.17.

without changing the physical infrastructure connecting the nodes.¹⁴ We note that Cartesian developed a bottom-up network model for Ofcom to estimate the cost of FTTP development in the UK which uses a (unmodified) scorched node approach, for the non-competitive areas, and scorched earth approach, for the more competitive areas.¹⁵ Third, we find that there is some inconsistency in the fact that ComReg uses a hyper efficiency approach in its Geospatial Module, but considers Eircom's existing network when calculating the costs of the duct and pole infrastructure. In any case, the calculation of costs based on a modified scorched node approach applied to a copper-based network does not reflect the market reality that today's efficient operator would not choose to build such a network.

43. We turn next to a discussion of the approach to the pricing of specific products.

III.5. PSTN-WLR PRICES

III.5.1. Overview of ComReg's approach

44. For PSTN-WLR ComReg has introduced a cost orientation remedy for Eircom in the Regional Low-Level FACO Market, with prices based on an estimate of costs according to the following approach:

- the relevant cost for determining the price of the copper loop components is derived from a top-down fully allocated cost ("FAC") calculation. ComReg justifies this on the basis that there is little prospect of market entry in the Regional Low-Level FACO Market, and its primary concern is to allow Eircom to recover its efficiently incurred costs;
- the relevant cost for the active equipment used to provide WLR, the line card, is derived from a bottom-up LRAIC+ calculation. The approach used for the line card differs from that used for the copper local loop because for this element the relevant cost is that

¹⁴ For example, Analysys Mason used a modified scorched node approach when building a bottom-up LRIC model for ANACOM, Analysys Mason, Final Report for ANACOM, Conceptual approach for a mobile BU-LRIC mode, February 2011

(https://www.anacom.pt/streaming/ConceptualApproachMobileBU_LRICmodel.pdf?contentId=1079788&field=ATTACHED_FILE).

¹⁵ Ofcom, Promoting investment and competition in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26 Annexes 1-23 of 24, January 2020, A17.25.

faced by competing operators using LLU, who would need to invest in active equipment to provide a voice service;¹⁶

- the price is determined by considering the average cost across exchanges that are part of the Regional Low-Level FACO market,¹⁷ as derived in the ANM, which estimates the cost of the copper local loop for each exchange; and
- an upward adjustment is applied to the value of the WLR cost to compensate for under-recovery from LLU and from FTTC prices that are based on SLU and LLU. ComReg recognises that the prices set for LLU and SLU are at a level which is lower than the full top-down cost of the copper loop. The terms of the adjustment are linked to the proportion of copper lines in the Regional FACO area that serve FTTC lines (P), and the difference between the average revenue of the copper local loop cost for FTTC lines (F) and the top-down average cost of the copper loop (C). The following formula is applied:

$$W = C + (C - F) * P / (1 - P)$$

The same adjustment is also reflected in the price of CG SABB.

45. ComReg recognises that not all copper-loop costs will be depreciated at the time of switch off, but does not consider that an adjustment is required in the cost modelling to take into consideration the stranded costs resulting from this, on the basis of its claim that Eircom has already over-recovered on copper loop services in previous periods. ComReg estimates that the Net Book Value (“NBV”) of copper access assets is ~~€~~ [REDACTED] ~~€~~ in 2025, the year in which ComReg has assumed the switch-off process would begin, and ~~€~~ [REDACTED] ~~€~~ in 2028, the year in which ComReg assumes switch-off has taken place in all exchanges (other than for premises in the intervention area).¹⁸
46. ComReg assumes that WLR volumes will continue to be reasonably constant during most of the forthcoming price control period and will only decline significantly at the end of the price control period, as a result of the deployment of FTTH. This assumption, together with the assumption that capex investment drops by 50% from 2020 onwards, implies that ComReg’s cost estimates for PSTN-WLR are set to decrease until the last year of the price-control period, as we can observe in Table 1 below. We note that there are some

¹⁶ The bottom-up approach is implemented by considering the (current) unit costs of a line card, which is added to the unit cost of the passive elements, calculated on a top-down basis.

¹⁷ This is the market for Regional Low-Level Fixed Access and Call Origination Market, as defined in Section 5.21 of the FACO Decision Instrument (see Consultation, Page 182).

¹⁸ These values are derived from the Capex Module (Tab “Calc_Network_Capex_TD”) by considering the NBV of assets (excluding Non-DAM UG Transition and Non-PAM Pole Costs).

differences in prices between those published in the Consultation and those that are directly obtained from the ANM. These differences may be linked to the scrambling of some of the confidential inputs.¹⁹

Table 1: PSTN-WLR cost-based prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
ComReg Consultation	16.07	15.77	15.41	15.35	14.80	15.67
ANM	15.79	15.45	15.10	14.93	14.87	14.94

Source: Consultation, ANM

47. ComReg considers three options for setting prices:
- whether prices should be kept at the current level of €16.59 throughout the next price control period, to provide maximum stability;
 - whether they should be kept constant throughout the next price control period, but at a level corresponding to the average cost for the period; or
 - whether prices should be determined each year based on the estimated cost for that year.
48. ComReg concludes that the last approach, based on cost estimates calculated for each year should be used, because it is the approach that is most closely aligned with cost orientation, ensures full cost recovery, and stability of prices.

III.5.2. Our review of ComReg's approach

49. We find significant inconsistencies in the approach defined by ComReg for setting the prices of PSTN-WLR.
50. First, while we agree that a top-down HCA approach is consistent with the cost orientation approach and ensures that Eircom has the opportunity to recover fully the investment it has made on its copper network, ComReg's implementation of this approach is such that a significant proportion of historic investment will remain stranded because of copper switch off. Even based on the aggressive assumptions used by ComReg on the reduction of copper investments after 2019, the NBV in 2028, the majority of which will become stranded under ComReg's switch off assumption, is \times [REDACTED] \times and about \times [REDACTED] \times times the

¹⁹ We note that a closer alignment of prices is obtained if we consider that year 2021 in the model refers to the financial year 1 July 2021 to 30 June 2022 rather than to the year 1 July 2020 to 30 June 2021, which is what ComReg's model documentation suggests.

annuity for that year.²⁰ This implies that, everything else equal, the value of the annuity for these assets would need to be more than quadrupled in 2028 to ensure full recovery, or increased by 50% if it is recovered across the period 2021 to 2028.

51. ComReg’s approach is therefore inconsistent with the principle of cost orientation it claims to adopt, under which prices are set at a level that allows operators to recover efficiently incurred historic investments. ComReg has not argued that Eircom’s copper investment was inefficient, but suggests that no adjustment is required because “*Eircom has been recording excess returns for copper access services and ComReg expects that these should be sufficient to ensure that Eircom will have fully recovered all of the investments it has made in the copper cable network*”.²¹ We explain below that this claim is not substantiated.

52. ComReg has analysed Eircom’s return on PSTN-WLR over a period of two years. This is not meaningful because there are uncontrollable variances in the costs that an operator has carried out, for example in relation to the additional costs incurred in relation to storms, which means that any reasonable return analysis should be considered over a longer period. This period should be set commensurate to the asset lives of the individual copper related assets. In addition, there are other costs which are included in the regulatory accounts (such as working capital which gets allocated to the WLR-PSTN), which were not included in the cost considered by ComReg to set prices. If these elements are considered in the calculation of returns, the Return on Capital employed is in line with the regulated WACC set by ComReg for these financial years. We also note that before 2016, the approach used for setting PSTN-WLR was based on a retail-minus approach, with the retail price also set by ComReg, which suggests that the level of returns earned by Eircom over that period was allowed per the regulatory regime. Finally, we note that in the 2018 Pricing Decision ComReg considered the returns Eircom made above WACC in the Wholesale Access Markets as contributing to make the investment in making the investment in FTTC a “fair bet”.²² It therefore appears disingenuous for ComReg to claim that such returns should also contribute to the recovery of costs which will be stranded as a result of the copper switch off.

53. In the Consultation, ComReg has analysed Eircom’s return on PSTN-WLR over a period of two years, FY2018 and FY 2019. ComReg explains that, having set prices of the copper access network adopting a top-down approach in 2016, it would expect that the average

²⁰ This is calculated by dividing the total 2018 NBV of assets from the Capex Module (Tab “Calc_Network_Capex_TD”), excluding Non-DAM UG Transition and Non-PAM Pole Costs, by the corresponding total HCA annuity including cost of capital.

²¹ Consultation 6.16.

²² Eircom Response to Consultation, response to Question 4, subsection titled “Copper switch off section”.

return over the price control period should tend towards the regulated WACC. ComReg recognises that there are a number of factors that lead to a variation of the returns, which mean that reported returns, in a given year, will not necessarily align with the regulated WACC. When highlighting that the returns on PSTN-WLR were higher than the regulatory cost of capital, ComReg notes that there were a number of factors that during the two financial years examined could have affected the calculation, including the significant impact of storms, the impact of how price reductions on POTS based FTTC were reflected in the accounts, and the fact that the cost of PSTN-WLR active equipment is based on a bottom-up LRAIC+ basis.

54. Eircom has shared with us analysis showing that if all elements are considered, the level of return for WLR profitability is actually at or just below the level of the regulatory WACC.
55. Eircom's analysis adjusted returns for the following factors. First it adjusted down revenues of WLR to remove the overstatement linked to the reduction in the POTS based FTTC prices. Second, it stripped out the variance in relation to the cost of storms by replacing the values with a multi-year average. Third it stripped out the impact of the differences between the allowance for active equipment and the actual costs of the line cards. Last it stripped out the value of the negative working capital which gets allocated to these products. The top-down costs calculations do not account for the level of working capital, and therefore this component should be removed when making this comparison.
56. The results of Eircom's analysis do not support the contention that Eircom over-recovered in relation to the passive copper network, as suggested by ComReg. We note that in the Consultation ComReg notes that excessive returns were recorded "*prior to the 2018 Pricing Decision*".²³ We have considered the evidence presented in the 2018 Pricing Decision and consider that some of the adjustments which were made by Eircom would also be relevant for that analysis of the returns of copper services. In particular, it would be important to ensure that that analysis excludes any revenue which is linked to prices which were either unregulated or based on bottom-up LRIC+. They would also need to consider the impact of negative working capital on the level of return showed by the regulatory accounts.
57. ComReg also needs to consider the fact that Eircom bears significant operational network risks, for example in relation to price inflation or cost overruns. Eircom should be allowed to retain any additional returns that it may have accumulated in relation to such risks, because it would be expected to absorb any potential losses it might have incurred if it had earned a return below the regulatory WACC as a result of external shocks.

²³ Consultation, 6.16.

58. As we explain in paragraph 47 above, ComReg considers multiple approaches for determining the prices based on the outcome of its estimates in the ANM, one in which existing prices are maintained, one that uses constant prices based on the average cost across the price control period, and a last one with prices set to the ANM cost estimates for each year. It justifies its choice of the last option because it considers it strikes the right balance between cost orientation and price stability. If price stability is indeed a desirable property, ComReg should have considered using a glide path for determining prices, which would avoid a sharp reduction in prices at the beginning of the price control period (followed by a significant increase in the final year), while at the same time allowing for full cost recovery. This not only would provide additional predictability and price stability but would also ensure that the recovery of costs is not based on year-on-year variation of Eircom's costs, but reflects Eircom's overall investment in the copper network.
59. In relation to the uplift which ComReg defined to compensate under-recoveries from its LLU inputs into FTTC prices, on the basis that SLU does not fully recover the cost of the copper loop, and that the LLU and SLU prices are based on shorter lines in the Urban Commercial Areas, we note that this only applies to the small proportion of FTTC lines which are available in the Regional Low-Level FACO market, but that Eircom will continue to under-recover in relation to the cost of its local loop in other areas in which FTTC is sold.

III.6. LLU AND SLU PRICES

III.6.1. Overview of ComReg's approach

60. ComReg recognises that the volume of LLUs and SLU is currently immaterial (there are fewer than 2,500 customers on LLU and none on SLU), but explains that both services are important elements of the cost stack underpinning the price of FTTC services, with SLU used as an input for standalone FTTC and LLU used as an input for eVDSL.
61. ComReg confirms its view that the relevant cost standard for SLU and LLU is a combination of the bottom-up LRAIC+ approach for the assets that are not reusable for FTTH (mainly copper assets), and fully allocated top-down for the assets which are reusable for FTTH (mainly ducts and poles).
62. In relation to LLU and SLU prices, ComReg considers that the relevant costs to be considered are the average costs of the lines serving the Urban Commercial footprint, on the basis that this was set as an area that only contains premises that are close enough to an exchange or cabinet to avail of FTTC based services. This assumption replaces the previous assumption ComReg used to exclude LLU lines which are more than 3 km from the exchange or SLU lines more than 1.5 km from a cabinet.

63. The cost of LLU incorporates the same passive network elements as PSTN-WLR, i.e., it considers copper and CEI elements on both the e-side and the d-side. SLU only considers the passive network elements on the d-side, and it does not consider the copper cable costs from cabinet to exchange on the e-side. Different operating cost estimates are also used between LLU and SLU, as discussed in Section V below.
64. In Table 2 below we show the comparison between the outputs of the ANM and the prices proposed by ComReg in their consultation.

Table 2: Comparison of costs for LLU and SLUs in the ANM and prices proposed in ComReg’s Consultation (€ /month/line)

	1 Jul 20 - 30 Jun 21	1 Jul 21 - 30 Jun 22	1 Jul 22 - 30 Jun 23	1 Jul 23 - 30 Jun 24
LLU				
ComReg Consultation	12.72	12.72	12.79	13.44
ANM	12.93	12.93	12.98	13.50
SLU				
ComReg Consultation	10.43	10.39	10.39	10.82
ANM	10.11	10.07	10.06	10.41

Source: Consultation, ANM

65. We note that there is a material divergence in the prices in the consultation as compared to the results from the model, particularly in relation to SLU prices, which we are not able to identify the causes of, but which may be linked to the scrambling of some of the confidential inputs.

III.6.2. Our review of ComReg’s approach

66. In relation to LLU and SLU we note that ComReg’s approach of using a combination of a top-down FAC approach for reusable assets and bottom-up LRAIC+ approach for non-reusable assets creates inconsistencies, which we explain in more detail in Section VIII below. While we can understand that the use of the top-down approach for reusable assets may be based on the assumption that the new entrant would use Eircom’s ducts and poles network, the implementation of this approach produces inconsistent results, with significant differences between the volumes of duct and poles in Eircom’s CEI network, from the DAM and PAM Modules, and the estimates made in the Geospatial Module.
67. In addition, the use of the LRAIC+ approach for non-reusable assets is based on the idea that this approach captures the costs that an efficient operator entering the market today to build the same assets. However, an efficient entrant today will not build a network using copper assets. The fundamental purpose of using the costs of the efficient entrant was to guide appropriate entry and investment signals, and so they should be updated to reflect the fact that *de novo* investment in networks will take the form of FTTH investment, not

copper or FTTC investment. Further, as mentioned above, if an operator were to simultaneously rollout FTTC and FTTH networks today, it would do so in the recognition that the asset lives of assets associated with FTTC would be reduced as a result of increased deployment and uptake of FTTH.

III.7. CURRENT GENERATION STANDALONE BROADBAND

III.7.1. Overview of ComReg's approach

- 68. CG SABB uses ADSL or ADSL2 Plus technology to provide a standalone broadband access service that is delivered without PSTN voice service.
- 69. CG SABB uses the same passive network elements as PSTN-WLR, even if no voice line is provided. The cost-standard also matches that used for PSTN-WLR, based on top-down FAC cost for the copper loop, with bottom-up LRAIC+ used for deriving the cost of the active element (the DSL port), which is equivalent to the cost of that used for current generation bitstream in the NGN Core Model. However, the prices are determined on the basis of the average costs in the WCA area, rather than the regional FACO area used for PSTN-WLR.
- 70. Different prices are also used depending on whether the service uses Regional or National Handover.
- 71. Table 3 below shows the comparison between the outputs of the ANM and the prices proposed by ComReg in their consultation. We note that there is some divergence in the prices in the consultation as compared to the results from the model, in the period FY21 to FY24, which may be linked to the scrambling of some of the confidential inputs.

Table 3: Comparison of costs for CG SABB in the ANM and prices proposed in ComReg's Consultation (€ /month/line)

	1 Jul 20 - 30 Jun 21	1 Jul 21 - 30 Jun 22	1 Jul 22 - 30 Jun 23	1 Jul 23 - 30 Jun 24
ComReg Consultation	19.97	19.71	19.45	19.49
ANM	19.68	19.41	19.12	19.11

Source: Consultation, ANM

III.7.2. Our review of ComReg's approach

- 72. The approach to pricing CG SABB mirrors that used for pricing PSTN-WLR, and we therefore have a similar concern, in relation to the potential under-recovery of assets that become stranded because of copper switch-off. We have explained in paragraph 50 above that ComReg's implementation of this approach is such that a significant proportion of

historic investment will remain stranded because of copper switch off. We have also explained that we do not agree with ComReg's claim that no adjustment is required for the assets that will become stranded, because "*Eircom has been recording excess returns for copper access services*". First, we think that this is inconsistent with the principles of cost-orientation and with the level of risk which was faced by Eircom on the investment. Second, we consider that the analysis of historic returns presented by ComReg is not meaningful, because of the short period considered and because it has not adjusted for relevant factors which may explain why reported returns were above the regulatory WACC. ComReg has also not demonstrated that over the life of assets returns were consistently above the regulatory WACC, or that the additional returns compensate for the losses that Eircom will incur in relation to stranded copper assets.

73. In relation to the approach to determining prices, we note a more limited year-on-year fluctuation of prices than in the case of PSTN-WLR.

III.8. UPDATE OF FTTC PRICES

III.8.1. Overview of ComReg's approach

74. In this section we review ComReg's proposal to update FTTC prices. ComReg determined the costs and prices of FTTC services in 2018, based on the costs of LLU, SLU and NGA links determined in the Revised CAM and the costs of active equipment and backhaul as calculated in the NGA Model and in the NGN Core Model. ComReg considers that the estimates of LLU and SLU costs in the ANM are more robust than the estimates in the Revised CAM that the new estimates should be reflected in updated prices for FTTC services.²⁴ It also considers that the new WACC of 5.61% which it determined as part of the 2020 WACC Decision, should be reflected in updated prices.²⁵
75. Based on this decision it has updated the NGN Core Model and the NGA Model to reflect the new value for access prices and WACC. It has considered that no changes are required in the other parameters of the model.

III.8.2. Our review of ComReg's approach

76. As we have mentioned above in Section III.2 above the approach of frequently updating prices is at odds with the principles of providing stability and predictability to investors and

²⁴ Consultation, 6.73.

²⁵ Consultation, 6.75.

is likely to result in denying Eircom a fair bet on its investment in the copper network and in the other FTTC related assets.²⁶

77. Eircom asked us to review the updated NGA Model used by ComReg to determine the new FTTC prices, and comment on how the model were updated and confirm that the update was carried out consistently with the approach detailed in the Consultation. Details of our review are provided in Section VII below, and a specific critique of the FTTC-based Bitstream calculation is included in Section VIII.4. Our review did not include a full assessment of the methodology used in the NGA Model.
78. However, as we explained above, there is no economic merit in updating FTTC prices on a frequent basis, and this may indeed cause problems of under-recovery and serve to deter investment.²⁷
79. A brief overview of the ANM is provided in Appendix A below. We next turn to a detailed review of the specific modules that comprise the ANM.

NON-CONFIDENTIAL

²⁶ The European Commission has recently moved to recognise the potential impact of overly-frequent price control reviews on investor confidence, stating that “*in the interest of greater stability and predictability of regulatory measures, the maximum period allowed between market analyses should be extended from three to five years, provided market changes in the intervening period do not require a new analysis.*” EECC Directive (2018/1972), 11 December 2018, explanatory notes, para. 177.

²⁷ See, for example, the views of the European Commission cited to above in paragraph 39, which reflect the Commission’s recognition that overly frequent revisions to regulated prices can deter investor confidence and certainty.

IV. Service Demand Module

IV.1. GENERAL

80. Two versions of the Service Demand Module have been provided: a non-confidential version containing the logic and formulae of the module, but with anonymised inputs (“the Non-Confidential Service Demand Module”); and a version containing only the outputs that feed into the other modules, but stripped of all input data and underlying calculations (“the Service Demand Output Module”).
81. The Service Demand Module feeds into each of the other modules, providing the forecast of volumes that they use. Its assumptions therefore have a large impact on the entire ANM.
82. We have reviewed these modules for logic and internal consistency, both within the module itself and with the other modules of the ANM. We comment in turn on model complexity and usability, internal consistency, and individual problematic assumptions.

IV.2. MODEL COMPLEXITY

83. The Service Demand Module is large and complicated with multiple inputs and over 16 calculation sheets, each with thousands of rows. Because of the large quantity of data and the exchange-level granularity, calculations tend to be arranged in matrices for three footprints that include each exchange in each year. The size and complexity of the Module reduces traceability and increases the chances of inconsistencies and errors.
84. It appears that some of this complication is unnecessary and inefficient. There are, for instance, whole matrices which are duplicated from one sheet to the next,²⁸ and others that consist of very minor variations on a previous matrix.²⁹
85. Worksheets are not always built linearly, with some cells drawing on information that is above them in the worksheet, and others drawing on information that is below them. This circularity within the worksheet structure is not good modelling practice.³⁰

²⁸ For example, in Calc_Incumbent_FTTH_Connections, the *Premises with active Incumbent FTTH Connection - Year End* matrices found in rows 34581:38037 are all duplicates of matrices produced on the previous sheet.

²⁹ For example the “year start” matrices produced in rows 13:10379 of Calc_Incumbent_FTTH_Connections, which all consist of the equivalent “year end” matrices with each value shifted over one year.

³⁰ This is particularly the case in the Incumbent FTTH calculation sheets. See for instance the calculation and preceding calculations of *FTTH additions* in rows 17296:20751 of Calc_Incumbent_FTTH_Premises or those of *Premises with no Incumbent FTTH Connection - Year End* in rows 31124:34579 of Calc_Incumbent_FTTH_Connections.

IV.3. INTERNAL CONSISTENCY OF ASSUMPTIONS AND CALCULATIONS

86. As a result of the number of different input parameters and the amount of calculation steps taken in the model, it is particularly important that the model be reviewed thoroughly for consistency between the assumptions and formulae.
87. From our review, it appears that the module does not function as it should and the assumptions and formulae do not meet this criterion of internal consistency. This causes counter-intuitive outcomes.
88. For instance, in the IA the number of FTTH lines is forecasted to increase from 0 in 2019 to 34,288 in 2024.³¹ In the same period, the number of non-cable, non-FWA broadband lines in the IA increases from 89,817 to 206,431.³² This implies that the roll-out of FTTH somehow sparks a massive increase in demand for ADSL broadband.³³ This result is not logical, and would seem to demonstrate that mutually inconsistent parameters have been used in the Service Demand modelling.
- There are a number of different assumptions and formulae underpinning this result, one of which is the assumption that, once FTTH is first available in an exchange-footprint, the proportion of premises using a fixed line converges to the average proportion in the urban commercial area within 4 years.³⁴ In the IA, this results in a much more rapid increase in the number of active fixed-line premises than there is uptake of FTTH, resulting in the number of copper-based lines increasing substantially too. We would not logically expect the roll-out of FTTH to be a spur for greater up-take of copper services.
 - In the description of the assumptions on the penetration of fixed lines and the uptake of FTTH in Consultation 5.42 and 5.44, there is no indication that these parameters were checked for mutual consistency. This will be a vital exercise for all parameters and assumptions in this module, both those made directly in the input sheets and those made implicitly through the functioning of the calculations.
 - While the lack of connection between the Service Demand Module and the other modules means that we cannot test the effect on pricing of this issue, it would appear likely to depress PSTN WLR and SABB prices by artificially inflating the number of

³¹ Non-Confidential Service Demand Module, Calc_Active_FTTH_Premises, row 14990.

³² Non-Confidential Service Demand Module, Calc_Active_Cable_FWA_Premises, row 17297.

³³ This is confirmed in a later sheet: row 3466 of Calc_Active_ADSL_Premises shows that the number of ADSL lines in the IA is forecast to increase from 89,817 in 2019 to 172,143 by 2024.

³⁴ Consultation 5.42.

copper services in the intervention area, resulting in a higher denominator for cost to be divided by. This will be particularly the case for common cost, because common cost is allocated to copper service based on the number of services in commercial areas (which are less affected by this issue), but the PSTN WLR and SABB prices are calculated by dividing this common cost by the total number of copper lines, including those in the intervention area. See Section V.4 for details on the common cost calculation.

89. Another example can be seen in the assumption in the Non-Confidential Service Demand Module that there is 5% uptake of FTTH in the first year it reaches an exchange-footprint, and 5% more per year thereafter.³⁵ This should imply that in the first year after it begins FTTH roll-out in the IA, NBI would have a 5% customer share in the exchanges it has rolled out to, compared to Eircom's 95% share. However, the Non-Confidential Service Demand Module currently predicts only a 2.7% share for NBI compared to Eircom in these exchange footprints.³⁶ This points to an illogicality in the functioning of the module. It appears to be caused by the module allowing FTTH roll-out by non-NBI competitors in the IA. Noting that this is a non-confidential version of the module with some randomised assumptions, it still should not be the case that the model logic allows this to occur. The NBP area was defined because it was an area where it was not feasible for a competitor to roll-out another network. Further:

- In 2020, the first year of NBI's roll-out, more than 50% of the active FTTH premises in the IA are from competitors rather than NBI.³⁷
- This may be a result of ComReg's assumption that SIRO FTTH is fully available in an exchange-footprint if there is at least one active SIRO FTTH line in that exchange footprint.³⁸ This assumption would mean that if even one premises in an IA-exchange area had been reached by SIRO, the entire area would be considered to have SIRO FTTH availability. Given that a single exchange can have premises in all three footprints, it is entirely possible that a competitor would consider occasional premises in the IA to be worth building to, but this should not be taken to mean that the rest of the IA in that exchange would also be subject to competitive build. Such an assumption would imply that the entire mapping of the IA was incorrect.

³⁵ Non-Confidential Service Demand Module, Input Parameters, row 64.

³⁶ Non-Confidential Service Demand Module, Output_CEI, H300.

³⁷ Non-Confidential Service Demand Module, Calc_Incumbent_FTTH_Premises, I20751 and I27665 for total FTTH additions in the IA and NBI's FTTH additions respectively.

³⁸ Consultation 5.37 c.

- This assumption reduces the predicted rollout of NBI fibre and depresses the forecasted customer share for NBI, particularly in the early years of the modelling. This will mean that the duct and pole prices estimated for NBI in the CEI Consultation will be incorrect, in particular those under the per-customer approach to sharing of network costs that ComReg has proposed in the CEI Consultation.
 - The competitor share of FTTH should be set to 0% in the IA in order to be consistent with the assumption that these are uncompetitive areas.
90. All the parameters in the model need to be checked to ensure that they are logically consistent with each other, and to make sure that the model as a whole is calibrated to produce sensible results. As it stands, the lack of internal consistency in the Service Demand Module means that its results cannot be relied on.

IV.4. INPUT ASSUMPTIONS

91. There are a number of assumptions in the Service Demand Module which we believe need further review.

IV.4.1. FTTH uptake

92. ComReg has used a single FTTH uptake curve for all three footprints.³⁹ It claims to have based this curve on forecasts provided by NBI for its roll-out in the Intervention Area.⁴⁰ This does not appear correct for two reasons:
- The Urban Commercial Area is very different in terms of infrastructure and market structure from the Rural Commercial Area and the Intervention Area. As ComReg has discussed, there is established competition in the Urban Commercial Area as well as a large FTTC network.⁴¹ It therefore seems unlikely that this area would have the same FTTH uptake rate as the Rural Commercial Area and the Intervention Area, which had neither of these things.
 - Since Eircom's FTTH roll-out in the Rural Commercial Area began 4 years ago and has now been completed,⁴² there should be substantial data on actual FTTH uptake rates in this area. We understand that this area had a similar market structure to the Intervention Area, so it would make sense to use this uptake rate in both areas. In this

³⁹ Non-Confidential Service Demand Module, Input Parameters, row 64.

⁴⁰ Consultation, 5.44.

⁴¹ Consultation, 5.21-5.26, 5.46-5.47.

⁴² Eircom.

case, since actual data on consumer behaviour should be available, it is to be preferred to hypothetical forecast data provided in a business plan.

IV.4.2. Competitor FTTH availability

93. As discussed in para. 89 above, ComReg's modelling assumes that a competitor's FTTH network is fully available in any exchange-footprint where the competitor has a single active FTTH line or has passed over 50% of premises.⁴³
94. The first of these two conditions does not seem appropriate. Given that a single exchange can be split across all three footprints, if there has been a competitor's FTTH rollout in one footprint within an exchange it is plausible that one or two premises in another footprint might be connected to FTTH without there being broader availability in the rest of that footprint.

IV.4.3. Service split between footprints

95. ComReg claims to have distributed services between footprints and exchanges based on the number of premises per exchange-footprint.

"Eircom total active lines are apportioned to exchange-footprints based on the total count of premises in each-exchange footprint after considering whether competing services were active at these premises. For example, ADSL active lines have been apportioned evenly between premises in exchange-footprints but only to premises without an active competitor service or an active Eircom FTTC/FTTH service. For FTTC and FTTH, the apportionment to premises is also done in this way, but only to exchange-footprints in the Urban Commercial Area and Rural Commercial Area footprints respectively."⁴⁴

96. In practice, the split of services between footprints and exchanges has been entered into the Service Demand Module as percentages that have apparently been derived based on this premises calculation.⁴⁵ In the Non-Confidential Service Demand Module, the split of ADSL and voice only services between the Urban Commercial Area, Rural Commercial Area and IA uses a ratio of 30:30:40, while FTTC is allocated 100% to the Urban Commercial Area.⁴⁶

⁴³ Consultation, 5.37 c. and Specification Document, 3.20-3.22. Data from SIRO was used to calculate competitor FTTH deployment.

⁴⁴ Consultation, 5.38.

⁴⁵ Specification Document, 3.13.

⁴⁶ Non-Confidential Service Demand Module, Input_2019_Active_Volumes, F1168:H1170.

97. The description in the Consultation of this allocation appears to say that the allocation for ADSL has been done using the *total* number of premises in each exchange-footprint less the premises with an active competing service, rather than using the number of premises with an active fixed-line less those with an active competing service. We are not able to check the underlying calculation, but if this reading is true then this is an incorrect methodology. A large number of premises do not have an active fixed-line service, and these premises are not evenly distributed across footprints. The Urban Commercial Area has the highest penetration rate of active fixed line services, followed by the Rural Commercial Area and the IA.⁴⁷ This means that any allocation based on total premises will be incorrectly skewed towards the IA and away from the Urban Commercial Area, resulting in proportionally more copper services being allocated to the IA and fewer to the Urban Commercial Area than is actually the case. This will then affect other allocations in the ANM modelling. In particular, it would appear to affect the common cost allocation: as described in Section V.4 common cost is allocated between copper and fibre based on the number of services in the commercial areas, so having fewer copper services in the Urban Commercial Area will reduce the amount of common cost allocated to copper.
98. Furthermore, this allocation methodology does not seem to take into account premises that have multiple lines, or the potential distribution of these premises. It is to be expected that that a disproportionate number of business premises would be situated in the Commercial Areas rather than the IA, and that these premises would often have multiple lines. Ignoring this factor may therefore also result in the Commercial Areas being allocated fewer copper services than is actually the case while the IA is allocated more.

IV.4.4. Copper switch-off

99. The Service Demand Module currently contains an assumption that copper switch-off in each exchange-footprint begins five years after Eircom or NBI enable FTTH in that exchange-footprint, with the earliest switch-off beginning in 2025.⁴⁸
100. Given the practical and regulatory constraints on Eircom, a five-year schedule from FTTH enablement to copper switch-off appears unrealistic:
101. The granular nature of the switch-off that has been modelled also appears unrealistic. The Service Demand Module currently assumes that switch-off will occur at a different time for each exchange footprint. This means that within a single exchange it often models three

⁴⁷ The current modelling contains a trend to increase the penetration of fixed-line services in the Rural Commercial Area and the Intervention Area to the level seen in the Urban Commercial Area. See Consultation 5.42. In the Non-Confidential Service Demand Module, 81% of Urban Commercial premises have an active fixed line service, compared to just 49% of IA premises.

⁴⁸ Non-Confidential Service Demand Module, Input Parameters, F91 and F93.

different switch-off dates. Our understanding is that it would not be feasible for copper switch-off to occur at different times for different parts of a single exchange, so at minimum copper switch-off will only occur in an exchange when the whole exchange has FTTH availability. Moreover, it may be most effective for switch-off to occur in regional tranches consisting of a number of exchanges at a time. The current granular structure of the copper switch-off modelling at a sub-exchange level therefore appears incorrect.

IV.5. EFFECTS

102. Most of the issues noted above would require significant changes to the structure of the module if they were to be addressed. However, we have tested the effect of two changes on the volume of lines. Given the disconnect between the Non-Confidential Service Demand Module and the Service Demand Outputs used in the Confidential ANM, we have not been able model the effect of these changes on the prices produced by the ANM.

IV.5.1. Service split between footprints

103. We tested the effect of allocating more service volumes to the Urban Commercial Area compared to the IA by changing the ratio of ADSL and voice-only services between the three footprints from 30:30:40 to 40:30:30 in the Non-Confidential Service Demand Module.

104. This results in 51,500 more active copper lines being allocated to the Urban Commercial Area in 2019, and 51,500 fewer active copper lines being allocated to the IA.

105. This also increased the fixed-line penetration rate in the Urban Commercial Area from 81% to 85%, and thereby increased the trend of fixed-lines in the Rural Commercial Area and the IA. In this scenario, these both converge to 85% penetration four years after FTTH reaches an exchange-footprint. This means that the effect on copper lines in these footprints is lower in subsequent years, and FTTH lines converge to a higher level than in the base scenario.

106. There is also a slight negative effect on NBI's customer share, which is input into the PAM and DAM.

IV.5.2. Copper switch-off occurs in 2030

107. We adjusted the Non-Confidential Service Demand Module so that all copper switch-off occurs at once in 2030.

108. This only begins to affect volumes in 2025, when the module originally began forecasting copper switch-off. Between 2025 and 2029 the amount of copper-based services declines more gradually than in the original module, and the amount of FTTH increases more

gradually. In 2030 the results converge to the original results as at this point all copper is switched off in both versions of the module. This would affect the allocation of cost between copper and FTTH services and would be expected to result in more cost being allocated to copper until 2030.

109. This also increases the NBI customer share in the IA from 2025 onwards. This is because “shared” exchanges in the original scenario switched to NBI-only exchanges after 5 years and were then taken out of the customer share calculation. These exchanges now remain shared for longer and pull up the overall NBI customer share because they have reached a higher level of FTTH take-up. This would feed through to the prices calculated in the PAM and DAM Modules, with fewer exchanges receiving NBI-only prices, but shared exchanges receiving a higher price under ComReg’s proposed “per customer” pricing approach to shared network costs for Eircom’s CEI.

NON-CONFIDENTIAL

V. Opex and Common Cost

V.1. GENERAL

110. The Opex Module deals with four categories of opex: direct cost, network cost, indirect cost and common cost. It calculates the level of these for each year using either a Top-Down (TD) or Bottom-Up (BU) approach and then combines the direct and indirect cost into non-common opex and keeps the common opex separate. The common and non-common opex are then allocated between FTTH and copper lines on a per-line basis. The copper per-line costs feed into the Capex Module and inform the ANM prices that it calculates. Opex costs specific to pole and duct access are separated and input into the Pole Access Module and the Duct Access Module.
111. The key elements we consider throughout are the principle of full cost recovery – that costs can be recovered through the service prices – and the consistency of the treatment of cost between modules.

V.2. DIRECT AND NETWORK OPEX

112. Both the TD and BU calculations use input data from the 2019 AFI, and for direct and network opex the split of cost between copper and FTTH is already provided in the inputs. The BU calculation replaces one item of cost – the Direct R&M Line copper opex – with an adjusted input from the Revised CAM.⁴⁹
113. The direct opex input costs (either TD or BU) are scaled over time based on cost trends and the forecast number of copper and fibre lines from the Service Demand Module.
114. The network opex costs are held constant over time and between the TD and BU approaches. Their split between copper and fibre also does not change.
115. Three elements of the treatment of direct and network costs stand out as questionable:
- One of the adjustments made to the Direct R&M Line input data from the Revised CAM is to scale it down by the ratio of the number of lines in the ANM to the number of lines in the Revised CAM.⁵⁰ It is questionable whether such a scaling is appropriate, as we

⁴⁹ The original cost data from the Revised CAM is adjusted down based on the ratio of the number of lines in the ANM to the number of lines in the Revised CAM. There is also an upward adjustment made to account for pay inflation and an adjusted materials/pay ratio based on the 2019 AFI. See I.Opex.1_Confidential_AFI_Inputs_1, BU Copper Line Repair Opex.

⁵⁰ I.Opex.1_Confidential_AFI_Inputs_1.xlsb, BU Copper Line Repair Opex, F44.

understand that the Revised CAM already incorporated significant efficiencies and there is likely to be a large fixed element to the staff and pay costs included in the Direct R&M Line opex. We have calculated a scenario without this downward adjustment in Section IX.2.1.

- We note that the opex cost trends are currently set to 0%.⁵¹ This is recorded as a placeholder in the Specification Document and should therefore be revisited.⁵² It seems unreasonable to expect that there would be no increase in opex cost inputs over the modelling period, so this assumption is likely to result in under-recovery of opex costs. We would expect to see some inflation built into the generic cost trend to take into account wage increases, and the other cost trends should be based on best-estimate forecasts (potentially derived from historical trends in these costs). If ComReg is expecting cost input efficiencies, it should state and model this clearly and explain how these are compatible with the other cost reductions it has modelled.
- In the current modelling (with 0% cost trends), there is a large reduction in cost modelled over time as a result of having fewer active copper lines. This is not offset by increases due to having more active FTTH lines. As a result, the levels of direct opex decline over time, with levels in 2022 being approximately €5 million lower than the starting 2019 levels.⁵³ In particular, there are forecast to be significant declines in Direct R&M costs and Direct Provisioning costs. These do not seem reasonable.
 - It is unlikely that it would be possible to reduce Direct R&M costs while maintaining both a copper and an FTTH network. We understand that this would in fact increase the complexity of R&M work, as there would be two distinct types of faults and clearance.⁵⁴
 - Provisioning costs are forecast to decline dramatically – by 2022 they are predicted to be at just 25% of the 2019 level. We understand from Eircom that this level of decline is unlikely to occur within this price control period.⁵⁵ This should be investigated further. In the modelling it is driven by a rapid decline in the forecast number of PSTN connections from the Service Demand Module.

⁵¹ Opex Module, Input Parameters, H31:H34.

⁵² Specification Document, Figure 62, I.Par.9 – I.Par.12.

⁵³ See the scaling done in the Opex Module, Calc_Opex_Scaling, rows 81:86. Comparison is for 2022 between the original cost in the left-hand *BU/TD Cost* columns and the scaled cost in the *Cost in selected year* columns. Under the TD approach a reduction of €5.46m is seen, and under the BU approach a reduction of €4.38m is seen.

⁵⁴ For a more detailed discussion of R&M costs, see Eircom Response to Consultation, response to Q.9, subsection titled “Repair and maintenance”.

⁵⁵ Eircom.

- We have calculated a scenario with adjustments to this scaling in Section IX.2.1.

V.3. INDIRECT COST

116. Indirect costs are input from the 2019 AFI for IT and Network Management. Each of these is considered to have a fixed and a variable portion (60% fixed for IT and 30% fixed for network management). The variable portions are scaled proportionally to the total direct opex, while the fixed portion is held constant.
117. This means that under the BU approach the variable portions of these costs are scaled down in the base year because there is less Direct R&M in this approach. Under both approaches these variable costs are also scaled down over time in line with the decline in direct opex.
118. Indirect costs are then allocated equi-proportionally between copper and fibre in line with the direct opex.
119. Almost all non-common copper opex costs (direct, network and indirect) are then distributed evenly between exchanges and footprints based on the number of copper lines in that footprint. The only exception is Network Land and Buildings, which is considered to only be incurred in the commercial areas.

V.4. COMMON COST

120. Common corporate costs are input from the AFI for Network Rates, IT, Accommodation, Transport, Personal Admin and Other. These are treated similarly to the indirect cost – they have a fixed and a variable portion: the variable portion in the base year is scaled down in the BU approach in line with direct opex, and in both approaches the variable portion is scaled in future years in line with the decline in direct opex over time.
121. We note that fixed and variable proportions set in the Opex Module are used for both indirect and common cost and are used to perform a significant scaling. These should be rigorously checked to ensure that the right amount of each of these costs is being scaled down.
122. After this scaling, common cost is allocated between copper and FTTH lines based on the number of active lines to premises in each of these categories in the commercial areas. Once common cost has been allocated between FTTH and copper, the copper common cost is then recovered from copper-based products in two ways:

- They are allocated to LLU and SLU as a per-line common cost in the BU modelling. This cost is calculated by dividing the BU copper common cost by the number of copper lines in the commercial areas. This per-line common cost is then treated in the same way as other opex costs in the Capex Module, with the full amount being included in the LLU price, but only 85% being included in the SLU price.⁵⁶
 - They are allocated to PSTN WLR and SABB as a per-line common cost in the TD modelling. This per-line common cost is calculated by dividing the copper common cost by the number of copper lines in all areas (including the intervention area).⁵⁷ This results in a lower per-line common cost than used for LLU and SLU.
123. Common cost is also recovered through a mark-up on dark fibre and duct and pole access. This mark-up is currently set at 18.9% in the models.⁵⁸ According to the Specification Document, this has been calculated using the total common cost in each year between 2021 and 2025 from the Opex Module divided by the total capex in that year from the Capex Module.⁵⁹
124. There are a number of issues with the way this common cost allocation has been done.
125. The equal per-line allocation of common cost between copper and FTTH commercial lines results in common cost being drawn away from FTTC lines (included in the copper category) and other copper lines and allocated to FTTH.
- This is inconsistent with the principle of sending efficient signals to new entrants in the FTTC market.⁶⁰ No efficient operator would roll out FTTC while simultaneously building an FTTH network.
 - Furthermore, ComReg has stated that this allocation of common cost between copper and fibre “means that, over time, the overall recovery of common corporate costs is maintained as customers migrate off Eircom’s copper network onto its fibre network in

⁵⁶ Capex Module, Calc_Network_Annual, rows 418, 461, 509, 516 and 517. This appears to be in contradiction to Consultation, para. 5.140, which states that “the same level of common cost is recovered regardless of whether it uses an LLU or SLU cost input.” See also Consultation, para. 6.39.

⁵⁷ Opex Module, Calc_Opex_Apportionment, row 82. This feeds into Capex Module, Input_Opex, row 39 and through to Capex Module, Calc_Network_Annual, row 418 and the subsequent price calculations when TD results are run to derive PSTN WLR and SABB prices.

⁵⁸ Capex Module, Dashboard, D51. See also PAM Module, Input_Parameters, F34 and DAM Module, Input_Parameters, F33.

⁵⁹ Specification Document, 6.35, 7.42 and Figure 109, I.Par.20.

⁶⁰ This principle is stated by ComReg in Consultation, 4.44.

the commercial areas.”⁶¹ However, this assumes that the market-driven FTTH prices are high enough to support a recovery of corporate common cost. We understand from Eircom that this is not the case. Therefore, the approach of allocating common cost to FTTH while regulating the other prices that could support this cost means that there will not be full cost recovery over all services.

- We calculate a scenario in which FTTH does not bear any of the common cost in Section IX.2.3 below.

126. The inclusion of only 85% of the common cost in the SLU price is inconsistent with the Consultation, para. 5.140, which states that “in the case of copper-based services, the same level of common cost is recovered regardless of whether it uses an LLU or SLU cost input.” It also results in an under-recovery of common cost, since 15% of the common cost that is allocated to SLU lines in the Opex Module is removed and unrecovered. We calculate a scenario where this effect is corrected in Section IX.2.1.

127. The mark-up of 18.9% that is currently used for dark fibre and duct and pole access does not match the outputs of the model. Recalculating this using the versions of the Opex and Capex Modules provided to Eircom provides a mark-up percentage of 23.4%.⁶² We calculate a scenario where this mark-up is corrected in Section IX.2.1.

⁶¹ Consultation, 5.155.

⁶² For more detail on this calculation, see Appendix B.

VI. Capex Module

VI.1. INTRODUCTION

128. Our review of the ANM Capex Module covers the following elements:

- an overview of the model structure and how the costs of the different services are calculated;
- high level comments on the approach used to calculate the costs of capex;
- a review of key model assumptions used to calculate future capex;
- a discussion of the calculation of annuities and how different assumptions on WACC may affect the results of the model; and
- potential errors we have found in the model.

129. Each of these elements is now discussed in turn in turn.

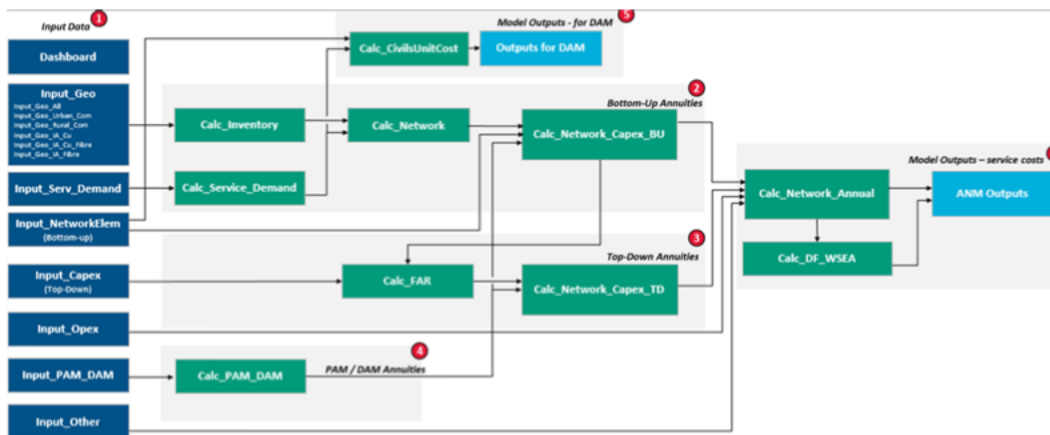
VI.2. OVERVIEW OF CAPEX MODULE

VI.2.1. Introduction

130. The Capex Module is one of the key elements of the ANM architecture because, in addition to calculating the value of capital expenditures, it collates the inputs from the other modules of the ANM to derive unit costs, on the basis of which ComReg's proposed prices are based. The links to the other models are based on active Excel links between the different Excel workbooks that make up the ANM. To run the model, all Excel workbooks need to be opened at the same time. The scenario parameters in the other ANM modules are linked to the parameters in the Capex Module. Hence, when all modules are open, it is sufficient to update the parameters in the Capex Module and update the calculations to obtain the relevant results.

131. Figure 3 below shows the linkages between the various ANM modules.

Figure 3: Overview of ANM and interlinkages between different models



Source: Cartesian

VI.2.2. Key model inputs

132. The Capex Module is based on the following inputs:

- **Geospatial Inputs:** the network asset counts are derived in the Geospatial Module, and four different inputs sheets, one for each of the footprints, are defined.
- **Service Demand Inputs:** this provides the volumes by year and footprint for copper and fibre services. It also provides the coverage rollout matrix, for FTTH rollout and copper switch-off, and the FTTH Connection volumes, split by standard and non-standard,⁶³ and by year and footprint.
- **Network Element Inputs:** for each network element, unit capex cost, cost trend, and asset life are provided. There are about 180 network elements defined for the bottom-up approach. There are two data sources for the unit capex costs and asset lives: for FTTH network elements (fibre cables, splitters, distribution points, terminations, OLT port), data was provided by Eircom as part of a 13D request in October-November 2019;⁶⁴ for Copper and FTTC network elements, unit costs are sourced from the Revised CAM and cost trends are (provisionally) set to 0%, as a placeholder.
- **Capex Inputs:** used as the basis for top-down calculations, these include actual access network-related capex invested by Eircom over time, based on a combination of

⁶³ ComReg distinguishes between standard and non-standard connections, on the basis that some connections may require the installation of additional poles or an underground road-crossing when a premise is on the opposite side of the road from the main access cable routes.

⁶⁴ This is a request made pursuant to ComReg’s information gathering powers in line with Section 13D(1) of the Act (see Consultation, 5.11).

Eircom’s Fixed Asset Register (“FAR”) for the financial year ending 30 June 2018 and from the financial year ending 30 June 2019. They also provide a share of annuity by exchange, indicating how costs are likely to be broken down across the geographical areas, and the average connection cost.

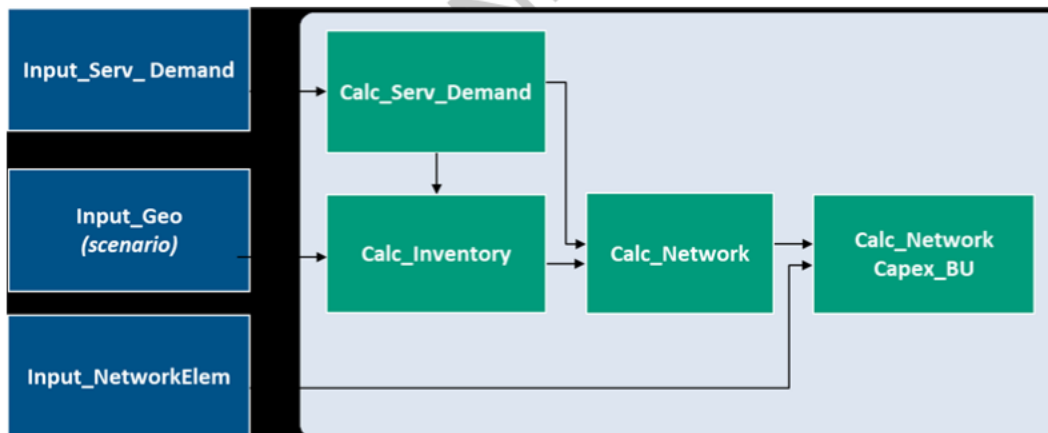
- **Input_PAM_DAM:** provides the value of annuities and quantities of poles and ducts calculated in the PAM and DAM modules.
- **Input_Other:** other inputs include the classification of exchanges in the Larger Exchange Area (“LEA”) and FACO areas, and allocation matrices indicating which network elements each product consumes.

VI.2.3. Model calculations

133. Based on the inputs listed above, the model develops two separate approaches. A bottom-up approach, defined for LLU, SLU, NGA Link, POTS based FTTC, dark fibre and FTTH connections, and a top-down approach, used for PSTN-WLR and CG SABB.

Bottom-up approach

Figure 4: Overview of bottom-up approach calculation



Source: Cartesian

134. Figure 4 above explains the flow of the calculation. In principle this is reasonably straightforward, and it is performed according to the following steps:

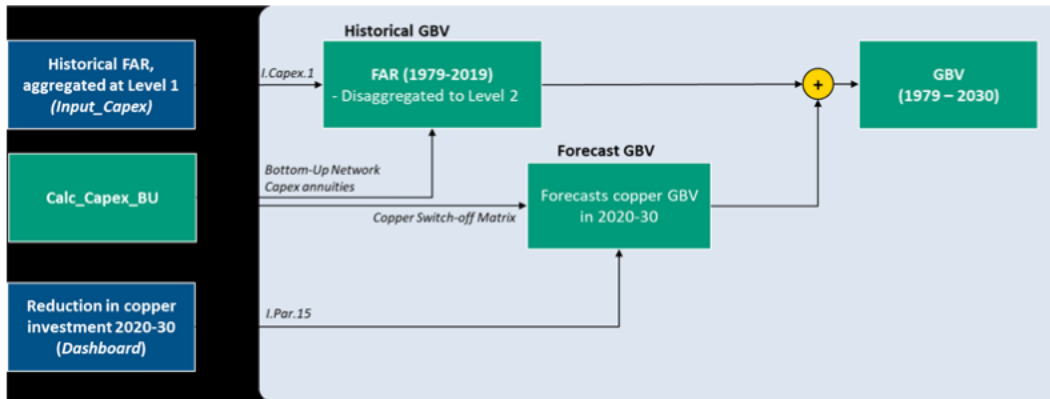
- the inventory, i.e., the quantity of asset for each network element, is calculated by multiplying the inputs from the Geospatial Module, by the numbers in the availability matrix, which indicate whether copper and fibre services are provided;

- multiple adjustments are made to disaggregate some of the elements defined in the Geospatial Module. These adjustments are not well documented either in the Specification Document or in the Capex Module itself;
 - investment costs are calculated by multiplying the number of assets by the unit cost of each network element;
 - the annuity is calculated for each element based on the tilted annuity formula; and
 - the annuity for ducts and poles is calculated separately in the PAM and DAM modules and imported as an input into the Capex Module. This calculation does not follow a bottom-up approach, but it is based on historic investment. The same cost basis is used for the top-down and bottom-up calculations in the Capex Module, but different depreciation assumptions are used: tilted annuity for the bottom-up approach and HCA depreciation for the top-down approach.
135. The bottom-up calculations are complex, due to the dimensions used in the calculation (with more than 180 network elements, more than 1,000 exchanges and four different footprints), rather than the methodology used to calculate costs. There are also ad-hoc calculations (for specific elements) which are not documented and for which there is no straightforward justification. For example, the number of Copper_Aerial_FD and the Copper_Underground_FD network elements is not calculated like the other network elements on the basis of the numbers in the inventory from the Geospatial Module, but instead this inventory is used to reallocate the number of CGA copper lines across aerial and underground FDs.

Top-down approach

136. The top-down approach uses Eircom's actual asset register information to define the cost of each network element. There are two steps in the calculation: first the information from the FAR is used to define the GBV values for the historic and forecast periods, and second, annuities are calculated from these GBV values.
137. Figure 5 below shows the first step of the approach for the calculation.

Figure 5: Top-down approach to define the GBV for each Level 2 cost element



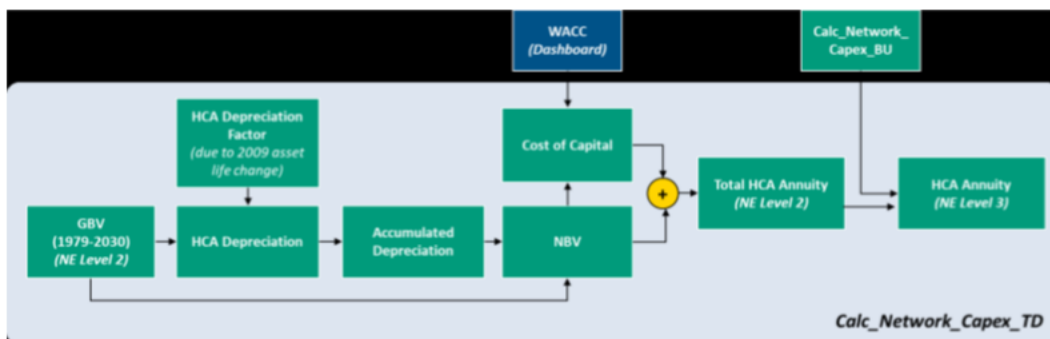
Source: Cartesian

138. The FAR information provides GBVs for the period 1979 to 2019 at an aggregate level, which includes four Level 1 network elements. GBV values are then broken down into eight Level 2 network elements based on the outputs of the bottom-up projections. For the forecast period (2020 to 2030), GBVs are projected based on two drivers:

- ComReg assumes that the capex levels from 2020 onwards will be substantially lower than what they were in 2019. In the existing model it assumes a reduction of 50%, although it has noted that it may update this value as Eircom reports costs actually incurred; and
- the level of capex further decreases with the reduction of premises served by copper as a result of copper switch-off. For example, in 2028 capex for some cost elements have dropped as much as 90% from the 2019 value.

139. Once the value of the investment is derived, the model calculates the level of annuities. Figure 6 shows the key steps of this calculation.

Figure 6: Calculation of top-down annuities



Source: Cartesian

140. The calculation is based on HCA depreciation, and is reasonably straightforward, with the main complexity represented by the change in asset lives during the 2009 financial year. The steps for the calculation are the following:

- depreciation annuities for the investment in each year are calculated for the selected year based on GBV and life of asset. Three separate calculations are performed: one for the years before 2009, one for year 2009 and one for years after 2009;
- the NBV for the year is calculated, to be used for the cost of capital calculation;
- the cost of capital is derived by multiplying the NBV by the WACC;
- the depreciation annuity is added to the cost of capital. The calculations this and the previous three steps are carried out at the Level 2 cost element; and
- the value of the annuity is apportioned to level 3 cost elements based on the costs calculated in the bottom-up model.

141. While this approach at a high level appears reasonable, we highlight our concerns in the following sections.

Calculation of service costs

142. Based on the Level 3 cost elements calculated above, the cost of the main services is derived as follows. First, the costs of Level 3 network elements are aggregated into a reduced number of functional network elements, with separate unit cost calculations undertaken for copper and fibre elements; second, unit costs for each element are calculated, by dividing the total cost of each element by the number of physical copper and fibre lines; third, capex for each service is calculated by multiplying the unit cost of each element using an allocation matrix which indicates which elements are used by each service. The calculations are performed at an exchange basis, so that average across exchanges can be calculated, e.g., to calculate the cost for the FACO area; and last, unit opex is then added to the capex to calculate total cost for each service.

ComReg's modelling approach

143. The Capex Module of the ANM is fundamentally a bottom-up model, which was retrofitted with additional functionality to allow the model to calculate costs based on top-down capex inputs. We will explain later the potential implications of this approach.

144. The bottom-up cost functionality calculates the cost for a hypothetical network which is built to serve all premises across four footprints, based on the current cost of assets and the

application of a tilted annuity based on the level of WACC defined in the model. The key exception is the capital cost of for duct and pole elements, which are calculated in the PAM and the DAM based on the value of historic investment, applying tilted annuities to calculate yearly costs.

145. There is an anomaly in the structure of the ANM bottom-up functionality, which makes the ComReg approach internally inconsistent and significantly different from that used in many bottom-up models. The estimates of asset numbers, which are calculated in the Geospatial Module and are an input into the capex calculation, do not vary with the number of premises calculated in the Service Demand Module, but are defined statically for each exchange. While the increase in premises is not expected to be significant, this means that the quantity of assets in later years will be understated. We note that quantity of assets in each exchange is set to zero in the year in which the exchange is assumed to switch copper off.
146. The calculation steps to derive the bottom-up estimates are relatively straight forward, but the outputs of the model heavily rely on inputs. Costs of all elements, other than those related to ducts and poles, are calculated by multiplying the quantity of assets derived in the Geospatial Module (for each exchange and footprint) by the unit cost of each element, which is also an input into the model. Tilted annuities are applied to calculate the annual cost of each element. However, multiple adjustments are made in relation to specific network elements which are not well documented and are therefore difficult to verify.
147. The calculations related to the top-down approach are also logically straightforward. HCA depreciation and NBV are calculated from the historic costs recorded in Eircom FAR, and annuities including depreciation and cost of capital are calculated. The major complexity in this calculation is represented by the change in asset lives during financial year 2009. We have found a potential error in this calculation, which may cause a small understatement of the top-down annuities. We cover this in Section VI.5 below.
148. The complexity of the top-down calculation is also amplified because, as we explain above, the model was primarily designed on the detailed cost elements defined for the bottom-up calculations. The top-down information from Eircom's accounts is available only for Level 1 network elements (which include four network elements), i.e., at a much more aggregated level than the costing estimates derived as part of the bottom-up calculation, which are available for Level 3 network elements (which include about 180 different cost elements). This means that the top-down cost available for Level 1 cost elements need to be broken down into Level 3 cost elements for the calculation of the unit costs by service. Top-down costs are broken down using the cost shares of the disaggregated elements as derived from the bottom-up calculations.

149. This has the potential to introduce distortions to service costs if services were using different proportions of the different elements. However, this does not seem to be the case for PSTN-WLR and SABB, the two products for which prices are based on top-down approach based on HCA costs. This is because both products use all cost elements at Level 3 in the same proportion, and therefore the methodology used to break down the original HCA costs has no impact on the results of the model.
150. The output of the model also heavily relies on other assumptions made by ComReg on capex projections for the years 2020 to 2030. We will comment on this assumption in section VI.3 below.
151. In summary, our review of the approach used by ComReg to derive service cost in the ANM concludes that:
- the calculations in the model are conceptually straightforward, although the dimensions defined for the model, including more than 180 network elements, more than 1,000 exchanges and four different footprints add to the complexity of the model;
 - bottom-up calculations are based on defining a theoretical network, the parameters of which are mainly defined as part of the Geospatial Module which forecasts the number of network elements required in the network;
 - the forecast of the number of network elements is static and is not linked to volume of premises. This is unusual for a bottom-up model;
 - there are multiple ad-hoc calculations which are not well documented and vastly reduce the transparency of the model and prevent a thorough review of all elements in the model;
 - the top-down results are heavily reliant on ComReg subjective assumptions on the future network developments and projections; and
 - the top-down calculation is overly complicated as the structure of the detailed cost elements is replicated for top-down calculations even if data is only available at an aggregate level. However, this is unlikely to have a significant impact on the outputs of the model.

VI.3. ASSUMPTIONS AFFECTING CAPEX ESTIMATES

152. We have identified two subjective parameters that ComReg has used and have a significant impact on the results of the model:

- the assumption that from 2020 the capital costs related to copper would reduce by 50% on the costs that were incurred in 2019; and
- the impact of copper switch-off on stranded assets.

153. We will review each of these assumptions in turn.

VI.3.1. Forecast of top-down copper capital costs

154. ComReg has assumed that in the period 2020 to 2030, the capex estimates used for its top-down calculation would amount to a level that is 50% of the capex that was recorded in 2019. ComReg considers that during this period, it is unlikely that copper investment is going to continue at the levels observed in 2019 based on *“the expectation that customers will migrate to the fibre network leading to Eircom’s eventual copper switch-off”*.⁶⁵
155. ComReg recognises that limited information is available to validate this assumption, but it considers that this 50% value is a reasonable placeholder to use and that potentially the assumption can be revisited in future years based on the *“Additional Financial Information provided by Eircom as part of its cost accounting obligations”*.⁶⁶
156. We believe that ComReg’s assumption is not backed by any evidence and is inappropriate and it will lead to an understatement of the cost of WLR and SABB. As ComReg recognises, Eircom will be required to incur copper related capex *“as a result of having a significant share of its customer base tied to its copper network and as a result of the service performance obligations under the Universal Service Obligation”*.⁶⁷ ComReg assumes that the prospect of switch-off will allow Eircom to reduce such expenditure by as much as 50% in 2020. However, this is unlikely to be true. In 2020, Eircom’s understanding and expectation of the evolution of the market and of the timing of switch off are unlikely to be significantly different from what they were in 2019, the year used by ComReg as base year for its calculation. Therefore, we would assume that if there was any reduction in the investment on the copper network this is likely to be minimal, particularly given that it is quite common to have delays in the switch-off processes for USO providers, as regulators are sensitive about the impact of the switch-off process on end-customers.
157. Moreover, ComReg is already factoring the switch-off process in terms of the value of the capex invested in the model. When an exchange area is switched off, the proportion of

⁶⁵ Consultation, 5.173.

⁶⁶ Consultation, 5.174.

⁶⁷ Consultation, 5.174.

capex allocated to this area is set to zero, with an overall reduction of capex. We therefore believe that no further adjustment is required.

- 158. In addition, any potential reduction in capex due to the pending switch-off process is likely to be more than compensated by the stranding of the assets which have been recently invested in the copper network.
- 159. The impact of this assumption on PSTN-WLR is shown in Table 1 below, where the unit cost of PSTN-WLR is presented under the 50% cost reduction assumed by ComReg and under a scenario in which capex continues at the same level as in 2019. A scenario where a 10% reduction in capex occurs instead of a 50% reduction is presented in Section IX.2.1.

Table 4: impact of ComReg assumption on the reduction of Capex on the price of PSTN-WLR (€/line/month)

	2020	2021	2022	2023	2024	2025	2026
50% cost reduction	16.13	15.79	15.45	15.10	14.93	14.87	14.94
No cost reduction	16.28	16.06	15.84	15.61	15.57	15.69	15.99

Source: BRG calculations

VI.3.2. Switch-off and stranded costs

- 160. One of the key assumptions which drives the cost in the Capex Module, both on a bottom-up and a top-down basis, is the assumption ComReg has made on the timing of switch-off and of the deployment of FTTH fibre networks. At an exchange level, the costs of the copper and fibre network are linked to the availability of that network in the exchange. This is an assumption defined in the Service Demand Module. ComReg assumes copper switch-off will start in 2025 and will be completed in 2025 for the Rural Commercial area and in 2028 for The Urban Commercial area, with the intervention switching off after 2030.
- 161. However, the Capex Module does not take into consideration the impact that the switch-off will have on the ability of Eircom to recover fully the investment it has made in the network. The lives of assets in the copper network vary between 15 years for copper overhead cables and distribution points, to 40 years for cabinets. The ANM indicates that a significant proportion of copper related capex will not be depreciated at the time of switch-off. ComReg estimates that the NBV of copper assets in 2028, the year in which ComReg assumes all premises other than some in the intervention area will have copper switched off, is \times [REDACTED] \times . This means that such assets are expected to be stranded if the lives of assets are not adjusted to reflect the impact of copper switch-off. We have commented on this issue in Section III above and concluded that if this issue is not adjusted this will lead to an under-recovery of the investment by Eircom.

VI.4. CALCULATION OF ANNUITIES AND WACC

162. As we discussed in Section VI.2 above, a different approach for the calculation of annuities is used when calculating bottom-up and top-down costs. Within each of these sub-modules, treatment changes between different types of assets. We will discuss each sub-module in turn.

VI.4.1. Annuities for the calculation of bottom-up costs

163. In its bottom-up functionality (and excluding the costs of duct and poles), the Capex Module considers the quantity of each asset that are required by a theoretically efficient operator to serve existing premises, calculating the capital cost required to build such network by multiplying asset quantities by the unit cost (calculated on a current basis), and applying a tilted annuity to the cost of each asset, based on asset lives, a price trend and the regulatory WACC. The efficiency of the operator is not only considered in the level of unit costs assumed for each asset, but also in the quantities needed to serve customers. Using an approach which is very uncommon for determining the costs of access investment, ComReg adopts a modified scorched node approach, in which it assumes that the network is optimised to ensure that premises are linked to the closest cabinet/exchange, regardless of the potential costs of establishing new connections. We have commented on the use of the scorched node approach in paragraph 42 above.

164. Consistently with this theoretical approach, ComReg simply calculates an annuity based on the value of capex (e.g., assuming it has taken place now) and does not make any assumption of how the network may have been built over time. It uses the new 5.61% WACC determined as part of the October 2020 WACC decision to define this annuity. We consider that the use of a single WACC is consistent with this approach. However, we do not think that this approach, based on a theoretically efficient operator, is appropriate to define Eircom's access prices.

165. ComReg uses a different approach for the calculation of the annuities for the ducts and poles assets. These are calculated using a tilted annuity methodology on the historic value of assets. As we have discussed in Section III.3 above, this approach does not capture the impact of the historic WACC on the NBV of the assets, and it leads to an underestimate of the annuity. To correct this mistake, in calculating the annuity, ComReg will need to consider the WACC at the time Eircom invested in the asset for the calculation. At a minimum, it will need to calculate the NBV of the relevant assets at the time of the WACC change and recalculate the annuity based on this value, to correct the mathematical error it made when updating the value of the annuity for the new WACC.

VI.4.2. Annuities for the calculation of top-down costs

166. The annuities in the top-down calculations are based on HCA assets and a straight-line depreciation, and are calculated in each year by adding the relevant depreciation charge on the relevant assets which are not fully depreciated in that year to the cost of capital, calculated by multiplying the NBV of the assets by the relevant WACC. The value of historic depreciation and the NBV do not depend on the value of WACC. However, the cost of capital components depends on the choice of WACC. When we consider historic assets, the relevant WACC to calculate the cost of capital should be the WACC which represents the market conditions at the time the investment was made, as we explain in Section III.3 above. We note that ComReg has used the new 5.61% WACC for all historic assets, which would lead to an understatement of the cost of capital.
167. As we discussed in Section III above, the annuities should also be adjusted to reflect the shortened life of assets which are stranded as a result of copper switch-off.

VI.5. ERRORS FOUND IN MODEL

VI.5.1. Calculation of annuity for top-down model

168. We have found two mathematical errors in the model.
169. First, when ComReg calculates the value of depreciation for assets which were acquired before 2009, it adjusts the value of depreciation for the year in which the change took place (2009) by dividing the remaining NBV of the asset by the average of the asset life before and after the asset life change. It should instead calculate an average of the annuities (i.e., it should average the annuity calculated as asset value divided by asset life, rather than averaging the denominators).
170. Second, the cost of capital calculated in Calc_Network_Capex_TD (rows 106 to 115) uses the average NBV for the year. It calculates the average NBV by averaging the current year and the next year. However, the NBV it uses for this average is the year-end NBVs, because it is calculated as the difference between the GBV and the full depreciation for the year). The average NBV in any given year should instead be calculated using the average of the NBV for that year and the NBV for the previous year.

VII. NGA Model

VII.1. INTRODUCTION

171. Our review of the NGA Model has covered the following elements:

- a verification that the update of the model is consistent with the approach described in the Consultation;
- an assessment of how the inputs flow into the outputs produced by the model;
- a consideration of how WACC is applied to the calculation of the different cost elements defined in the NGA Model and the impact of changing the approach to applying a lower WACC for the calculation of the FTTC costs;
- errors that we have found in the model.

172. Each of these elements is discussed in turn in sections VII.3 to VII.6 below. In Section VII.2 below we provide a brief overview of the NGA Model, focussed on the elements which are relevant for our review.

VII.2. APPROACH TO CALCULATION OF FTTC COSTS

173. The cost of the FTTC services is calculated by summing up the costs of the following individual elements. Separate costs are calculated for FTTC and eVDSL, which are then weighed based on the proportion of customers estimated for each service.

- SLU cost for FTTC and LLU costs for eVDSL
- LL w/o SLU
- Fault: this is only applied to eVDSL
- DSLAM / OLT
- Agg node
- Migration
- Design and management
- Indirect and common cost

- BB fault cost
- Inter-agg nodes link + exch to agg link VUA
- Carrier Admin & Billing (fixed)
- Wholesale Ethernet Interconnection Link (WEIL)
- Backhaul (calculated based on WBA prices)

174. The elements above use one of the following approaches to derive costs.

- SLU and LLU costs are determined directly based on the inputs from the ANM for the 2020 NGA Model, and from the Revised CAM for the 2018 NGA Model.
- For the components LL w/o SLU, DSLAM / OLT, Agg node, Design and management, Indirect and common cost and WEIL costs are calculated using a bottom-up approach and then the economic depreciation approach is used to derive the average unit cost across the 50-year modelling period. An inflation index is then applied to this unit cost to calculate the appropriate value for the relevant year. The underlying calculations of the costs are the same for the 2020 and the 2018 model, but the WACC used for the calculation of the economic depreciation is different.
- The cost of migration is calculated based on the migration GRC, based on a tilted annuity approach. This appears inconsistent with the rest of the model for which economic depreciation is used, and the inconsistency is unjustified unless it can be demonstrated that these costs, and the pattern of volumes, are independent from the migration of volumes.
- For Carrier Admin & Billing (fixed) underlying 2017 HCA costs are used to calculate a unit cost, which is then inflated using a price trend.
- For the components Fault, BB fault cost the cost is calculated by inflating a fixed amount by the relevant price index. The assumptions used for these elements are unchanged.
- The Inter-agg nodes link + exch to agg link VUA costs are calculated based on input costs from the NGN Core Model.
- The Backhaul cost is calculated based on WBA costs, also from the NGA Model. There are separate fixed and variable components. Both are calculated based on an average of national and regional handover. The variable component is multiplied by the bandwidth, as calculated in the NGN Core Model.

VII.3. UPDATES IN THE MODEL SINCE 2018

VII.3.1. Implications of model updates on FTTC and CG bitstream

175. In the Consultation, ComReg explains that changes in the ANM will result in a change in the LLU and SLU prices, which are a key component of the cost of FTTC, and therefore suggest that the existing FTTC charges need to be updated to reflect such changes. It also notes that, since it last determined FTTC prices (in 2018), it has determined a new level for the WACC that applies to fixed telecoms and suggests that FTTC price should also be updated to reflect the new WACC. ComReg notes that as it determined FTTC prices in 2018, it reserves the rights to require prices to be updated depending on the outcome of the decision resulting from the WACC consultation it had planned to undertake at that time (which informed the 2020 WACC Decision).
176. ComReg has also considered whether other parameters and inputs into the model needed to be updated as they may have evolved since 2018 and concluded that the general demand and costs assumptions used in the NGA Model and the NGN Core Model to determine the FTTC prices in 2018 continue to be consistent with the Hypothetical Efficient Operator (“HEO”) approach used, and that therefore no other changes are required in relation to these elements of the NGA Model. In the remainder of this section we will comment on the elements of the NGA Model that were updated as part of the Consultation.

VII.3.2. Review of model updates

177. We have reviewed each of the changes between the 2018 NGA Model and the (2020) NGA Model. These are summarised below:
- **Structure of the model:** the structure of the model is unchanged. Most work sheets in the model have remained unchanged, except for the values of the different inputs feeding into the calculation. There is a minor change in the ability to choose one of two WACC scenarios, and multiple tabs used for the calculation of the costs for LLU and SLU have now been removed and replaced by inputs.
 - **WACC rate:** as discussed above the model now allows for the possibility of testing the impact of two WACC rates. The regulatory WACC of 8.18%, which was effective until the 2020 WACC Decision, and the new 5.61% WACC determined for fixed telecoms in the 2020 WACC Decision. The prices proposed in the Consultation reflect the costs derived using the new 5.61% WACC.
 - **LLU and SLU prices:** ComReg has updated the prices for these key inputs into the price of FTTC. The model defines the source for the new prices to be the ANM. The

prices for the period 2020 to 2024 are consistent with the prices determined in the Consultation. However, the prices for the period 2016 to 2019 were also updated and are sourced to the ANM, but it is not clear how these have been calculated, as the ANM does not calculate costs for periods before 2019.

- **Inputs from NGN Core Model:** these include two key inputs. First, the "Inter-agg nodes link + exch to agg link VUA" and second the WBA floors for the calculation of the bitstream element of the FTTC offer.
- **Cost of fault included in new LLU price:** this input is derived from "open eir ARO Price List v7_4 unmarked § Amortised usage charge". It is not clear why this cost should be updated, but at the same time it is not clear that this has an impact on the prices, as the price which is used in the calculation is the price in the NGA consultation.
- **Other inputs:** all other inputs in the model, from the GRC and asset lives of the main asset categories, to the various dimensioning rules, have remained unchanged, consistently with ComReg's statements in the Consultation.

VII.3.3. Conclusion from review of change in model inputs

178. Our review indicated that the main updates in the NGA Model were limited to the inputs from the ANM (consisting of the change in SLU, LLU and NGA link prices), in the value of WACC, and in the inputs from the NGN Core Model (consisting of the WBA floor prices that inform the cost of Bitstream).
179. We have found that the LLU and SLU costs used in the model for the next price control period match the prices proposed in the Consultation. However, it is not clear how the prices defined for the 2016 to 2019 period were determined, as the ANM does not calculate any costs for periods before 2020. We do not think this will have a significant impact in the calculation.
180. We understand that ComReg has not shared with Eircom the NGN Core Model it has used to update the inputs it provides into the NGA Model. We have therefore not been able to check whether such inputs are correct, and we note that these inputs have reduced significantly (by about 23% for the fixed element of the WBA floor and 4-9% for the variable element), and that this has a significant impact on the FTTC prices. The changes made in the NGN Core Model should therefore be carefully reviewed and consulted on.
181. We have also noted that an additional parameter related to the cost of a fault included in the LLU was updated, to reflect a change "Open eir ARO Price List v7_4 unmarked § Amortised usage charge". This appears to have a limited impact on the overall FTTC cost.

VII.4. FLOW OF INPUTS INTO FTTC PRICE

VII.4.1. WACC

182. The model was updated to be able to calculate costs under two WACC assumptions: the previous regulatory WACC of 8.18%, and the 5.61% determined in the 2020 WACC Decision.
183. The impact of WACC affects all the cost elements other than the cost of faults in the LLU price and the broadband fault cost. There are four ways in which the WACC is reflected in the cost of each element.
184. First, for the costs of LLU, SLU, Inter-agg nodes link + exch to agg link VUA and backhaul, two separate sets or prices are defined as inputs of the model for the two WACC values. These inputs are calculated separately in the ANM and in the NGN Core Model. Second, the cost of migrations reflects WACC as it is based on the calculation of a tilted annuity based on the capex involved in a migration. Third, for carrier administration and billing costs, WACC is multiplied by the man capital employed from Eircom's 2017 HCA separated accounts and AFI 105 and 107 to determine the cost of capital, which is one component of the unit costs. We note that HCA depreciation is used for this cost category. And last, for all other elements, WACC is reflected in the calculation of economic depreciation.
185. The table below shows the impact of the reduction of WACC from 8.18% to 5.61% for the financial year starting on 1 July 2022 for each element of the calculation.

Table 5: sensitivity of cost of FTTC to values of WACC (FY 2022)

✂ [REDACTED] ✂

Source: BRG Analysis based on NGA Model

186. Table 5 above shows the impact of changing the WACC on each element of the FTTC cost stack. The impact of the change in WACC differs depending on the type of costs. It reflects a combination of factors, including the profile of costs and demand over time. For example, the cost of WEIL is based on a stable level of costs and decreasing demand, which mean that a decrease in WACC is associated with an increase in unit cost. For all other cost elements, the decrease in WACC results in a more intuitive reduction of unit costs.

VII.4.2. LLU, SLU and backhaul costs

187. As we have seen above, the costs of LLU, SLU and backhaul are reflected directly in the cost of FTTC. Table 5 shows the impact of a change in WACC in the calculation. We note that to the extent that the ANM assumptions or calculations are changed, and this results in a revised estimate of LLU and SLU cost, these will directly affect FTTC prices. As the

LLU/SLU cost represents more than 50% of FTTC overall costs, any material impact in these inputs will also lead to a material impact in the price of FTTC.

VII.4.3. Other inputs

188. We have not reviewed the other inputs of the model, but we note that these were unchanged from the inputs used for the 2018 Pricing Decision which determined FTTC prices.
189. One of the inputs of the model is the value of Common and indirect costs, the source of which are derived from the NGN Core Model (DSL tab) and the WBA Opex model. These inputs were not changed in the latest version of the model.
190. We also note that Eircom has challenged the asset life set for migration costs, stating that an appropriate asset life for this asset is 7 years, rather than the 20 years assumed in the NGA Model.⁶⁸ We note that ComReg's asset life assumptions for migration costs appear at odds with the assumption it uses in relation to FTTC/FTTH switchover when modelling the costs of an efficient entrant (wherein it does not appear to adjust for the fact that even if an efficient entrant were to attempt to simultaneously rollout FTTC and FTTH, it would do so in the recognition that the asset life and recovery period for FTTC costs would be shortened as a result of increasing FTTH take-up).
191. From the source used to determine these inputs, these costs appear to be related the DSL active equipment and the WBA services. However, we have no visibility on whether the calculation of these costs is consistent with the approach across the ComReg models.

VII.5. COMREG'S CALCULATION OF ANNUITIES AND UPDATE OF WACC

VII.5.1. ComReg's approach to calculate annuities

192. In the Consultation ComReg states that "*the NGA Cost Model uses an Economic Depreciation ('ED') approach to cost modelling, which considers demand and costs across a model time horizon of 50 years*".⁶⁹ This is broadly true, but we note that there are two exceptions in which tilted annuity (for the cost of migration, based on an the cost of installation based on an asset life of 20 years) and HCA depreciation (for the carrier administration and billing costs, based on Eircom's 2017 accounts) are used instead, as

⁶⁸ Eircom Response to Consultation, response to Question 15, subsection titled "Erroneously modelled a number of inconsistent deployment and cost-recovery outcomes".

⁶⁹ Consultation 6.78.

we have explained above. Neither ComReg nor its consultant TERA have documented the use of alternative methods or explained why this is the case.

193. The economic depreciation approach used for the calculation of FTTC costs is based on calculating a real unit cost by dividing the discounted costs over a 50-year time horizon by discounted volumes. This unit cost is equivalent to the price that would need to be charged to ensure a cashflow which has an NPV of zero. The time period considered for the analysis starts in 2013 and ends in 2062.
194. Once the unit cost is calculated, a price trend is applied to this unit cost to derive the nominal value for the relevant year.

VII.5.2. Impact of ComReg's approach to calculate annuities

195. When ComReg updated the NGA Model to reflect the lower value of WACC defined in the 2020 WACC decision, it replaced the WACC used as an input of the model and applied this to the entirety of the modelled time period. This is problematic as a significant proportion of the investment considered in the model was made in the period 2013 to 2020, during which a different and higher WACC applied. We discuss the conceptual and economic problems with such an approach in Section III.3 above. Here, however, we provide an overview of the issues and of how ComReg could address it.
196. Even if we were to accept that it would be appropriate to update the prices to reflect the updated WACC determined by ComReg in October 2020, ComReg has made a mathematical error in the update of the model, by failing to apply a higher WACC to the period before the WACC change in the calculation of the annuity.
197. This error has led to an understatement of the unit cost of the components for which economic depreciation and tilted annuities are used to determine unit costs. We will provide an example of this mistake and explain the approach required to resolve this issue in the next sub-section.
198. We also note that a similar understatement would have affected other inputs of the NGA Model, such as the values of the LLU and SLU costs and the core backhaul costs.

VII.5.3. Calculating annuities over a period over which two WACC rates apply

199. When calculating the level of depreciation for an investment based on tilted annuity or economic depreciation, a pre-determined payment schedule is defined at the time of the investment that allows for the full recovery of the investment made and a return on the capital employed throughout the life of the asset. This will generally take the form of a fixed annual/monthly payment in real term for tilted annuity or a fixed real payment for each unit

of output in the case of economic depreciation. Such payments will depend on the value and the timing of the investment, the lifetime of the assets and the WACC that is associated with the investment. This is similar to the approach used by mortgage lenders to spread repayments through the term of the mortgage, and calculate monthly repayments based on the principal borrowed, the term of the mortgage and the contracted interest rate.

200. If it is deemed that a change in WACC is appropriate, a new annuity (or unit cost of demand) will need to be calculated which takes into consideration the impact of the historic WACC on the ability that an operator had to recover its initial investment. This calculation needs to consider the value of the NBV of the investment at the time of the rate change, over the remaining life of the investment. If this is not done, the impact of a reduction of WACC would result in an under-recovery of the initial investment. We will show this through the numerical example below. A similar update is common for mortgages, when there is an interest rate change (e.g., for variable mortgages), and a new monthly payment is calculated based on the remaining principal, the new interest rate and the number of months to the end of the term.
201. Let us assume an investment of €100 made in year 0 with an asset of life of 10 years which needs to be recovered from operations in year 1 to 10, and a WACC rate of 8.18%, equivalent to the regulatory WACC for Eircom before the October 2020 WACC Decision. Assuming constant prices, we calculate a tilted annuity of €15.02. This is also consistent with the payment of economic depreciation assuming constant demand.
202. Table 6 below shows how full recovery of the investment is achieved through this annuity, as we can see that the value of the NBV at the end of the life of the asset, in year 10, is zero.

Table 6: Cost recovery using standard annuity method⁷⁰

Year	NBV	Annuity	Cost of Capital	Depreciation
Ref	a	b	c	d
Formula	=a _{t-1} -d		=a _{t-1} *WACC	=b-c
0	100.00			
1	93.16	15.02	8.18	6.84
2	85.75	15.02	7.62	7.40
3	77.74	15.02	7.01	8.01
4	69.08	15.02	6.36	8.66
5	59.70	15.02	5.65	9.37
6	49.56	15.02	4.88	10.14
7	38.59	15.02	4.05	10.97
8	26.73	15.02	3.16	11.87
9	13.89	15.02	2.19	12.84
10	0.00	15.02	1.14	13.89

Source: BRG calculations

203. We now assume that the WACC changes at the beginning of year 6, to the new 5.61% level corresponding to the Fixed Telecom WACC in the 2020 WACC Decision. If we adopt the approach that ComReg has taken in the NGA Model, we would simply update the calculation over the entire lifetime of the mortgage and obtain a reduced annuity of €13.34. This would allow full recovery only if we assume that the same WACC rate had applied throughout the entire time period. However, this is not the case, because a different WACC applied at that time. This is shown in Table 7 below. In this case the operator is unable to recover its investment due to the mathematical error made by ComReg. This is shown in the table below because the NBV at the end of year 10 is €3.84, which measures the size of the under-recovery.

⁷⁰ The tilted and standard annuities are the same where the assumed price trend is zero, i.e., asset prices can safely be assumed to be constant. The example in this section ignores the price trend effect, but the logic would apply equally to it.

Table 7: Under-recovery under the ComReg method

Year	NBV	Annuity	Cost of Capital	Depreciation
Ref	a	B	c	d
Formula	=a _{t-1} -d		=a _{t-1} *WACC	=b-c
0	100.00			
1	93.16	15.02	8.18	6.84
2	85.75	15.02	7.62	7.40
3	77.74	15.02	7.01	8.01
4	69.08	15.02	6.36	8.66
5	59.70	15.02	5.65	9.37
6	49.72	13.34	3.35	9.99
7	39.17	13.34	2.79	10.55
8	28.03	13.34	2.20	11.14
9	16.26	13.34	1.57	11.76
10	3.84	13.34	0.91	12.42

Source: BRG calculations

204. In order to resolve this issue, it is necessary to model the two periods before and after the change in WACC separately.
205. In the first period, the annuity should be calculated based on the higher WACC which applied to that period. This can be done by applying the higher WACC to the existing calculation for those initial years.
206. As the new WACC is applied, in October 2020, the annuity needs to be calculated based on a consideration of the value of the NBV of the assets at the time of the WACC change:
- As we see in Table 7 above, this can be calculated each year, by updating the previous year NBV by the difference between the annuity paid and the cost of capital.
 - The annuity can then be calculated by considering this NBV as the value of investment using the remaining asset life as the new asset life of the investment.
207. If we adopt this approach, we would obtain an annuity value of €14.02, roughly 5% higher than that which would have been obtained using ComReg's approach, which ensure that the NBV at the end of the 10 year period is appropriately null.

208. The complexity of the exercise increases as investments are made each year and when operating costs are considered in the calculation of the annuity but the approach to the calculation does not change.

VII.6. ERRORS IN THE MODEL

209. We have found a small error in the model when calculating the cost of the "Inter-agg nodes link + exch to agg link VUA", where in calculating the average across two years, they divide by 366 (in a non-leap year) rather than 365. This has an impact of about 0.3% in the calculation of this cost element.

210. We have found a similar error, with a similar impact, in the calculation of backhaul costs.

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VIII. Modelling Consistency

VIII.1. GENERAL

211. We have identified areas where some costs have been treated inconsistently to others between or within modules of the ANM, or where there is an inconsistency with past decisions. We have commented on a number of these in other sections of this document.
212. When discussing the duct and pole access models, we refer to those provided to Eircom as part of the CEI Consultation process (ComReg 20/81) as the Draft CEI DAM and Draft CEI PAM, while we refer to the duct access and pole access models of the ANM as the DAM Module and the PAM Module.

VIII.2. PAM MODULE AND DAM MODULE

213. The PAM Module and the DAM Module are used to calculate the costs associated with the CEI network of poles, ducts, trenches, chambers, etc. They use many top-down inputs – base costs are taken from the FAR and pole numbers were provided by Eircom (although access trench length and the number of access chambers were calculated in the Geospatial Module). A bottom-up element is added for pole replacements and duct renewal using unit costs and forecast replacement/renewal volumes. This basic methodology is the same under both the BU Tilted Annuity ANM setting and the TD HCA setting.
214. CEI capex is also calculated in the Capex Module under the BU Tilted Annuity setting. However, this is taken out, and replaced with the CEI cost calculated in the PAM and DAM Modules (after the element of cost that is expected to be recovered from NBI has been removed).

VIII.2.1. Different dimensions and costing methodology to the Capex Module

215. The Capex Module has fundamentally different approaches for Top-Down (TD) and Bottom-Up (BU) costing. Under the TD HCA setting, input costs are based on the FAR, while under the BU Tilted Annuity setting the cost is calculated using the number of network elements calculated in the Geospatial Module multiplied by their unit costs.
216. We understand that the Geospatial Module has calculated a full, interconnected hypothetical access network. The geospatial inputs into the Capex Module include the number of poles, ducts, trenches and other CEI elements needed as part of this hypothetical network, with some additional calculations performed within the Capex Module. However, these do not appear to match the dimensions of Eircom's actual CEI

network. For instance, in 2022, there are 2.4m poles in the Capex Module⁷¹ but only 1.5m in the PAM Module⁷².

217. The cost methodology under the BU Tilted Annuity setting between the Capex Module and the PAM and DAM Modules are also different. The Capex Module uses network element numbers from the Geospatial Module to calculate total network capex, and then derives an annuity based on this, while the PAM and DAM Modules calculate an annuity based on FAR costs and Eircom's actual number of CEI elements. ComReg has justified this difference in approach with reference to the fact that much of the duct and pole network is reusable for NGA services, whereas many other elements costed in the Capex Module are not.⁷³ However, using two significantly different costing approaches to both provide significant inputs into the same products means that the two sets of inputs may well be inconsistent with each other, particularly since these two approaches give very different results.
218. Total network pole capex in the Capex Module is €[REDACTED] in 2022.⁷⁴ Using the annuity factor of 6.78% for poles,⁷⁵ this implies a total poles annuity of €89.2m. In comparison the PAM Module produces a total annuity of €[REDACTED]⁷⁶, a figure which includes opex and common cost as well as capex. In the Urban Commercial Area used for the SLU and LLU calculation, the difference is even more distinct, with the BU approach in the Capex Module producing an annuity of €[REDACTED],⁷⁷ compared to €[REDACTED]⁷⁸ in the PAM Module.
219. Since the BU costs of the CEI network are taken out of the Capex Module and replaced with the costs calculated in the PAM and DAM Modules, this inconsistent approach to BU costing significantly reduces the costs feeding into the services calculated under the BU

⁷¹ Capex Module, Calc_Network, F227:F230. Model year set to 2022, depreciation method set to Bottom-Up Tilted Annuity, footprint set to All.

⁷² PAM Module, Calc_Per_Pole_Costs, G17.

⁷³ For example Consultation, 6.32.

⁷⁴ Capex Module, Calc_Network_Capex_BU, H102:H106.

⁷⁵ Capex Module, Input_NetworkElem, O63:O64.

⁷⁶ Sum of the total annuities for the Urban Commercial Area, Rural Commercial Area and IA in the PAM Module under the BU-tilt approach. See PAM Module, Calc_Per_Pole_Costs, J107, J123, and J139. See also PAM Module, Output_Capex, F57 for this figure with the contribution from NBI removed.

⁷⁷ Sum of Capex Module, Calc_Network_Capex_BU, H102:H106 multiplied by 6.78% under the BU-tilt approach and for the Urban Commercial footprint.

⁷⁸ PAM Module, Calc_Per_Pole_Costs, J107 under the BU Tilted Annuity approach.

approach. Consistently using the BU approach would add more than €[REDACTED] to the Urban Commercial Area costs that feed into the LLU and SLU services in 2022.⁷⁹

VIII.2.2. Differences to the Draft CEI DAM and Draft CEI PAM provided to Eircom for the CEI Consultation

220. We note that there are several differences in the inputs between the ANM DAM and ANM PAM models provided as part of this consultation and the Draft CEI DAM and Draft CEI PAM provided to Eircom as part of the CEI Consultation.
221. In the Service Demand Inputs, the profiles of copper switch-off and FTTH availability are different, particularly for the Urban Commercial Area.⁸⁰ NBI's customer share in the Intervention Area is also different.⁸¹ This may indicate a different randomisation process taking place before sharing the two sets of models, or it may indicate a change in the Service Demand Module modelling.
222. The differences in Service Demand Inputs drive differences throughout the rest of the modelling, especially with regard to renewal and replacement costs and cable lengths.
223. The input opex differs between the ANM DAM and PAM Modules and the Draft CEI DAM and Draft CEI PAM.⁸² Furthermore, the opex in the ANM DAM and ANM PAM Modules fluctuates significantly when using the BU Tilted Annuity depreciation method rather than the TD HCA depreciation method. In the Draft CEI DAM and Draft CEI PAM opex remained constant between these two methods at the Top-Down opex level.
224. The approach of only using Top-Down opex in the Draft CEI DAM and the Draft CEI PAM was consistent with the use of primarily Top-Down costing for the asset base. If the asset base costing for the PAM and DAM Modules are maintained at primarily Top-Down levels

⁷⁹ For reference, the total Commercial Area annuity currently in the model is €[REDACTED] (see Capex Module, Calc_Network_Annual, H196:H380), so this amounts to an increase of 20%.

⁸⁰ For instance, in the Urban Commercial Area in the Draft CEI DAM, FTTH becomes available in exchange ABE in 2021 and copper switches off in 2026. For the same footprint and exchange in the ANM DAM module, FTTH becomes available in 2023 and copper switches off in 2028. See ANM DAM Module, Input_Service_Demand, G19 and G161 and Draft CEI DAM, Input_Service_Demand, G17 and G159. In the Intervention Area, the five-year rule between FTTH enablement and copper switch-off did not seem to apply in the Draft CEI DAM and Draft CEI PAM. In some exchanges, copper switched off in the same year that FTTH became available, and in others it switched off more than 5 years later. See for example, exchange ABP in Input_Service_Demand, row 104 and 241 of the two sets of models.

⁸¹ In the Draft CEI DAM and Draft CEI PAM, NBI's customer share began at 4% in 2020 and rose to 37% by 2030. In the current ANM DAM and ANM PAM modules, NBI's customer share begins at 2% in 2020 and rises to 33% by 2030.

⁸² Sheet Input_Opex of the Draft CEI DAM, Draft CEI PAM, ANM DAM Module and ANM PAM Module.

even when running the ANM for BU Tilted Annuity, the opex costing for these modules should likewise be maintained at Top-Down levels. We run a scenario testing the effect of this in Section IX.2.1

225. It should be ensured that prices calculated for the two Consultations are based on consistent sets of inputs.

226. Two additional parameter changes have also been made to the PAM and DAM Modules in order to allow outputs into the Capex Module:

- A costs/prices option to estimate the amount that has been recovered from NBI and therefore does not need to be recovered from the other services.
- An NBI transit share, which is applied to the Rural Commercial Area to calculate what share of CEI assets in this area are being shared by NBI.

227. We note that these will be important parameters to ensure full cost recovery. We would expect that NBI will also transit to some degree through the Urban Commercial Area, but we believe that this share should be estimated using inputs from NBI and Eir.

VIII.3. SERVICE DEMAND MODULE

228. The outputs of the Non-Confidential Service Demand Module are not consistent with Service Demand Outputs Module and the subsequent inputs into the rest of the ANM. It is therefore not possible to test the effects of scenarios in this model.

229. As outlined in Section IV.3, there are also inconsistencies in the internal logic of the Service Demand Module. For example, in the Non-Confidential Service Demand Module:

- The roll-out of FTTH appears to result in a large increase in demand for copper ADSL services; and
- A 5% uptake of FTTH in the first year of roll-out only results in a 2.4% customer share for NBI in the Intervention Area.

VIII.4. FTTC BITSTREAM PRICING

230. FTTC-based Bitstream is a product that is only regulated in the Regional WCA Market,⁸³ but its pricing does not reflect the costs of the exchanges in that market.

⁸³ Consultation, 3.8.

231. The LLU and SLU prices that are input from the ANM into the FTTC based Bitstream price are calculated using all the exchanges in the Urban Commercial area, rather than just the Regional WCA exchanges.⁸⁴
232. The same NGA Model costs are used for the FTTC based VUA calculation and the FTTC based Bitstream calculation,⁸⁵ despite the price of FTTC-based VUA being regulated in the WLA Market and the price of FTTC-based Bitstream only being regulated in the Regional WCA Market.
233. We do not have access to the NGN Core Model which provides some of the inputs into the FTTC-based Bitstream price in the NGA Model (e.g., the backhaul/WBA floor cost and the inter-aggregation node links), so we cannot comment on whether these costs have been defined with regard to providing services to the Regional WCA exchanges. However, we note that the same cost of inter-aggregation node links is used for FTTC-based VUA and FTTC-based Bitstream.
234. This approach to FTTC-based Bitstream costing is not consistent with the market in which it is regulated. The Regional WCA exchanges in which the bitstream prices are regulated would be expected to have higher cost, on average, than those exchanges that are considered competitive and in which the bitstream prices are not regulated. The FTTC-based Bitstream price should therefore only be calculated based on the costs in those exchanges that have been included in the Regional WCA Market.
235. The NGA Model is not sufficiently granular to make this change, and the NGN Core Model is unavailable. We have therefore only tested the effect of correcting the LLU and SLU inputs that come from the ANM, basing them on only the WCA exchanges in the Urban Commercial area, rather than on all exchanges in this area. The effects of this are shown in the scenarios in Section IX.2.4. On average, it results in €1 being added to the FTTC-based Bitstream price over the course of the period, and the total effect is likely to be greater once the other inputs into the FTTC-based Bitstream price are also updated.
236. ComReg should update its modelling of FTTC-based Bitstream to take into account that cost-orientation is only imposed in the Regional WCA Market. In doing so, they should also take into account any changes to the exchanges included in the Regional WCA Market, as is currently being consulted on in the Mid-Term Assessment of the Regional WCA Market.

⁸⁴ Model User Guide, Slide 15. See also Consultation, Table 1 and NGA Model, Revised Inputs, E20:H21.

⁸⁵ NGA Model, Results, O18 and O23. O18 is used for the FTTC-based VUA price in Table 3 of the Consultation and O23 is used for the FTTC-based Bitstream price. Both use the same cost stack, with the only difference for the FTTC-based Bitstream price being that it includes additional WEIL and backhaul costs.

VIII.5. DATES

237. We have noted inconsistency and a lack of transparency in the way that dates are used between the ANM, the NGA Model and the inputs from the NGN Core Model. This could lead to potential errors.

VIII.5.1. ANM

238. Years in the ANM are formatted as calendar years (2020, 2021, etc.), however, the Specification Document states that these years are financial years, with the quoted year in the model referring to the end point of the financial year. For example, it states that “ANM model year 2020 refers to the financial year from 1 July 2019 to 30 June 2020.”⁸⁶

239. Given the randomisation of some of the input data into the ANM, it is not possible for us to confirm whether this dating has been used consistently in the inputs for the Consultation. However, we note that the PSTN WLR prices quoted in Table 5 of the Consultation for each financial year are more closely aligned to the ANM prices in the model year that *begins* the financial year. This can be seen by comparing the prices in Table 8 below, which shows the consultation prices for PSTN WLR and the prices produced by the ANM. The price in model year 2020 more closely matches the consultation price quoted for 1 July 2020 to 30 June 2021 than does the price in model year 2021, and the same for the subsequent three years. Nevertheless, we have consistently used the model years as defined in the Specification Document, with model year 2021 equating to 1 July 2020 to 30 June 2021.

Table 8: Consultation prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR (Consultation)	16.07	15.77	15.41	15.35	14.80	15.67
ANM model year	2020	2021	2022	2023	2024	2025
PSTN WLR (ANM)	16.13	15.79	15.45	15.10	14.93	14.87
ANM model year	2021	2022	2023	2024	2025	2026
PSTN WLR (ANM)	15.79	15.45	15.10	14.93	14.87	14.94

Source: Consultation, Table 5; ANM

⁸⁶ Specification Document, Footnote 5.

VIII.5.2. NGA Model and NGN inputs

240. In contrast to the ANM, the NGA Model contains model years in two formats – it includes both model years recorded in calendar year format (2020, 2021, etc.) and model years recorded in mid-year format (Jul-20, Jul-21, etc.). In general, the model years recorded in mid-year format appear to correlate to the same year as those recorded in calendar year format (i.e., the results quoted for Jul-20 use the modelling for 2020). The Consultation uses the results for these years as the prices for the financial year *beginning* in that calendar year, that is NGA Model results for Jul-20 are used in the Consultation for the financial year 1 July 2020 to 30 June 2021.⁸⁷ This is in contrast to the model years in the ANM which align to the *end* of the financial year.
241. The inputs from the NGN Core Model in the NGA Model are also quoted in calendar year format (2020, 2021, etc.). However, these years are treated differently in the rest of the NGA Model. For instance, when calculating the results for Jul-20, the NGA Model takes a weighted average of inputs from 2020 and 2021 from the NGN Core Model.⁸⁸ This implies that the years input from the NGN Core Model do not align to those used in the NGA Model.
242. The three models therefore appear to have three different and inconsistent dating conventions. This should be reviewed. It will be very important to ensure that the prices used throughout the three models are equivalent with each other and that the prices quoted in the Consultation are for the correct year.

VIII.6. SUPPLEMENTAL CHARGE FOR POTS-BASED FTTC

243. The Model User Guide states that the correct model settings for calculating the POTS-based FTTC prices are Bottom-up Tilted Annuity, in the Urban Commercial footprint and taking the “Total” Dashboard output.⁸⁹
244. However, ComReg has stated in the Consultation that “As ComReg is now proposing that voice services will only be regulated in the Regional Low-Level FACO Market, ComReg is of the preliminary view that the cost of the active equipment and the incremental copper loop cost that are included the POTS-based FTTC supplemental charge should be derived using the same approach as used for PSTN WLR”.⁹⁰ This would imply that the POTS-

⁸⁷ NGA Model, Results, O23 and O25, compared with Consultation, Table 3.

⁸⁸ For example, see the calculations in NGA Model, Results, E53 and E56 and other similar calculations for VUA and backhaul links.

⁸⁹ Model User Guide, slide 15.

⁹⁰ Consultation, 4.57.

based FTTC prices should be calculated using the same model settings as PSTN WLR, namely Top-down HCA in All footprints and taking the “FACO” Dashboard output.⁹¹

245. In Table 9 below, we have compared the outputs of these two potential approaches (i.e., the Model User Guide approach and the approach stated in the Consultation) with the prices that ComReg has quoted in the Consultation. As can be seen, when run with model settings equivalent to PSTN WLR, the ANM produces results much closer to those in the Consultation.⁹² We have therefore used these settings in our calculations for the POTS-based FTTC charge, rather than the settings given in the Model User Guide.

Table 9: POTS-based FTTC prices

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
Consultation	2.48	2.39	2.31	2.24	2.18	2.09
ANM – Set equivalent to PSTN WLR	2.39	2.31	2.24	2.18	2.17	2.11
ANM – Set as per Model User Guide	3.57	3.64	3.71	3.84	3.93	4.10

Source: Consultation, Table 5; ANM; BRG calculations

VIII.7. OTHER INCONSISTENCIES

VIII.7.1. Common cost allocation to SLU in the Opex and Capex Modules

246. As noted already in Section V above, there is an inconsistency in the treatment of common cost for SLU in the Capex Module compared to the Opex Module and the Consultation. In the Opex Module, the per-line common cost for copper is calculated based on the number of copper services in the Commercial Areas, including FTTC.⁹³ However, in the Capex Module, only 85% of this per-line cost is included in the SLU service price. Through the SLU service price, this reduced common cost then feeds into the FTTC price calculated in the NGA Model.⁹⁴ These FTTC services therefore do not recover the full common cost that was allocated to them in the Opex Module.

⁹¹ For the PSTN WLR model settings, see Model User Guide, slide 15.

⁹² We further observe that, as described in Section VIII.5.1 for PSTN WLR, the ANM prices for FTTC-based POTS would match the Consultation prices better if shifted one year over.

⁹³ This is in line with the Consultation, which states that common costs are recovered “on a per-service basis”. Consultation, 5.140.

⁹⁴ NGA Model, Results, E39.

VIII.7.2. Annuity calculation in the NGA and the ANM

247. As noted in Section VII above, the NGA Model calculates annuities on the basis of economic depreciation rather than tilted annuity.⁹⁵ This results in an inconsistency in the FTTC prices, since part of the LLU and SLU building blocks are calculated using a tilted annuity while the building blocks within the NGA Model are calculated using economic depreciation.

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⁹⁵ This is discussed in Consultation, 6.78.

IX. Sensitivity of outputs of ANM and NGA Model to key assumptions

IX.1. INTRODUCTION

248. In this section, we demonstrate the impact on calculated (i.e., model-based) prices if we address a number of the issues with ComReg's assumptions with respect to opex, capex, common cost allocation, and the NGA Model.

249. Section IX.2.1 begins with our adjustments to the ANM. In order, the scenarios in this section are:

- Allocate full common cost per line to SLU rather than just 85% of the common cost per line as ComReg assumes. The rationale for modifying this assumption is discussed in Section V.4.
- Adjust the common cost mark-up from 18.9% to 23.4%. The basis for this is discussed in Section V.4.
- Adjustment to opex trends including (a) removing the downward adjustment to the BU R&M opex from the Revised CAM, (b) keeping Direct R&M Line opex constant over time, and (c) allowing for a more gradual decline in provisioning opex ((b) and (c) are run as a single scenario). The bases for these changes are discussed in Sections V.2.
- Adjust the assumed capex decline of 50% after 2019 to 10%. The basis for this is discussed in Section VI.3.1.
- Reduce the lifetime of MSAN ports from 7 years to 5 years.⁹⁶
- Adjust pole and duct opex to "top-down" values as per the Draft CEI PAM and Draft CEI DAM. The basis for this is discussed in Section VIII.2.2.
- A final Combined Scenario that reflects the cumulative effect of all the above changes. Note that because of some interactions between different changes, this cumulative effect does exactly match the sum of the individual effects.

250. Section IX.2.2 demonstrates the effect on the FTTC costs and prices of updating the LLU and SLU costs in the NGA Model based on the ANM Combined Scenario.

⁹⁶ Eircom Response to Consultation, response to Q.7.

251. In Section IX.2.3 we provide additional ANM scenarios relating to (a) the allocation of all common cost to copper rather than fibre (discussed in Section V.4); (b) reducing asset lifetimes for copper assets to 15 years to capture a scenario in which the regulator committed to avoiding stranded copper costs because of copper switch-off (discussed in Section VI.3.2). These provide demonstrative effects, but have not been included in the main ANM Combined Scenario.
252. Finally, in Section IX.2.4 we show the impact on FTTC prices of (a) calculating FTTC Bitstream using LLU and SLU costs from the Regional WCA exchanges (discussed in Section VIII.4), and (b) reducing the FTTC migration cost asset life to 7 years. In Table 46 and Table 47 at the end of this section we show the full effect on FTTC prices of these changes as well as the changes from the ANM Combined Scenario.
253. We note that our ability to interrogate the sensitivity of the model to all the assumptions that are potentially challengeable is limited by the functionality and level of detail of the models provided to us.

IX.2. RESULT OF SENSITIVITY ANALYSIS

IX.2.1. ANM

Original ANM values

254. The original values produced by the ANM differ from those in the consultation. We reproduce both sets here for reference but note that all our scenarios estimate differences to the original ANM values, since we cannot reproduce those in the Consultation. We have calculated the original ANM values by using all ANM Modules as we received them and adjusting the Capex Module dashboard settings to those provided on slide 15 of the Model User Guide, with the exception of POTS-based FTTC for which we have used the same settings as for PSTN WLR, as described in Section VIII.6.⁹⁷ We note that there are significant divergences between the prices produced by the ANM and those provided in the Consultation.
255. Throughout this section we quote the prices for PSTN WLR, LLU, and SLU. We also quote the supplemental charge for POTS-based FTTC in the original Consultation and ANM tables and in the final ANM Combined Scenario tables. We note however, that the prices

⁹⁷ For PSTN WLR this involved setting the valuation and depreciation method to Top-Down HCA and the geographic footprint to All, and using the FACO price in column O. For the other reported services the valuation and depreciation method were set to Bottom-Up Tilted Annuity, the geographic footprint was set to Urban Commercial, and the Total price in column Q was used.

of other products in the model change as well as a result of the adjustments made in our scenarios and that these changes should also be taken into consideration by ComReg.

Table 10: Consultation prices for the next price control period (€/line/month)

	1 Jul 20-30 Jun 21	1 Jul 21-30 Jun 22	1 Jul 22-30 Jun 23	1 Jul 23-30 Jun 24	1 Jul 24-30 Jun 25	1 Jul 25-30 Jun 26
PSTN WLR POTS-based	16.07	15.77	15.41	15.35	14.80	15.67
FTTC	2.48	2.39	2.31	2.24	2.18	2.09
LLU*	12.72	12.72	12.79	13.44	n.a.	n.a.
SLU	10.43	10.39	10.39	10.82	n.a.	n.a.

*Excludes monthly fault repair and monthly connection/provisioning
Source: Consultation, Table 1, Table 5

Table 11: ANM prices for the next price control period (€/line/month)

	1 Jul 20-30 Jun 21	1 Jul 21-30 Jun 22	1 Jul 22-30 Jun 23	1 Jul 23-30 Jun 24	1 Jul 24-30 Jun 25	1 Jul 25-30 Jun 26
PSTN WLR POTS-based	15.79	15.45	15.10	14.93	14.87	14.94
FTTC	2.39	2.31	2.24	2.18	2.17	2.11
LLU*	12.93	12.93	12.98	13.50	14.27	14.96
SLU	10.11	10.07	10.06	10.41	10.97	11.45

*Excludes monthly fault repair and monthly connection/provisioning
Source: ANM, BRG Calculations

Common cost – SLU adjustment

256. We have corrected the common cost allocated to SLU so that it receives the full common cost per line, rather than only 85% of the common cost. See Section V.4 for the rationale for this change.

Table 12: Scenario prices for the next price control period (€/line/month)

	1 Jul 20-30 Jun 21	1 Jul 21-30 Jun 22	1 Jul 22-30 Jun 23	1 Jul 23-30 Jun 24	1 Jul 24-30 Jun 25	1 Jul 25-30 Jun 26
PSTN WLR	15.79	15.45	15.10	14.93	14.87	14.94
LLU*	12.93	12.93	12.98	13.50	14.27	14.96
SLU	10.49	10.45	10.43	10.78	11.33	11.81

*Excludes monthly fault repair and monthly connection/provisioning
Source: ANM, BRG Calculations

Table 13: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.00	0.00	0.00	0.00	0.00	0.00
LLU*	0.00	0.00	0.00	0.00	0.00	0.00
SLU	0.39	0.38	0.37	0.37	0.36	0.36

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Common cost – mark-up adjustment from 18.9% to 23.4%

257. We have adjusted the common cost mark-up applied to dark fibre and to the CEI assets from 18.9% to 23.4%.⁹⁸ See Section V.4 for the rationale for this change.

Table 14: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	15.87	15.53	15.18	15.00	14.93	15.00
LLU*	12.98	12.98	13.02	13.55	14.31	15.00
SLU	10.16	10.12	10.11	10.46	11.02	11.49

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 15: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.08	0.08	0.07	0.07	0.07	0.06
LLU*	0.05	0.05	0.05	0.05	0.04	0.04
SLU	0.05	0.05	0.05	0.05	0.04	0.04

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Direct opex – removed downward adjustment to BU R&M opex based on lower number of lines in ANM

258. We have removed the downward adjustment to BU R&M opex based on lower number of lines in ANM compared to the Revised CAM. See Section V.2 for the rationale for this change.

⁹⁸ See Appendix B for the calculation of this mark-up.

Table 16: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	15.79	15.45	15.10	14.93	14.87	14.94
LLU*	13.09	13.09	13.14	13.66	14.43	15.13
SLU	10.24	10.21	10.20	10.55	11.12	11.60

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 17: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.00	0.00	0.00	0.00	0.00	0.00
LLU*	0.16	0.16	0.16	0.16	0.17	0.17
SLU	0.14	0.14	0.14	0.14	0.14	0.15

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Direct opex – R&M line opex kept constant over time, more gradual decline in provisioning opex

259. We have adjusted the scaling of direct R&M – line opex, so that the total level of this opex stays constant across copper and fibre over time. To do this we have kept the upward scaling of fibre R&M – line opex that ComReg have used in their model and have scaled the copper R&M – line opex downwards by the same amount that the fibre opex increases by.
260. We have also reduced the speed of the decline in provisioning opex. This was based on placeholder data on PSTN connections in the model which forecast a very rapid decline, reaching 0 by 2025.⁹⁹ We have instead scaled provisioning opex down in line with the decline in total active copper lines.¹⁰⁰ See Section V.2 for the rationale for these changes.

⁹⁹ See Opex Module, Input_Service_Demand, row 359.

¹⁰⁰ See Opex Module, Input_Service_Demand, row 24.

Table 18: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	16.20	16.07	15.88	15.96	17.47	19.19
LLU*	13.30	13.49	13.67	14.35	16.16	17.92
SLU	10.42	10.54	10.65	11.14	12.58	13.97

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 19: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.42	0.62	0.78	1.03	2.61	4.25
LLU*	0.37	0.55	0.69	0.85	1.89	3.55
SLU	0.32	0.47	0.59	0.73	1.61	3.02

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Capex – investment in copper assets reduces by 10% rather than 50%

261. We have changed the reduction level for investment in copper assets from a 50% reduction to a 10% reduction. See Section VI.3.1 for the rationale for a lower level of capex reduction.

Table 20: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	16.00	15.76	15.51	15.44	15.53	15.78
LLU*	12.93	12.93	12.98	13.50	14.27	14.96
SLU	10.11	10.07	10.06	10.41	10.97	11.45

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 21: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.22	0.31	0.41	0.51	0.66	0.85
LLU*	0.00	0.00	0.00	0.00	0.00	0.00
SLU	0.00	0.00	0.00	0.00	0.00	0.00

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Capex – MSAN port lifetimes reduced from 7 to 5 years

262. We have reduced the lifetime of MSAN ports from 7 to 5 years.¹⁰¹

Table 22: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	15.94	15.60	15.25	15.08	15.02	15.09
LLU*	12.93	12.93	12.98	13.50	14.27	14.96
SLU	10.11	10.07	10.06	10.41	10.97	11.45

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 23: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.15	0.15	0.15	0.15	0.15	0.15
LLU*	0.00	0.00	0.00	0.00	0.00	0.00
SLU	0.00	0.00	0.00	0.00	0.00	0.00

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

PAM and DAM – opex set at TD levels

263. We have kept the level of opex in the PAM Module and the DAM Module at the Top-Down levels in both the TD-HCA and the BU-Tilted Annuity scenarios, in line with the capex inputs into these modules and in line with the models provided as part of the CEI Consultation. See Section VIII.2.2 for the rationale for this change.

Table 24: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	15.79	15.45	15.10	14.93	14.87	14.94
LLU*	13.06	13.06	13.09	13.61	14.34	15.02
SLU	10.24	10.19	10.17	10.52	11.05	11.51

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

¹⁰¹ This is a change requested by Eircom, and justified in Eircom Response to Consultation, response to Q.7.

Table 25: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.00	0.00	0.00	0.00	0.00	0.00
LLU*	0.13	0.12	0.11	0.10	0.07	0.06
SLU	0.13	0.12	0.11	0.10	0.07	0.06

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Combined Scenario

264. This scenario combines all the effects of the above scenarios. Table 28 shows what the Consultation prices would be if the total difference between this scenario's ANM prices and the original ANM prices (calculated in Table 27) were added to the Consultation prices.

Table 26: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	16.65	16.61	16.52	16.70	18.35	20.25
POTS-based						
FTTC	2.57	2.50	2.44	2.38	2.39	2.35
LLU*	13.65	13.83	14.00	14.69	16.55	18.37
SLU	11.14	11.25	11.34	11.84	13.33	14.77

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 27: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.86	1.16	1.42	1.76	3.48	5.31
POTS-based						
FTTC	0.18	0.18	0.19	0.20	0.22	0.23
LLU*	0.72	0.89	1.03	1.19	2.28	3.41
SLU	1.04	1.18	1.28	1.43	2.35	3.32

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 28: Equivalent consultation prices (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR POTS-based	16.93	16.93	16.83	17.11	18.28	20.98
FTTC	2.66	2.57	2.50	2.44	2.40	2.32
LLU*	13.44	13.61	13.82	14.63	n.a.	n.a.
SLU	11.47	11.57	11.67	12.25	n.a.	n.a.

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

IX.2.2. NGA Model

Original NGA Model values for FTTC

265. This table shows the original FTTC prices, as presented in the Consultation. We note that there are very minor differences to those presented in the NGA Model, which appear to be due to rounding. For instance, the Jul 20-Jun 21 per port price in the NGA Model is €22.456, which should round up to €22.46, but the price recorded in the consultation is €22.45. We do not consider these differences significant and have reported the scenario prices we calculate with reference to the prices recorded in the Consultation, rather than the variants in the NGA Model.

Table 29: Consultation prices for FTTC

	1 Jul 20-30 Jun 21	1 Jul 21-30 Jun 22	1 Jul 22-30 Jun 23	1 Jul 23-30 Jun 24
FTTC based VUA*	18.67	18.62	18.62	19.08
FTTC based Bitstream: National Handover				
Per Port*	22.45	22.47	22.59	23.22
Per Mbps	0.34	0.29	0.27	0.27
FTTC based Bitstream: Regional Handover				
Per Port*	20.50	20.47	20.51	21.05
Per Mbps	0.13	0.11	0.11	0.11
Assumed 90/10 mix for Regional / National Handover				
Per Port*	20.69	20.67	20.72	21.26
Per Mbps	0.15	0.13	0.13	0.13

*Includes monthly fault repair and monthly connection/provisioning

Source: Consultation, Table 3

NGA – Impact of updated LLU and SLU prices from ANM Combined Scenario

266. This table shows the impact of using the LLU and SLU prices calculated from the ANM Combined Scenario (see Table 28) in the NGA Model to calculate FTTC prices.

Table 30: Prices based on combined scenario in the ANM

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based VUA*	19.64	19.73	19.84	20.45
FTTC based Bitstream: National Handover				
Per Port*	23.42	23.58	23.81	24.59
Per Mbps	0.34	0.29	0.27	0.27
FTTC based Bitstream: Regional Handover				
Per Port*	21.46	21.58	21.73	22.42
Per Mbps	0.13	0.11	0.11	0.11
Assumed 90/10 mix for Regional / National Handover				
Per Port*	21.66	21.78	21.94	22.64
Per Mbps	0.15	0.13	0.13	0.13

*Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations

Table 31: Difference between scenario prices and original prices in the NGA Model

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based VUA*	0.97	1.11	1.22	1.37
FTTC based Bitstream: National Handover				
Per Port*	0.97	1.11	1.22	1.37
Per Mbps	0.00	0.00	0.00	0.00
FTTC based Bitstream: Regional Handover				
Per Port*	0.96	1.11	1.22	1.37
Per Mbps	0.00	0.00	0.00	0.00
Assumed 90/10 mix for Regional / National Handover				
Per Port*	0.97	1.11	1.22	1.38
Per Mbps	0.00	0.00	0.00	0.00

*Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations

IX.2.3. Further ANM Sensitivity Estimations

267. This section describes additional ANM scenarios that are not included as part of our main Combined Scenario for the ANM.

Additional ANM scenario – all common cost allocated to copper lines

268. This scenario illustrates what would occur if ComReg allowed all common cost recovery from copper rather than recovering equal amounts per line on copper and fibre lines, as discussed in Section V.4. To be conservative we have not included this as part of the Combined ANM Scenario or included its effects in the NGA scenarios. However, it demonstrates the significance and directional impact of shifting common cost recovery from fibre to copper.

Table 32: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	16.07	15.85	15.64	15.64	16.11	16.72
LLU*	13.44	13.69	14.04	14.98	17.26	20.00
SLU	10.54	10.71	10.96	11.67	13.52	15.73

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 33: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
PSTN WLR	0.28	0.40	0.54	0.71	1.24	1.78
LLU*	0.51	0.75	1.06	1.48	3.00	5.04
SLU	0.43	0.64	0.90	1.26	2.55	4.28

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Additional ANM scenario – Copper asset lifetimes capped at 15 years

269. This scenario illustrates the effect on the LLU and SLU prices of taking into account the fact that many asset lifetimes will be significantly reduced by copper switch-off, as discussed in Section VI.3.2. This effect is not included as part of our Combined Scenario or NGA scenarios because it only provided an illustrative impact and we have not undertaken the more complex exercise necessary to estimate how much each asset's life will be shortened by.

Table 34: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	13.70	13.73	13.79	14.37	15.20	15.96
SLU	10.52	10.49	10.49	10.86	11.46	11.97

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 35: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	0.77	0.79	0.81	0.87	0.94	1.00
SLU	0.41	0.42	0.43	0.45	0.49	0.52

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

IX.2.4. Further NGA Sensitivity Estimations

270. This section describes two additional changes made to the NGA Model:

- a. First, there is an adjustment to the LLU and SLU input costs used for FTTC Bitstream, so that these are calculated only for the Regional WCA exchanges as discussed in Section VIII.4. This requires a change to the ANM. The first three scenarios in this section describe the effect of this change on prices in the ANM and the NGA Model.
- b. Second, a change is made to the migration cost asset life in the NGA Model. The fourth scenario in this section describes the effect of this change.

271. The final scenario in this section describes the effect of all changes to the NGA Model.

Additional ANM scenario – LLU and SLU prices calculated for WCA market

272. This scenario demonstrates the effect of calculating the LLU and SLU prices for FTTC-based Bitstream using only the WCA exchanges in the Urban Commercial footprint. This is discussed in Section VIII.4. Since the ANM does not produce identical results to the Consultation, Table 37 shows the difference to the original ANM prices and Table 38 shows what the Consultation prices would be with this difference added to them. The prices in Table 38 are used as an input into Table 42 of the corresponding NGA scenario.

Table 36: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	13.48	13.63	13.58	14.18	15.19	15.56
SLU	11.11	11.20	11.13	11.59	12.30	12.52

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 37: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	0.55	0.69	0.60	0.68	0.92	0.60
SLU	1.00	1.13	1.07	1.17	1.33	1.08

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 38: Equivalent consultation prices (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	13.27	13.41	13.39	14.12	n.a.	n.a.
SLU	11.43	11.52	11.46	11.99	n.a.	n.a.

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Additional ANM scenario – LLU and SLU prices calculated for WCA market, including impact of other changes in the Combined scenario

273. This scenario demonstrates the effect of calculating the LLU and SLU prices for FTTC-based Bitstream using only the WCA exchanges in the Urban Commercial footprint, along with the other changes applied in the ANM Combined Scenario. This is discussed in Section VIII.4. Since the ANM does not produce identical results to the Consultation, Table 40 shows the difference to the original ANM prices and Table 38 shows what the Consultation prices would be with this difference added to them. Table 41 is used as the input into Table 46 of the NGA scenarios below.

Table 39: Scenario prices for the next price control period (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	14.17	14.49	14.58	15.34	17.45	18.95
SLU	12.11	12.35	12.39	12.99	14.64	15.82

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 40: Difference between scenario prices and original prices in the ANM

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	1.24	1.56	1.60	1.84	3.18	3.99
SLU	2.01	2.28	2.33	2.57	3.66	4.37

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Table 41: Equivalent consultation prices (€/line/month)

	1 Jul 20- 30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24	1 Jul 24- 30 Jun 25	1 Jul 25- 30 Jun 26
LLU*	13.96	14.28	14.39	15.28	n.a.	n.a.
SLU	12.44	12.67	12.72	13.39	n.a.	n.a.

*Excludes monthly fault repair and monthly connection/provisioning

Source: ANM, BRG Calculations

Additional NGA Scenario – LLU and SLU prices for FTTC Bitstream calculated based on WCA Market

274. This scenario shows the effect of calculating FTTC-based Bitstream prices using LLU and SLU cost in the regulated WCA market within the Urban Commercial footprint, as discussed in Section VIII.4 and calculated in Table 38. Note that this will not give the full effect of calculating FTTC-based Bitstream costs only in the non-competitive Regional WCA exchanges, since using a different geographic area will require changes to the other cost inputs in the NGA Model as well. The effect demonstrated in the following tables is therefore the lower bound of the total effect of shifting to calculating the regulated FTTC-based Bitstream price only in the non-competitive WCA exchanges.¹⁰²

Table 42: Adjusted FTTC prices

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based Bitstream: National Handover				
Per Port*	23.35	23.50	23.55	24.28
Per Mbps	0.34	0.29	0.27	0.27
FTTC based Bitstream: Regional Handover				
Per Port*	21.40	21.50	21.47	22.10
Per Mbps	0.13	0.11	0.11	0.11
Assumed 90/10 mix for Regional / National Handover				
Per Port*	21.59	21.70	21.68	22.32
Per Mbps	0.15	0.13	0.13	0.13

**Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations*

Table 43: Difference between scenario prices and original prices in the NGA Model

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based Bitstream: National Handover				
Per Port*	0.90	1.03	0.96	1.06
Per Mbps	0.00	0.00	0.00	0.00
FTTC based Bitstream: Regional Handover				
Per Port*	0.90	1.03	0.96	1.05
Per Mbps	0.00	0.00	0.00	0.00
Assumed 90/10 mix for Regional / National Handover				
Per Port*	0.90	1.03	0.96	1.06
Per Mbps	0.00	0.00	0.00	0.00

**Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations*

¹⁰² Furthermore, any changes to the WCA exchanges being regulated (as is currently being consulted on) will need to be reflected in this calculation.

Additional NGA Scenario – Reduce migration cost asset life to 7 years

275. This scenario shows the effect of reducing the asset life of the migration cost asset in the NGA Model from 20 years to 7 years, based on Eircom’s challenge discussed in Section VII.4.3.

Table 44: Adjusted FTTC prices

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based VUA*	19.24	19.20	19.21	19.69
FTTC based Bitstream: National Handover				
Per Port*	23.03	23.05	23.18	23.83
Per Mbps	0.34	0.29	0.27	0.27
FTTC based Bitstream: Regional Handover				
Per Port*	21.07	21.05	21.10	21.65
Per Mbps	0.13	0.11	0.11	0.11
Assumed 90/10 mix for Regional / National Handover				
Per Port*	21.27	21.25	21.31	21.87
Per Mbps	0.15	0.13	0.13	0.13

*Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations

Table 45: Difference between scenario prices and original prices in the NGA Model

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based VUA*	0.57	0.58	0.59	0.61
FTTC based Bitstream: National Handover				
Per Port*	0.58	0.58	0.59	0.61
Per Mbps	0.00	0.00	0.00	0.00
FTTC based Bitstream: Regional Handover				
Per Port*	0.57	0.58	0.59	0.60
Per Mbps	0.00	0.00	0.00	0.00
Assumed 90/10 mix for Regional / National Handover				
Per Port*	0.58	0.58	0.59	0.61
Per Mbps	0.00	0.00	0.00	0.00

*Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations

Additional NGA Scenario – Combined change in FTTC prices

276. This scenario shows the effect of implementing the full updated SLU and LLU prices and reducing the asset life of the migration cost asset in the NGA Model from 20 years to 7 years. For VUA, the updated SLU and LLU prices are those from the ANM Combined Scenario, which can be seen in Table 28. For FTTC-based Bitstream, the updated SLU

and LLU prices are those using the ANM Combined Scenario as well as calculating SLU and LLU for the Regional WCA exchanges only, which can be seen in Table 41.

Table 46: Adjusted FTTC prices

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based VUA*	20.21	20.31	20.43	21.06
FTTC based Bitstream: National Handover				
Per Port*	24.86	25.16	25.34	26.23
Per Mbps	0.34	0.29	0.27	0.27
FTTC based Bitstream: Regional Handover				
Per Port*	22.90	23.16	23.26	24.05
Per Mbps	0.13	0.11	0.11	0.11
Assumed 90/10 mix for Regional / National Handover				
Per Port*	23.10	23.36	23.47	24.27
Per Mbps	0.15	0.13	0.13	0.13

*Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations

Table 47: Difference between scenario prices and original prices in the NGA Model

	1 Jul 20-30 Jun 21	1 Jul 21- 30 Jun 22	1 Jul 22- 30 Jun 23	1 Jul 23- 30 Jun 24
FTTC based VUA*	1.54	1.69	1.81	1.98
FTTC based Bitstream: National Handover				
Per Port*	2.41	2.69	2.75	3.01
Per Mbps	0.00	0.00	0.00	0.00
FTTC based Bitstream: Regional Handover				
Per Port*	2.40	2.69	2.75	3.00
Per Mbps	0.00	0.00	0.00	0.00
Assumed 90/10 mix for Regional / National Handover				
Per Port*	2.41	2.69	2.75	3.01
Per Mbps	0.00	0.00	0.00	0.00

*Includes monthly fault repair and monthly connection/provisioning
Source: NGA Model, BRG calculations

Appendix A. OVERVIEW OF THE ANM COSTING METHODOLOGY

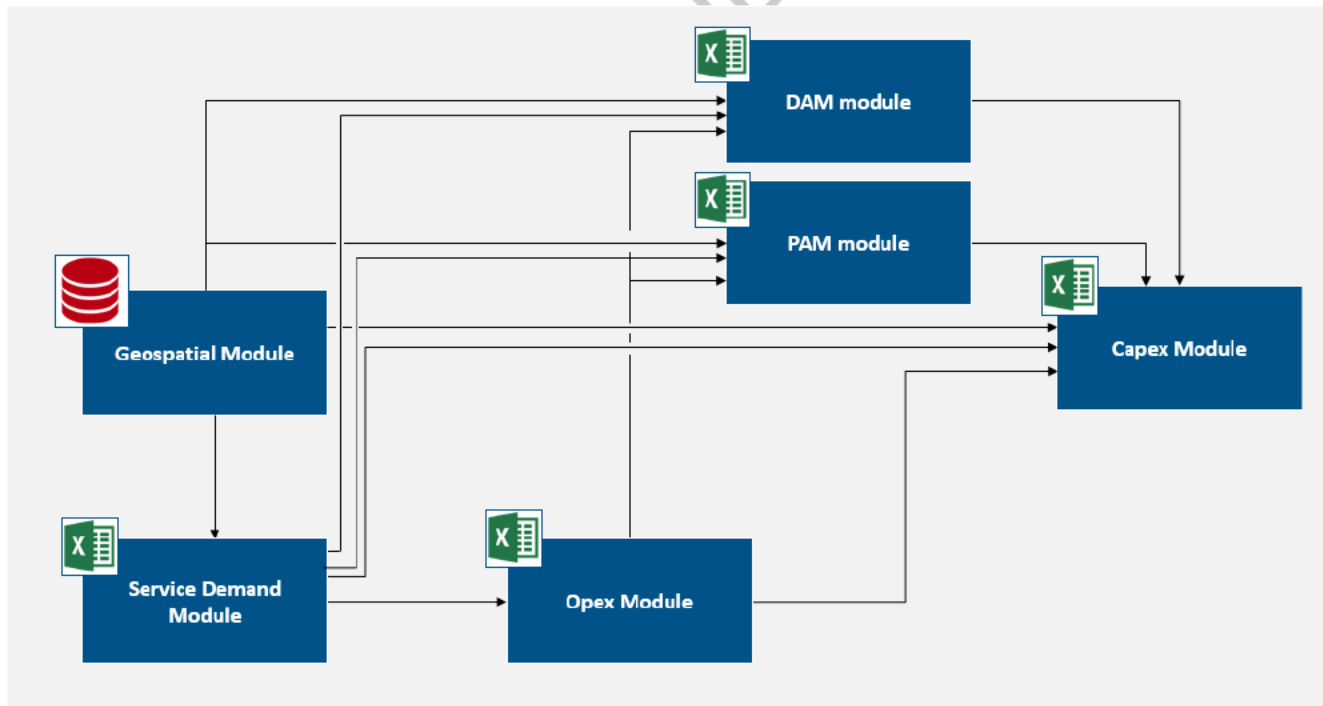
A.1. INTRODUCTION

277. In this section, first we provide an overview of the ANM and of the implicit and explicit assumptions which are defining the cost methodology which is applied to the ANM and second, we comment on key assumptions which are at the basis of the costing approach adopted by ComReg.

A.2. OVERVIEW OF THE ANM COSTING MODEL

278. The ANM is made of a number of separate modules which were built to undertake different elements of the derivation of costs. The calculation flow and the interaction between the different modules are shown in Figure 7 below.

Figure 7: Overview of ANM and interlinkages between different modules



Source: Cartesian

279. A brief overview of each module is provided below:

- **Geospatial Module:** the Geospatial Module performs the calculations to determine the characteristics of the copper and fibre network which is required to serve all premises across Eircom's network. The Geospatial Module is a static model which calculates the configuration of the network based on the geographical characteristics of Ireland's road network, and the output of the module do not vary with either the demand for copper and fibre services or the period modelled.
- **Service Demand Module:** this module is used to determine the number of customers for each product for each of the modelled periods. The outputs of the Service Demand Module feed into the PAM and DAM modules, the Opex module and the Capex Module.
- **DAM and PAM Modules:** these modules are calculating the cost of the duct and pole networks based on the value of the historic investment and the expected replacement costs. These modules were developed as part of the consultation on the pricing of CEI services to NBI and adapted to be used as part of the ANM.
- **Opex Module:** it calculates the level of operating costs on both a top-down and a bottom-up basis.
- **Capex Module:** it calculates the level of capex on a bottom-up basis, derives a parallel top-down calculation, and combines the inputs of the other modules to calculate a unit cost for the relevant copper-based services and for FTTC connections.

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Appendix B. Calculation of Opex mark-up percentage

280. As per Specification Document, para. 6.35 and 7.42, we have taken the total common cost divided by the total capex in the commercial footprints for each year between 2021 and 2025. For the total opex we have used the Output_Capex, F45 from the Opex Module under the BU approach and for the total capex figure we have used the sum of Calc_Network_Annual, H196:H380 from the Capex Module under the BU approach for the urban commercial and rural commercial footprints. We have then averaged the mark-up percentage over the 5 years, as specified.

Table 48: Calculation of Common Cost Mark-Up

✂ [REDACTED] ✂

Source: Opex Module and Capex Module.

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9: Frontier Economics' Report on behalf of Vodafone

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COMREG CONSULTATION ON THE PRICING OF WHOLESALE LOCAL AND CENTRAL ACCESS SERVICES

A report for Vodafone

January 2021



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EXECUTIVE SUMMARY

ComReg Decision D10/18 imposed cost orientation obligations on a number of services in the wholesale local access (WLA) and regional wholesale central access (WCA) markets, including current generation access (CGA) services such as Local and Sub Loop Unbundling and CG Bitstream services, and next generation access (NGA) services including Fibre-to-the-Cabinet based Virtual Unbundled Access (VUA) and Bitstream.

The current prices for CGA and FTTC-based services were set in ComReg's 2016 and 2018 Access Pricing Decisions respectively (Decisions D03/16 and D11/18). The FTTC prices were determined by ComReg's NGA and NGN Core models, but also drew on inputs from ComReg's Revised Copper Access Model (Revised CAM).

The European Commission ("EC") has made two recommendations that ComReg update the relevant prices: the first called on ComReg to revisit the access prices derived from the Revised CAM, and at a minimum update the results of the Revised CAM with more recent data, with the second recommending ComReg updates relevant pricing decisions to reflect the revised Weighted Average Cost of Capital (WACC) set in ComReg's Decision D10/20.

Given this, ComReg has now proposed revised prices for the regulated services in the WLA and Regional WCA markets, which are set out in its Consultation and Draft Decision D20/101. To do this ComReg has updated the cost models that it used to determine the prices in its 2016 and 2018 Pricing Decisions:

- ComReg has developed a new access model (the Access Network Model, "ANM"), which replaces the Revised CAM. The ANM takes account of more up-to-date data (including the revised WACC), but also extends the scope of the Revised CAM by modelling a network including Fibre-to-the-Home (FTTH) technology, in addition to CGA and FTTC technologies. ComReg has, however, aimed to retain the same methodological approach that underpinned the Revised CAM.
- Regarding the NGA and NGN Core models, ComReg has updated these reflect the WACC, as well as updated the inputs previously drawn from the Revised CAM with corresponding inputs from the ANM. Other than these changes, the parameters and calculations in these models were left unaltered.

ComReg's objective in D20/101 is to consult on the revised prices resulting from the development of the new ANM: it does not intend to consult on the form of the price control obligations imposed in D10/18 or the 2018 Pricing Decision, as the nature of these controls remains unchanged.

Vodafone has commissioned Frontier to conduct a review of ComReg's proposals for the prices of regulated services, with a focus on the prices for FTTC-based services (VUA and Bitstream). This review included a critical review of the new ANM and an assessment of the NGA and NGN Core models, with the latter focussing on whether the models are consistent with the ANM, and whether the

updates made to the models are sufficient for setting appropriate cost-based prices for FTTC services.

Our assessment and recommendations

Overall, we conclude that the intended methodological approach underpinning the ANM is broadly consistent with ComReg's key objectives for the study. In particular, the approach used to take account of the deployment of FTTH networks is broadly reasonable, and maintains consistency with the overall methodological approach in the Revised CAM. The model has also been populated with more up-to-date data for 2019.

There are however a number of issues with the implementation of the approach within the ANM, and with the updates applied to the NGA and NGN Core Models, which result in FTTC prices being materially overstated.

Regarding the ANM, there are a number of material errors in the model that need to be corrected by ComReg:

- First, a share of additional CEI costs resulting from Eircom's urban FTTH deployment is recovered from FTTC and CGA services, with a further "CEI uplift" then applied to the FTTC and CGA CEI costs in the years up to 2024. Recovering a share of these additional costs from FTTC and CGA services is unjustified, as these services neither cause nor benefit from the corresponding investment - the CEI network is already sufficient to support FTTC and CGA services, as demonstrated by the fact the network is already supporting these services today. The further uplift also results in a "double-counting" of costs - even if a proportion of the additional CEI costs should be recovered from CGA and FTTC services, these investments are already reflected in the CEI costs that are allocated to these services. These issues together result in an overestimation of FTTC costs. ComReg must therefore update the ANM to ensure that none of the additional CEI costs are allocated to FTTC and CGA services, and remove the CEI uplift applied to CGA and FTTC costs.
- Second, a disproportionate amount of E-side capital costs are allocated to FTTC services. ComReg aims to allocate these costs between CGA, FTTC and FTTH services based on the split of subscribers across these technologies. However in practice, FTTC costs include both the costs allocated directly to the FTTC technology (based on the share of FTTC subscribers), and a share of costs allocated to the CGA technology. ComReg must correct the allocation of these costs such that the costs allocated to FTTC services reflect the share of subscribers accounted for by these services.
- There is also an error in the calculation of demand in certain Eircom exchanges, which results in a sharp fall in penetration in semi-rural areas covered by Eircom's existing Rural FTTH roll-out. This results in an underestimation of total fixed demand in these exchanges, hence overestimating unit costs.

ComReg should also update the ANM to reflect 2020 data. Although 2019 data is likely to have been the latest available to ComReg when developing the ANM, data for 2020 is now likely to be available, including Eircom's 2020 Regulatory Financial Statements and corresponding AFI.

In addition to the errors in the ANM, the NGA and NGN Core models have not been appropriately updated, which results in a further overestimation of FTTC prices.

- In contrast to the ANM, the NGA and NGN Core models have not been fully updated to take account of the most up-to-date information, both in terms of demand for FTTC services and the level of efficient costs. Even though the NGA and NGN Core models model a hypothetical network, it is not reasonable to ignore new information that has come to light since the model was initially developed and populated which alters the best estimate of the efficient level of costs. The latest information used to inform demand forecasts in the ANM shows that FTTC demand is expected to be much larger than the NGA model estimates over the price control period, and the efficient level of FTTC costs much lower (due to “sweating” of assets until the FTTC network is switched off and lower opex reflecting Eircom’s recent cost reduction programme).
- In addition, failing to update the demand forecast results in the NGA and NGN Core models being inconsistent with the new ANM, where the demand forecasts have been updated. This inconsistency means that the results of the models are not consistent with the overall methodology described by ComReg, in that fixed and common costs are recovered disproportionately by FTTC services rather than proportionate to the number of customers served by each technology. In particular, this leads to an over-recovery of access network costs from FTTC services, as the costs allocated to FTTC in the ANM (based on the updated demand forecasts) are then spread across the smaller out-of-date forecast of FTTC demand in the NGA model.
- ComReg must therefore update all relevant inputs in the NGA and NGN Core models to reflect the latest available information on a consistent basis.

We expect that the changes outlined above would be relatively simple to implement in the models, so would expect ComReg to be able to revise its proposals without significantly delaying the implementation of new FTTC prices. This is because the changes to the ANM would require limited changes to the model calculations, and the data required to update the ANM, NGA and NGN Core models should be readily available.

1 INTRODUCTION

1.1 Context for ComReg's review of WLA and WCA pricing

In its 2018 review of the markets for wholesale local access (WLA) and wholesale central access (WCA) - ComReg Decision D10/18 - ComReg designated Eircom as having SMP in the WLA Market, as well as the market for wholesale central access at a fixed location for mass market products in regional areas (the Regional WCA Market).

As part of this Decision, cost-orientation obligations were imposed on a number of services. In the WLA market, this included Local Loop Unbundling (LLU), Sub Loop Unbundling (SLU), Line Share, Civil Engineering Infrastructure (CEI) and Dark Fibre access, as well as FTTC-based Virtual Unbundled Access (VUA). In the Regional WCA market, this included both Current Generation (CG) and FTTC-based Bitstream.

Cost-oriented prices for LLU, SLU, Line Share, CEI, Dark Fibre and CG Bitstream services were already set in ComReg's Decision D03/16 (the "2016 Pricing Decision"). This used a revised version of the Copper Access Model ("Revised CAM"), which modelled a hypothetical copper-based access network. Prices for FTTC-based VUA and Bitstream services were then specified in ComReg Decision D11/18 (the "2018 Pricing Decision"). These prices were determined by using two further models, the NGA cost model and NGN Core model, which modelled FTTC-specific costs, but also drew on inputs from the Revised CAM.

ComReg has now proposed revised prices for the services in the WLA and Regional WCA markets, which are set out in its Consultation and Draft Decision D20/101 (the "Consultation Document").

These proposals aim to reflect recommendations made by the European Commission ("EC") in response to two notifications made by ComReg.

- First, in July 2018, the EC provided a response to ComReg's notification of the draft measures contained in its 2018 Pricing Decision. This called on ComReg to revisit the access prices derived from the Revised CAM, and at a minimum update the results of the Revised CAM with more recent data.
- Second, the EC responded to ComReg's Decision D10/20 regarding Eircom's Weighted Average Cost of Capital ("the 2020 WACC Decision"), which determined a significantly reduced WACC for Eircom's regulated fixed-line services. With regard to the substantial decrease in the WACC, the EC recommended that ComReg update relevant pricing decisions to reflect this as soon as possible, to ensure that prices in the Irish wholesale markets reflect current market conditions.

In line with the recommendation that prices reflect current market conditions, the prices in the consultation take account of changes to the Irish telecommunications market in recent years. This includes the recent and expected future deployment of FTTH networks in Ireland, including the deployment of FTTH networks by Eircom and SIRO in rural and semi-urban parts of Ireland in recent years, and the

development of clearer FTTH deployment plans by Eircom in urban parts of Ireland. It also reflect FTTH deployment plans developed by National Broadband Ireland (“NBI”) in rural Ireland under the National Broadband Plan (“NBP”).

1.2 ComReg’s proposals in D20/101

To determine its revised proposals, ComReg has revised the cost models that it used to determine the cost-oriented prices in its 2016 and 2018 Pricing Decisions.

- ComReg, along with its external advisors Cartesian, has developed a new access model (the Access Network Model, “ANM”), which replaces the Revised CAM. The ANM takes account of more up-to-date data, but also extends the scope of the Revised CAM by modelling a network including FTTH technology, in addition to CGA and FTTC technologies. ComReg has, however, aimed to retain the same methodological approach that underpinned the Revised CAM, such as the attribution of fixed and common costs between technologies based on their respective usage of the network.
- ComReg has updated the suite of models to reflect the revised WACC in the 2020 WACC Decision. This has been updated in the ANM, the NGA cost model, and the NGN Core model.
- ComReg has also replaced the cost inputs in the NGA and NGN Core models previously drawn from the Revised CAM with corresponding inputs drawn from the ANM.

Other than the revised WACC and cost inputs from the ANM, the parameters and calculations in the NGA and NGN Core models were left unaltered.

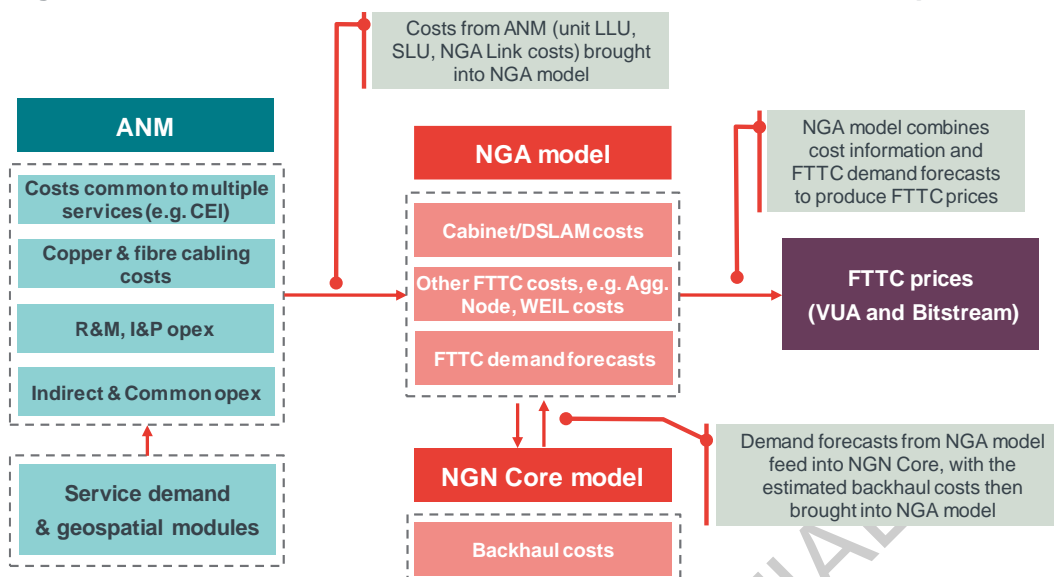
In the Consultation, ComReg indicates that its objective is to consult on the revised prices resulting from the development of the new ANM.¹ It stated that it did not intend to consult on the form of the price control obligations imposed on WLA/WCA services in D10/18 or the 2018 Pricing Decision, as the nature of these controls remains unchanged.

1.2.1 ComReg’s approach to setting FTTC prices

Prices for FTTC-based VUA and Bitstream services are calculated within ComReg’s NGA model. ComReg’s aim in setting these prices is to reflect the cost of a Hypothetical Efficient Operator (“HEO”) which provides FTTC services.

Whilst the prices are calculated in the NGA model, this draws on a number of key cost inputs from the ANM and the NGN Core model. The figure below illustrates the dependencies between the models, with a focus on the inputs to setting FTTC prices.

¹ See paragraph 2.4 of ComReg D20/101

Figure 1 Interaction between models used to set FTTC-based prices

Source: Frontier

In general, there are four main categories of costs which feed into the FTTC prices:

- **Shared access network costs.** These relate to assets which support different technologies (i.e. FTTH, FTTC, and CGA services). These include the cost of Civil Engineering Infrastructure (CEI) and copper cabling, as well as operating costs such as Repair & Maintenance and Installation & Provisioning.
- **Shared non-network costs.** This includes costs unrelated to the network itself, i.e. indirect & common operating costs such as overheads, including IT.
- **FTTC-specific network costs.** This includes DSLAMs, fibre cabling, and cabinets, as well as associated operating costs (such as DSLAM maintenance).
- **Backhaul costs.** These costs relate to the core network, i.e. beyond the local exchange, such as WEILs and transmission cabling.

The calculation of the shared access network costs takes place within the ANM, as do the calculations relating to the cost of fibre cabling. The calculation of shared access network costs draws on the dimensioning of a hypothetical access network (within the Geospatial module of the ANM), and the estimation of the number of subscribers by technology (within the Service Demand module of the ANM). The shared costs are allocated to technologies based on the estimated number of subscribers by technology and then allocated to services or network components. The relevant outputs of the ANM for the NGA model are a cost per “NGA Link” (i.e. the fibre link between the local exchange and the cabinet) and unit costs for the local loop and sub-loop (LLU and SLU respectively).

Shared non-network costs which relate to multiple technologies, such as IT, are calculated in the ANM and allocated to technologies according to subscriber numbers within that model. Other shared non-network costs such as Design, Management and Common costs relating to NGA services are calculated in the NGA model, and allocated to specific services according to the estimated number of subscribers on each service in that model.

The calculation of FTTC-specific network costs, as well as certain backhaul costs (i.e. WEILs), then take place directly within the NGA model. This is driven by forecasts of FTTC lines which are input directly in the model i.e. do not feed from the demand forecasts in the ANM.

Finally, the NGN Core model contains the calculation of the remaining backhaul costs. This draws on the FTTC demand forecasts within the NGA model, and then feeds the backhaul costs back into the NGN Core model.

Prices for the VUA and Bitstream FTTC services are then calculated in the NGA model based on these costs:

- For the VUA service, the NGA Link and other FTTC-specific access costs are converted into unit costs using the FTTC line forecasts in the NGA model, and combined with the SLU and LLU unit costs from the ANM.²
- The price of the Bitstream service is then calculated as the VUA price plus a backhaul unit cost, with the latter estimated by dividing the backhaul costs by the forecast number of FTTC subscribers using this backhaul.

1.3 Scope of this report

Vodafone has commissioned Frontier to conduct a review of ComReg's proposals for the prices of regulated services, with a focus on the prices for FTTC-based services (VUA and Bitstream).³

ComReg is not consulting on the form of the WLA/WCA price controls and the overarching approach to setting regulated prices. Our review therefore does not consider alternative approaches that could be considered for setting CGA and FTTC prices in light of FTTH deployment, nor does it set out an assessment of the suitability of the approach implemented by ComReg given current market conditions. We expect that such an assessment would be undertaken by ComReg when it re-consults on the pricing methodology for WLA/WCA services in future.

Our review therefore focusses on two main areas:

1. A critical review of the new ANM. This includes an assessment of whether ComReg has met its main objectives, that is to maintain consistency in the methodological approach between the ANM and the Revised CAM, but also to reflect the most up-to-date data and the key developments in the Irish telecommunications market. We also assess whether that methodological approach has been implemented correctly.
2. A review of the NGA and NGN Core models, including an assessment of whether they are consistent with the new ANM, and whether the updates made to the models are sufficient for setting appropriate cost-based prices for FTTC services.

² The LLU unit costs are used to calculate the unit cost for eVDSL services, and the SLU unit costs for the unit cost of cabinet-launched FTTC. The VUA price is an aggregate cabinet-launched FTTC and eVDSL price, based on these unit costs and the estimated FTTC/eVDSL subscriber mix.

³ We do not directly consider the impact on the unit costs of non-regulated services, such as FTTH rental charges.

Our conclusions on each part of the review are outlined in the remainder of this report.

Overall, we conclude that the intended methodological approach underpinning the ANM is broadly consistent with ComReg's key objectives for the study. In particular, the approach used to take account of the deployment of FTTH networks is broadly reasonable, and maintains consistency with the overall methodological approach in the Revised CAM. The model has also been populated with more up-to-date data for 2019.

We however find that there are a number of material issues with the implementation of the approach within the ANM, and that the NGA and NGN Core models have not been appropriately updated. Together, these issues result in FTTC prices being materially overstated and inconsistent with ComReg's stated objectives. These issues are explained in more detail in the subsequent sections of this report.

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2 REVIEW OF THE ANM

As noted above, ComReg's main objectives in the development of the ANM were to take account of changes in market developments since the previous update to the Revised CAM, and to populate the model with the most up-to-date data, in line with the EC recommendations described in Section 1.1.

In terms of market developments, ComReg has focussed on taking into account new information regarding the current and future deployment of FTTH networks. This includes the recent deployment of FTTH networks by Eircom and SIRO in rural and semi-urban parts of Ireland, as well as the future FTTH deployment plans for urban and rural areas that have now been fully developed by Eircom and NBI respectively.

For the ANM to reflect ComReg's objectives, we would therefore expect:

- That the ANM takes account of the impact of past and future FTTH deployment, but maintains the same overarching methodological approach as in the Revised CAM.
- That the model has been populated with the most up-to-date data and forecasts.

Overall, we conclude that the overarching approach that ComReg intended to implement in the ANM is consistent with ComReg's objectives. There are, however, some material errors in the way in which the methodological approach has been implemented, which results in FTTC prices being materially overstated.

Below we provide more details on our findings, including recommendations as to how the ANM should be modified in order to correct for the identified errors.

2.1 The overarching approach in the ANM is broadly consistent with ComReg's objectives

2.1.1 The intended approach to accounting for FTTH deployment is appropriate

For the ANM to take reasonable account of the FTTH deployment by Eircom and other operators, we would expect this to be reflected in three areas of the model:

1. An update of service demand forecasts to take account of expected migration to FTTH;
2. The allocation of network shared costs between technologies, including FTTH; and
3. Ensuring appropriate attribution of incremental costs between those that support copper-based⁴ services and those required for FTTH roll-out.

⁴ This includes both Eircom's copper and FTTC services, which are both supported by the copper network.

ComReg's approach to modelling the impact of FTTH deployment on service demand is reasonable

ComReg takes account of the impact of FTTH deployment on service demand in two ways within the ANM.

First, ComReg adjusts the forecast level of overall fixed penetration to account for FTTH deployment in areas which are not currently served by high-quality broadband services. As explained in more detail in Section 2.2.3 below, ComReg assumes that the level of fixed penetration in the areas covered by Eircom's "Rural 300k" FTTH roll-out and NBI's Rural FTTH deployment (the "Rural Commercial" and "Intervention Area" (IA) areas, respectively) will converge to the higher level of fixed penetration that is currently observed in the areas covered by Eircom's FTTC network ("Urban Commercial" areas).⁵

We consider it reasonable to expect that the level of penetration in Rural Commercial areas and the IA will increase, as it would be expected that demand for fixed-line services will be driven, at least in part, by the quality of the service that is available. It is therefore reasonable to expect that FTTH deployment will "unlock" latent demand in these areas, given the lack of high-quality broadband service availability in those areas. Similarly, the level of take-up in Urban Commercial areas would appear to be a reasonable proxy for the expected level of demand in these areas, given superfast broadband services have been available in these areas for a number of years (Eircom FTTC services, Virgin Media Cable services).⁶

Secondly, ComReg then forecasts migration to FTTH from other technologies, based on the availability of those technologies in a given area.

- In particular, the rate of migration to FTTH in an area reflects both the timing of future FTTH deployment and the expected switch-off of Eircom's copper network. Customers are only assumed to migrate to FTTH once the FTTH network is deployed in a given area, with the timing of that deployment reflecting the deployment plans of Eircom and NBI. The migration to FTTH also accelerates when Eircom is assumed to switch off its copper network.⁷
- The model also takes account of the availability of alternative technologies (i.e. Cable and FWA) when considering migration. For example, cable networks are assumed to retain their share of demand in urban areas despite the roll-out of FTTH by Eircom in those areas.

We consider this approach to be reasonable. Firstly, it is reasonable to expect that customers would migrate from copper-based services to FTTH services over time, given the higher quality of those services. Similarly, it is reasonable to expect that cable operators would be able to retain a share of their customer base in the next few years despite the presence of FTTH, given such networks are capable of being

⁵ We note that in practice, there are errors in the implementation of this approach. This is explained in detail in Section 2.2.3.

⁶ Although we consider the level of penetration in urban areas to be sufficiently similar as a proxy for the level of penetration in rural areas in the absence of further information, we acknowledge that there may also be socio-economic reasons for differences in take-up between urban and rural areas (for example, reflecting differences in income and demographics).

⁷ Demand for copper-based services falls to zero in an area in the year in which the copper network is assumed to be switched off, with this demand then migrating to the other technologies that are available in that area.

updated to provide service quality broadly comparable to FTTH, at least in the short term.⁸

Also, given the expectation that customers will migrate off Eircom's copper network in the long run, it is reasonable to expect that Eircom will switch off this network at some point following the deployment of FTTH, in order to minimise costs due to dual running of the network.⁹

The overarching approach to allocating network shared costs between technologies is consistent with the approach in previous price controls

Within the ANM, a share of the cost of Civil Engineering Infrastructure (CEI) assets is allocated to FTTH services, including Eircom's commercial FTTH network and NBI's NBP network. This is reasonable, as both Eircom and NBI intend to use this infrastructure to deploy their FTTH networks.

To apportion these costs appropriately, ComReg identifies the set of CEI costs that it considers should be shared across technologies, and aims to allocate these costs based on the number of subscribers forecast to be served by each technology (CGA, FTTC and FTTH) over time.

This approach to allocating CEI costs is consistent with the approach adopted in the Revised CAM, where these costs were allocated between FTTC and CGA technologies based on the forecast mix of demand across these technologies.¹⁰

ComReg's approach accounts for expected changes in Eircom's copper network investments in response to FTTH deployment

In the ANM ComReg has aimed to reflect the expected impact of Eircom's and NBI's FTTH deployment on Eircom's future investment in its copper network.

For example, ComReg has forecasted capex relating to copper-specific assets, such as copper cabling, aiming to reflect Eircom's plans to roll out its FTTH network and migrate customers to FTTH services.¹¹

We consider implementing adjustments to copper network investments to be reasonable, as we expect that Eircom's level of investment in copper-specific assets will decline over time in anticipation of FTTH deployment and copper network is decommissioning. Specifically, the knowledge that the copper network

⁸ For example, Virgin Media is now offering broadband services with 1Gbps download speeds in its network footprint, which are comparable to the speeds that can be offered over the GPON FTTH network that Eircom plan to deploy in urban areas (see <https://www.virginmedia.ie/about-us/press/2020/virgin-media-becomes-irelands-largest-gigabit-broadband-provider/>). In practice, it might be expected that some cable customers would migrate to FTTH over time, therefore resulting in a decline in the cable base. This is because the current cable base reflects the current speed advantage that cable networks have over Eircom's copper network, which will be lost when FTTH is deployed.

⁹ While Eircom will have a strong incentive to switch off the copper network in due course, its ability to switch off the network may be constrained by regulation and commercial factors.

¹⁰ We note however that the specific identification of CEI costs that should be shared across technologies in urban areas is incorrect, as a share of costs that are specific to the deployment of Eircom's FTTH network are allocated to FTTC and CGA services. A further uplift to CEI costs is then applied to CGA and FTTC services, which is again unjustified. This is explained in more detail in Section 2.2.1

¹¹ We note that ComReg's approach to copper switch-off appears reasonable. However, while this assumption does not have a material impact on the setting of prices over the coming years, the evidence supporting the current copper switch-off timing assumptions is unclear. As such, it will be important for ComReg to review these before making any future pricing decisions. For the avoidance of doubt, we consider this topic to be outside the scope of this consultation and so do not consider this to be an issue with ComReg's approach in setting WFA charges at this time.

will not be used in the long term means that the efficient approach to maintaining a appropriate quality of service for the remaining life of the network will be to reduce the level of investment. This could include substituting standard replacement cycles of copper cables, the replacement cost of which would not be fully recovered by copper switch off, with pro-active maintenance of existing copper cables.

2.1.2 The ANM is populated with more up-to-date data

In addition to the overarching methodological approach taking appropriate account of FTTH deployment, the ANM has also been populated with more up-to-date inputs than those in the revised CAM. The table below summarises the key inputs in the model, and the updated data that is used to inform these.

Figure 2 Updated data used in the ANM

Input	Updated data used
Service demand	<ul style="list-style-type: none"> ■ Eircom subscriber figures – copper, FTTC, FTTH services (2019). ■ Subscribers on other network operators in 2019 (Cable, FWA, FTTH competitors), and projected subscriber numbers in their business plans from this year. ■ Eircom and NBI FTTH deployment plans and take-up forecasts. ■ CSO household growth projections
CEI capex	<ul style="list-style-type: none"> ■ Historical CEI capex up to 2019 (Eircom Fixed Asset Register) ■ CEI future replacement rates based on replacement rates in Eircom’s 300k Rural FTTH roll-out.
Cabling capex Copper and FTTC fibre links	<ul style="list-style-type: none"> ■ Historical CEI capex up to 2019 (Eircom Fixed Asset Register) ■ Future capex based on expected Eircom copper network switch-off, which reflect latest FTTH deployment plans
Operating costs Installation and provisioning, R&M, Land & buildings, Power, indirect network costs, common costs (e.g. IT)	<ul style="list-style-type: none"> ■ Eircom data (2019), from Eircom’s 2019 AFI.
WACC	<ul style="list-style-type: none"> ■ Updated WACC in ComReg Decision D20/10

Source: Frontier based on D10/20 and the ANM

We note that using 2019 data to populate the model was a reasonable approach for the development of the Draft Decision, as this was likely to have been the latest information available to ComReg when developing the ANM.

However, data for 2020 is now likely to be available to ComReg. This includes Eircom demand and cost information for 2020, which underlies Eircom’s recently published 2020 Regulatory Financial Statements.¹² In its final decision ComReg should therefore update the ANM to reflect 2020 data, to ensure that the regulated prices reflect the latest information.

¹² These are available here: https://www.eir.ie/opencms/export/sites/default/_content/pdf/regulatoryinformation/hca_accounts_2020.pdf

2.2 There are errors in the implementation of ComReg's modelling approach in the ANM

Although ComReg's overarching methodological approach in the ANM is broadly consistent with its objectives, ComReg has made material errors in the implementation of this approach. These errors inflate the costs attributed to key inputs for the provision of FTTC services, and therefore act to overestimate the cost-based price for these services.

In particular:

- ComReg allocates CEI costs that are driven solely by Eircom's future urban FTTH deployment to existing CGA and FTTC technologies, which results in an overestimate of relevant CEI costs for these technologies;
- ComReg over-allocates shared E-side capital costs to FTTC services compared to an attribution based on subscriber demand; and
- There is an error in ComReg's estimation of demand which results in an underestimation of fixed service demand outside urban areas, and in turn an overestimation of unit costs for key inputs into the FTTC prices.

Each of these issues is discussed in turn below.

2.2.1 The model inappropriately attributes CEI costs which are incremental to FTTH roll out to CGA and FTTC technologies in Urban Commercial areas

ComReg's approach to calculating CEI costs in Urban Commercial areas

CEI costs are calculated in the PAM and DAM modules of the ANM, which then feed into the Capex module.

In the areas to be covered by Eircom's planned FTTH deployment, i.e. the Urban Commercial areas, the CEI costs to be recovered from CGA and FTTC technologies are calculated in four main steps:

1. **First, ComReg calculates CEI costs in two main categories: "BAU" costs, and additional costs resulting from Eircom's planned FTTH deployment.** The "BAU" CEI costs represent the costs that would be incurred in a "counterfactual" scenario in which the CEI continues to support Eircom's existing technologies i.e. only CGA and FTTC. The additional costs resulting from Eircom's planned FTTH deployment are then estimated by calculating the expected CEI costs under that deployment (where the CEI serves both the existing technologies and Eircom's FTTH network), and subtracting from this the estimated "BAU" costs. The additional costs include the cost of "accelerated" pole replacement during Eircom's FTTH deployment, and additional costs required to deploy Eircom's fibre in Eircom's ducts (including sub-duct renewal and duct blockage clearance required to install the fibre cabling).
2. **From this, ComReg then identifies "shared costs", which will be recovered across CGA, FTTC and FTTH technologies, and costs that will**

be recovered only from FTTH. Only the cost of renewing sub-duct is assumed to be recovered solely from FTTH. ComReg therefore defines shared costs as the “BAU” costs, plus some of the additional costs resulting from Eircom’s FTTH deployment: the cost of accelerated pole replacement, duct blockage clearance, and other underground CEI renewals.¹³ The table below summarises the categorisation of each element of CEI costs.

3. **The “shared costs” are then allocated between CGA, FTTC and FTTH technologies based on the estimated mix of subscribers across technologies.** This approach is consistent with the allocation of CEI costs between technologies in the Revised CAM, whereby these costs were allocated between CGA and FTTC technologies based on the estimated subscriber mix.
4. **Finally, ComReg applies a further “CEI uplift” to the CEI costs during Eircom’s FTTH deployment period.** In practice, this is an upward adjustment to the annualised CEI capital costs allocated to FTTC and CGA services in the years 2019-2023.¹⁴

Figure 3 Technologies from which CEI costs are recovered

Cost type	Specific category of costs	Technologies from which costs are recovered
“BAU” costs	BAU pole costs	CGA, FTTC, FTTH
	BAU duct costs	CGA, FTTC, FTTH
Additional costs resulting from Eircom’s urban FTTH deployment	Accelerated pole replacement	CGA, FTTC, FTTH
	Duct blockage clearance	CGA, FTTC, FTTH
	Other UG renewals	CGA, FTTC, FTTH
	Sub-duct renewal	FTTH

Source: Frontier based on assessment of ComReg’s PAM and DAM

ComReg’s approach means that CGA and FTTC technologies bear a share of the additional costs resulting from Eircom’s urban FTTH roll-out: a share of these costs are allocated to these technologies via their inclusion in “shared costs”, with a further CEI uplift then applied during Eircom’s FTTH roll-out period.

It is inappropriate to recover any share of additional costs from Eircom’s urban FTTH deployment from FTTC and CGA technologies

ComReg justifies its approach by stating that the estimate of CEI costs resulting from its approach reflects the cost of an “NGA ready network”. In particular, regarding the application of the CEI uplift, ComReg states that the uplift is “*applied to the annualised duct and pole costs to ensure that the costs are always modelled*”

¹³ These include the cost of replacing trenching and chambers on a proportion of routes, and the cost of footpath and carriageway re-installment. See sheet “Calc_Capex”, row 253-257 of the ANM Ducts module “ANM_Ducts_NonConfidential_ComReg 20101”

¹⁴ The ComReg consultation document indicates that this uplift is only applied to FTTC services, for example see paragraph 5.178 of ComReg 20/101 which states that “*for the purpose of calculating the FTTC inputs, ComReg has implemented a ‘CEI uplift’ to the CEI annuities derived in the PAM and DAM modules*”. However these uplifts actually affect both the FTTC and CGA CEI costs in the ANM. For example, when the CEI mark-up is not applied in the Capex module of the ANM (“Dashboard” sheet row 46), the annuities for CGA decrease (see rows 388-412 of sheet “calc_network_annual” of the same module).

to be consistent with the 100% NGA ready network that is modelled in the year beginning July 2023.”¹⁵

Further, ComReg justified the inclusion of accelerated pole replacement and duct clearance costs in “shared costs” by arguing that these costs are not incremental to FTTH services, as they benefit all network operators who need to access those ducts and poles to deploy new cables in the future:

“a cost is not necessarily incremental just because it is incurred at the time an access request is made. Activities such as duct clearance and pole replacement can continue to be of benefit to network operators who need to access those ducts and poles to deploy new cables in the future. Therefore, ComReg considers that it is reasonable to treat the CEI investments needed to make the network ‘NGA ready’ as a shared network cost to be recovered from all operators that can potentially benefit from that investment in the long run.”¹⁶

This rationale refers to an allocation of costs between **network operators**, including Eircom and other FTTH network operators, who may seek to use the CEI to deploy fibre networks. In this case the cost of making the CEI ‘FTTH ready’ can reasonably be recovered from all network operators seeking to deploy FTTH networks. However, in the context of regulated FTTC pricing the issue is the attribution of costs between technologies deployed by Eircom.

In this context the arguments presented by ComReg do not justify its approach, as there is no clear rationale for allocating any of the additional costs resulting from Eircom’s FTTH roll-out to FTTC and CGA technologies. This is because when defining the costs to be recovered from different technologies in the Urban Commercial area, ComReg should differentiate the costs which must be incurred to make the network “FTTH ready”, not “NGA ready”.

- Considering causality, in the areas covered by Eircom’s planned FTTH roll-out, the CEI network is already sufficient to support FTTC and CGA services, as demonstrated by the fact the network is already supporting these services today. In other words, it is already “CGA and FTTC ready”. As such, the only investment in CEI that is needed to continue to support these services is the “BAU” investment in CEI.
- Considering the distribution of benefits, FTTC customers (at a wholesale and retail level) derive no material benefits from the incremental expenditure above the BAU level, which is sufficient to support FTTC at an appropriate quality of service.

Given that FTTC (and CGA) customers neither cause nor benefit from additional costs resulting from Eircom’s FTTH roll-out, FTTC and CGA technologies should bear no share of these costs.

As shown in the table below, ComReg estimates that these additional costs are large in magnitude (annualised costs of approximately €15m over the price control period). The allocation of a share of these costs to FTTC and CGA services

¹⁵ Paragraph 6.44, ComReg D20/101

¹⁶ Paragraph 230, ComReg D20/18.

therefore results in a significant overestimation of FTTC and CGA costs, and FTTC and CGA cost-based prices.

Figure 4 Estimated annuities for additional FTTH-driven CEI costs included in “shared costs” (€000s)

€k	2021	2022	2023	2024	2021-2024
Accelerated pole replacement	315	503	627	784	2,229
Duct blockage clearance	299	451	616	754	2,120
Other renewals	1,479	2,232	3,052	3,735	10,499
Total	2,093	3,186	4,296	5,273	14,847

Source: Frontier based on ComReg’s ANM

The application of the additional “CEI uplift” to CGA and FTTC CEI costs is unjustified

In addition, the application of the further uplift to the CEI costs allocated to CGA or FTTC technologies is unjustified.

First, this approach is conceptually incorrect, for the same reasons as stated above regarding the attribution of incremental FTTH costs to FTTC and CGA services: the additional investment resulting from Eircom’s FTTH roll-out is not needed to support the provision of CGA or FTTC services, meaning that an uplift to the CEI costs allocated to CGA and FTTC services on the basis of these FTTH-related investments is unwarranted.

Secondly, even if a proportion of these additional investments should be recovered from CGA and FTTC services, these investments are already reflected in the CEI costs allocated to CGA and FTTC services via the allocation of “shared costs”. As such, applying an additional uplift to the CGA and FTTC costs results in a “double-counting” of the additional investments, which would in turn lead to an over-recovery of these costs by Eircom.

The application of these uplifts therefore results in a further overestimation of FTTC and CGA costs. For FTTC services, these uplifts unjustifiably increase the estimated CEI costs by approximately €450 thousand over 2021 to 2024.

The correct approach is to recover only “BAU” costs from FTTC and CGA technologies, and apply no CEI uplift

Following from the above, the appropriate approach to estimating the CEI costs which should be recovered from FTTC and CGA services would be as follows:

- Recover all incremental costs relating to Eircom’s FTTH deployment from FTTH technology only, whether Eircom’s own roll-out or rivals roll-out using Eircom’s CEI. This means that only the costs relating to “BAU” pole and duct replacement / remediation would be considered as “shared costs”.¹⁷

¹⁷ There would also be no uplift to the resulting FTTC or CGA CEI costs during Eircom’s FTTH deployment period.

- Allocate these shared costs between FTTH, FTTC, and CGA technologies based on the estimated mix of subscribers across these technologies.

This approach is broadly consistent with ComReg’s approach in the Intervention Area, where ComReg allocates CEI costs between Eircom’s CGA services and NBI’s planned FTTH network:

- All additional CEI costs driven by NBI’s FTTH deployment are assumed to be recovered solely from NBI.
- “BAU” costs are then allocated between CGA and NBI based on the expected mix of subscribers across the CGA and NBI networks.
- No uplift is applied to the costs assumed to be recovered from the CGA network.

2.2.2 The model inappropriately over-allocates E-side capital costs to FTTC services

ComReg states in its Consultation Document that E-side capital costs are allocated between FTTH, FTTC, and CGA services according to the split of subscribers across these technologies.¹⁸ The approach described is consistent with the allocation approach applied in the Revised CAM.

However, the way in which cost allocation has been implemented within the ANM means that in practice, a larger share of E-side CEI costs (in particular, relating to Chambers, Ducts, Trenches, and Manholes) are allocated to FTTC services.

This is driven by the process through which these E-side costs feed into FTTC prices in the ANM and NGA cost models, which is done in three sequential steps, as illustrated in the diagram below:

- The model first allocates these costs between FTTH, FTTC and CGA “technologies” within the ANM, based on the split of subscribers across these technologies.
- The costs associated with each technology are then allocated to network components/services:
 - The costs which were allocated to CGA in the previous step are allocated to all copper-based components/services, including the LLU and SLU components used to provide FTTC services, as well as the copper services used to deliver CGA services.
 - The costs which were allocated to the FTTC technology in the previous step are allocated to the “NGA Link” component i.e. the fibre link between the local exchange and the cabinet.
- The unit cost of FTTC services calculated in the NGA model then reflects both the cost of the NGA Link and the unit cost of SLU / LLU, as explained in Section 1.2.

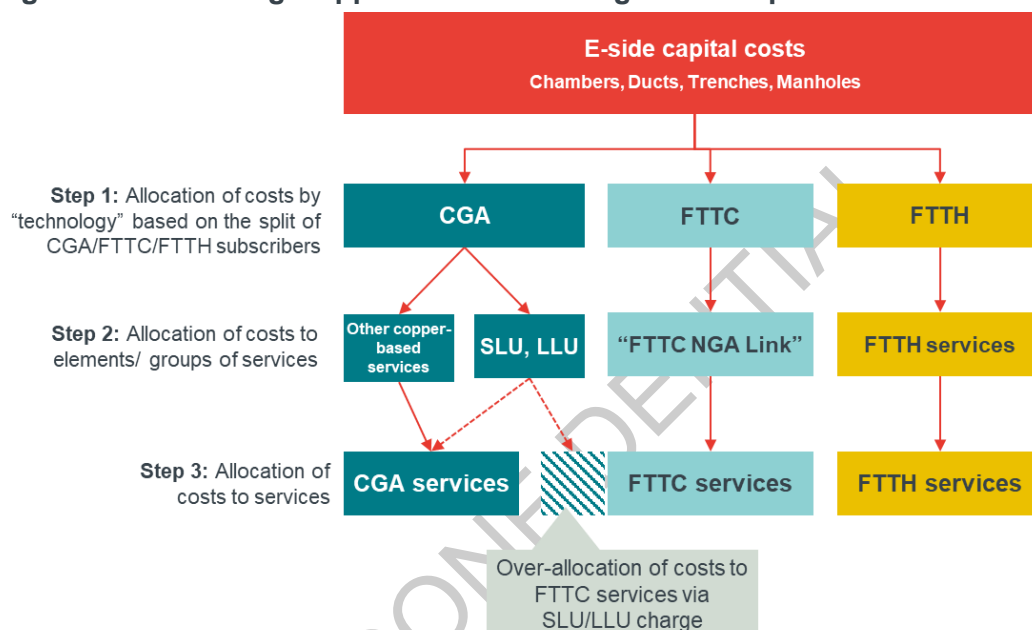
The result is that the total costs allocated to FTTC services include a disproportionate share of E-side CEI capital costs, since they include both the

¹⁸ See Cartesian, Access Network Model – Specification Document, para 8.20, p.147.

costs directly allocated directly to FTTC technology (via the NGA Link), but also a share of costs allocated to CGA technology via the SLU/LLU charge. It follows that there is an equivalent under-allocation of costs to CGA services, since a proportion of the costs allocated to the CGA technology are instead recovered from FTTC services.

We have estimated that the total over-allocation of costs to FTTC services is in excess of €5.4 million over 2021-2024.¹⁹ This should be rectified by ComReg in the models.

Figure 5 ComReg’s approach to allocating E-side capital costs



Source: Frontier, based on ComReg D20/101 and the underlying ANM and NGA model

2.2.3 The model understates expected demand outside of urban areas

ComReg aims to estimate total demand for each technology in semi-urban and rural areas based on current fixed-line penetration in urban areas

As noted in Section 1.2, ComReg forecasts demand for CGA, FTTC, and FTTH technologies within the ANM, which is then used to allocate costs between these technologies and calculate unit costs.

This takes place in two main steps within the ANM, and calculated separately in each of Eircom’s exchanges.

1. First, ComReg calculates the total number of fixed lines in an exchange. This is performed by multiplying the forecast number of premises by the estimated fixed penetration rate in the exchange.²⁰ This penetration rate is calculated

¹⁹ This figure was estimated by identifying the total E-side capital cost per line for chambers, ducts, trenches and manholes allocated to SLU in each year (ranging from €2.12 to €2.54 per line per year), and multiplying this by the estimated total number of FTTC lines in each year in the ANM.

²⁰ Each year after 2019 ComReg applies a constant growth rate (0.7%) to the total number of premises.

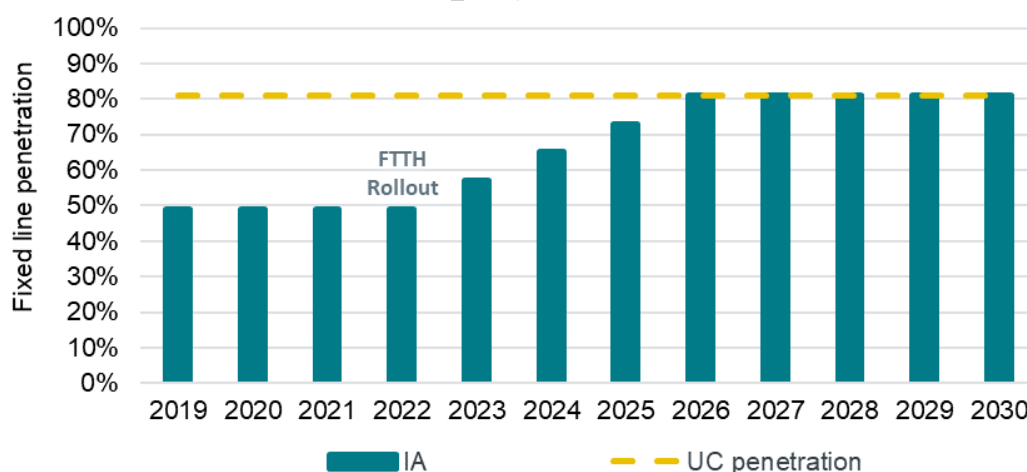
separately for three defined areas within the exchange, which is applied to the estimated number of premises in each of those areas. Those areas are the Urban Commercial areas (covered by Eircom’s planned FTTH deployment); Rural Commercial areas (covered by Eircom’s existing FTTH deployment); and the Intervention Area (“IA”, covered by NBI’s FTTH deployment).

- The number of fixed lines is then allocated to networks and technologies. This is done by first identifying the number of lines which are on “non-Eircom” networks (i.e. cable, FWA, and other FTTH networks), and allocating the remaining (i.e. Eircom) lines between technologies (voice only, and CGA, FTTC, and FTTH broadband), taking into account FTTH roll-out plans and the resulting switch-off of Eircom’s copper network.²¹

To estimate the fixed penetration rate in each exchange, ComReg makes two key assumptions.

- In the Urban Commercial areas of the exchange, the penetration rate is assumed to remain constant at its 2019 levels over the ANM modelling period i.e. until 2030.
- In Rural Commercial areas and the IA, penetration is assumed to increase once FTTH has been deployed in that area.²² In particular, following FTTH deployment, the penetration rate is assumed to increase to the rate of penetration in the Urban Commercial (“UC”) area of the exchange within 4 years, and remain at that level thereafter. This is illustrated for the IA part of an exchange in the figure below.

Figure 6 Evolution of fixed line penetration in the IA



Source: Frontier based on Service Demand module in the ANM

Note: This is relevant for exchanges where fixed line penetration in the IA is lower than in Urban Commercial areas.

We consider this to be a reasonable approach. As noted in Section 2.1, it might be expected that demand for fixed-line services will be at least in part driven by the quality of the service that is available. It is therefore reasonable to expect that FTTH deployment will “unlock” latent demand in Rural Commercial areas and the IA,

²¹ This procedure is set out in detail in the Cartesian Specification Document, in sections 3.68 - 3.91.

²² For the rural commercial areas, this increase begins in the first year of the model, as FTTH is already available in those areas.

given the lack of availability of high-quality broadband services in those areas before the deployment of FTTH. Similarly, the take-up in Urban Commercial areas would appear to be a reasonable proxy for the expected level of demand in these areas, given superfast broadband services have been available in these areas for a number of years (Eircom FTTC services, Virgin Media Cable services).²³

This approach has not been implemented correctly by ComReg in Rural Commercial areas, resulting in a significant reduction in demand being forecast in a number of exchanges

In Rural Commercial areas of each exchange, the relativity between the current fixed penetration rate between Urban Commercial and Rural Commercial areas differs depending on whether an FTTH competitor to Eircom is present in the area.

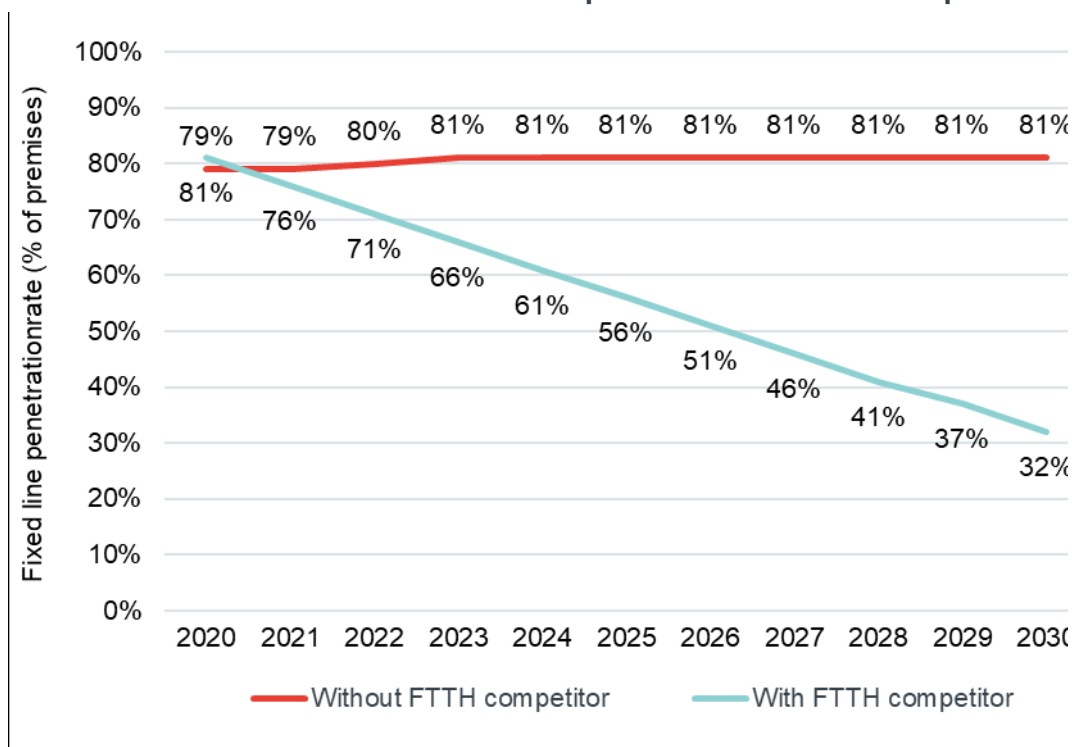
- Where such a competitor is not present, the current Rural Commercial penetration rate is lower than that in Commercial Areas (78% vs 81% in 2019).
- However, where such a competitor is present, the penetration rate in Rural Commercial areas is the same as in Urban Commercial areas, as of 2020 (81%). This is the case in approximately 5% of Eircom's exchanges.

ComReg's approach appears to have been implemented correctly in areas where an FTTH competitor is not currently present, but not where such a competitor is present. In particular:

- Rather than the penetration remaining at the level in Urban Commercial areas (as would be expected under ComReg's approach), the rate instead reduces sharply over time, with no apparent lower bound to the rate. This appears to be the result of a formulaic error, since it is contrary to the approach described by ComReg.
- This means that penetration in the Rural Commercial parts of the exchanges reduces to 32% by 2030, compared to 81% in 2020, as illustrated in the chart below.

²³ As explained in Section 2.1.1, we acknowledge that there may also be socio-economic reasons for differences in take-up between urban and rural areas (for example, reflecting differences in income and demographics).

Figure 7 Fixed line penetration forecasts in the Rural Commercial area – With and without the current presence of an FTTH competitor



Source: Frontier based on Service Demand module in the ANM

There is no clear rationale for why penetration in these areas would evolve in this way. In particular, it is unreasonable to expect that after the deployment of a higher-quality broadband network in previously under-served areas, the penetration in those areas would fall.

ComReg’s approach therefore results in an underestimation of fixed lines in these areas, and in turn the total fixed demand in the ANM: we estimate that the forecast total fixed lines by 2024 are approximately 2.7 thousand lower as a result of the error. This underestimation results in an overestimation of the SLU and LLU unit costs in the ANM, and in turn the estimated FTTC prices that derive from these unit costs.

At a minimum ComReg should ensure that the approach to forecasting penetration in the Rural Commercial areas is consistent across exchanges, which in practice would mean that the penetration rate in Rural Commercial parts of the above-mentioned exchanges remains at the level observed in Urban Commercial areas.

3 REVIEW OF THE NGA AND NGN CORE MODELS

In the Consultation Document, ComReg explains that “[a]lthough FTTC-based prices are not derived directly from the Revised CAM or ANM, following the adoption by ComReg of the 2020 WACC Decision, ComReg has assessed the combined impact of updating the inputs issued from the ANM into the NGA Cost Model and NGN Core Model and the new WACC rate on FTTC prices”.²⁴

As set out in Section 1, other than the revised WACC and the cost inputs from the ANM, the parameters and calculations in the NGA and NGN Core models were left unaltered from those underpinning the 2018 Pricing Decision. As such, we have reviewed the NGA and NGN Core models to assess the extent to which they remain a suitable basis for the setting of FTTC prices.

In the following subsections, we explain that it is necessary for ComReg to update the other inputs into the NGA and NGN Core models to reflect the latest information. By not doing this, the NGA and NGN Core models overestimate the appropriate prices for FTTC services. It also results in the approach in these models being inconsistent with the overall methodology followed by ComReg, in that fixed and common costs are recovered disproportionately by FTTC services rather than proportionate to the number of customers served by each technology.

3.1 The other inputs in the NGA and NGN Core models must be updated

In addition to the WACC and cost inputs from the ANM, there are other key inputs in the NGA and NGN Core models

As outlined in Section 1.2, there are a number of other key inputs in the NGA and NGN Core models beyond the WACC and cost inputs from the ANM:

- The forecast demand for FTTC services;
- Actual and forecast FTTC-specific investments, including access network assets (cabinets and DSLAMs) and backhaul assets (WEILs and transmission cabling); and
- Forecasts of the associated FTTC-specific operating costs, including the cost of DSLAM maintenance.

These inputs must be updated to account for recent market developments

As highlighted in Section 1.2, the NGA and NGN Core models aim to reflect the cost of a Hypothetical Efficient Operators’ (HEO) network, and is therefore abstracted to a degree from the actual costs of Eircom. However, even modelling of a HEO network should be updated to reflect the latest information, for three key reasons:

²⁴ Paragraph 1.9, ComReg 20/101

- to ensure demand used to dimension the HEO network reflects actual demand and expected demand in the market;
- to ensure consistency in cost recovery for the components for which unit costs are calculated in the ANM; and
- taking account of the information asymmetry between Eircom and ComReg, to reflect all available information from Eircom on the efficient level of costs, including that information that has become available since the models were last updated.

In practice, the NGA and NGN Core models use a mix of top-down and bottom-up costing approaches depending on the service and the nature of the assets. Given this, the existing models relied heavily on actual Eircom data in a number of areas, and generated forecasts based on both (i) this data and (ii) expectations of future market developments at the time the models were developed. More specifically, the models relied on:

- Eircom's actual FTTC base as of 2016. As set out in ComReg 17/26,²⁵ this is used as the starting point for FTTC demand forecasts. FTTC lines were forecast to grow overall up to 2021, and then remain flat thereafter (increasing by around 30% from 413 thousand to 538 thousand between 2016 and 2019, before declining around 5% to 522 thousand in 2021 and remaining flat thereafter). This reflected an assumption that there would be no material FTTH deployment in Eircom's FTTC footprint, given Eircom had yet to produce clear FTTH deployment plans at the time the models were developed. The FTTC line forecasts are the first step in the derivation of network costs in the model.
- Capital cost data for FTTC-specific assets, including FTTC cabinets, DSLAMs and transmission equipment. Reflecting ComReg's view that Eircom would maintain its FTTC base, future capex was forecast on the assumption that FTTC-specific assets will continue to be replaced on a forward-looking basis.
- Eircom's operating cost data from 2016. This is used as the basis for forecasting FTTC-specific opex. Opex was estimated to remain largely stable over time, consistent with the forecast evolution in FTTC lines, and the assumption that FTTC-specific assets will continue to be replaced over time. For some opex categories (e.g. power and accommodation relating to DSLAMs and aggregation nodes), forecasts of opex per line are calculated directly by applying unit opex trends to Eircom's actual opex per line in 2016.²⁶ For other categories (e.g. opex for equipment at aggregation nodes, and management system opex), total opex is calculated as a proportion of the forecast Gross Replacement Cost of the relevant assets in each year, and then divided by the forecast FTTC lines to obtain unit costs.²⁷

However, new information and changes in the market since the last repopulation of the models means that the historic Eircom data is no longer suitable for the basis of generating forecasts of efficient demand and costs. This includes new information that has become available to ComReg in relation to future market

²⁵ See paragraph 6.37, ComReg 17/26.

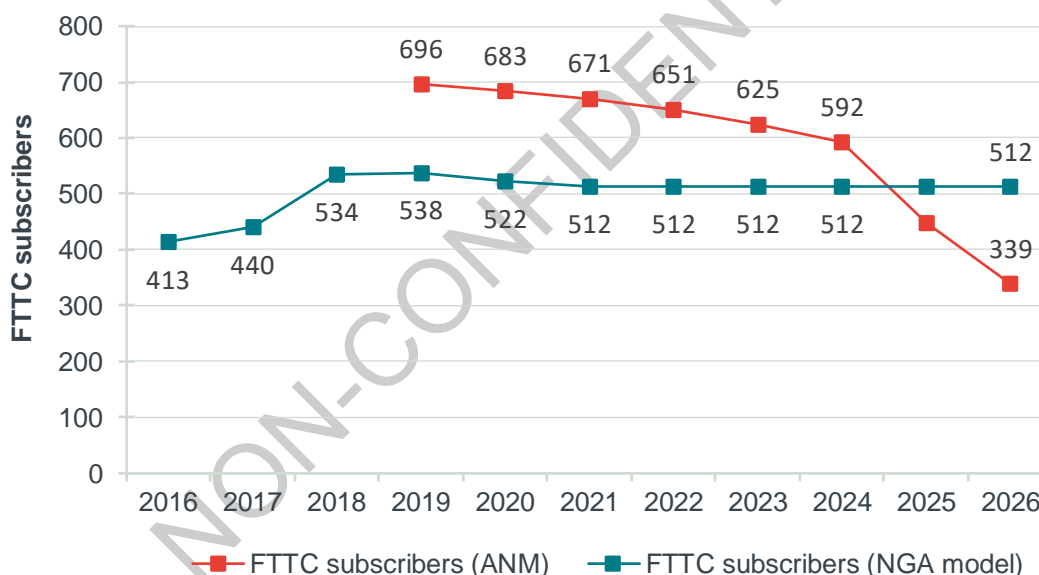
²⁶ See worksheets "FTTC DSLAM", "DSLAM eVDSL", and "Agg node" within the NGA model. The unit opex trends range from -5% to 2% per year depending on the opex category.

²⁷ For example, see worksheets "Agg node" and "Design, Management + common cost" within the NGA model.

developments, such as Eircom’s urban FTTH deployment plans, which means that the expectations of how demand and the efficient level of FTTC network costs would evolve over time have changed significantly since the development of the models.

First, Eircom’s current FTTC base is much larger than was anticipated in 2016. In particular, the number of FTTC lines as of 2019 (as per the ANM) is 696 thousand, compared to the forecast made in 2016 of 538 thousand for 2019. In addition, the planned deployment of FTTH networks in urban areas is now expected to reduce the FTTC base significantly over time as customers migrate over to the FTTH network, something that was not reflected in the FTTC forecasts in the NGA model made in 2016. Together, the forward-looking forecast of the FTTC base based on the most up-to-date data will be much larger than that in the NGA model in the short-term, and lower in the longer-term once customers have migrated to FTTH and the copper network is switched off. This is shown by ComReg’s own FTTC forecasts in the ANM, which show that the FTTC base is expected to be larger than that forecast in the NGA model until 2024 (see Figure 8 below).

Figure 8 FTTC line forecasts – ANM vs NGA model



Source: Frontier based on the ANM and NGA model

Notes: Lines from both models do not include eVDSL lines. Information on the number of FTTC subscribers was unavailable in the ANM pre-2019, and Eircom’s RFSs do not provide a breakdown of NGA subscribers between FTTC and FTTH services for these years.

Second, since the deployment of FTTH is likely to result in the eventual switch-off of Eircom’s copper network, as assumed in the ANM, it is reasonable to expect that FTTC assets (as well as other assets relating to copper-based services) will be ‘sweated’ until copper switch-off. The assumption made in 2016 that FTTC-specific assets will be operated on an indefinite basis, with these assets continuing to be replaced periodically, is therefore no longer reasonable. In fact, in a large number of exchanges, FTTC network assets are assumed to be replaced even after the year in which ComReg expects Eircom to switch off its copper network in the ANM. The current forecasts of FTTC capex and opex in the models will

therefore significantly overestimate the expected forward-looking level of efficient FTTC network costs, given the changed market situation. For example, the total estimated capex from the replacement of FTTC-specific assets in the NGA model totals over €52 million over 2021-2024.²⁸

Finally, there have been significant changes in Eircom's cost base in recent years, providing information on the efficient level of operating and investment costs which was not available to ComReg when the models were populated in 2016. For example, Eircom has undertaken a significant cost reduction programme in recent years, which has resulted in a substantial reduction in Eircom's operating costs including a saving of €73 million over the financial years 2018 and 2019.²⁹ Also, according to Eircom's Regulatory Financial Statements, Eircom's Repair and Maintenance operating costs alone have fallen by approximately 20% between 2016 to 2020 (from €68 million to €56 million). This suggests that either Eircom's costs in 2016 were at an inefficient level or that the efficiency frontier has shifted considerably since 2016. Contrary to this new evidence of significantly lower repair and maintenance costs, the per-line repair costs for faults in the NGA model are taken from 2016, with no adjustment or efficiency trend applied in the repair cost forecasts to reflect either the inefficiencies in Eircom's costs in 2016 or expected cost efficiencies after this year. This is another reason why the estimate of Eircom's efficiently incurred forward-looking costs within the NGA model based on 2016 data is an overestimate of the "best estimate" level of efficient costs based on information now available.

FTTC demand data must be updated in the NGA model to ensure internal consistency with the ANM inputs and avoid over-recovery of costs

As outlined in Section 1.2, forecasts of FTTC demand are required inputs to both the ANM and the NGA model. As noted in Section 2.1, forecast demand has been updated in the ANM to reflect more up-to-date information for 2019. As explained earlier in this section, this leads to a higher level of FTTC demand in the ANM relative to the NGA model in the years up to 2025.

Therefore, if demand data is not also updated in the NGA model, there is an inconsistency between the models, which together are used to set FTTC prices.

Specifically, a problem arises since this inconsistency leads to an over-recovery of shared E-side costs via the NGA Link component, which is an input to the NGA model from the ANM.

- The attribution of shared E-side costs to the NGA Link component are calculated using demand data in the ANM, which reflects a higher level of FTTC demand (reflecting actual usage).
- When used to determine unit FTTC costs these costs are then divided by the a smaller level of demand in the NGA model based on the forecast made in 2016.

Figure 9 below illustrates the estimated over-recovery of NGA Link costs across FTTC services. The annual NGA link cost per line based on the out of date forecast

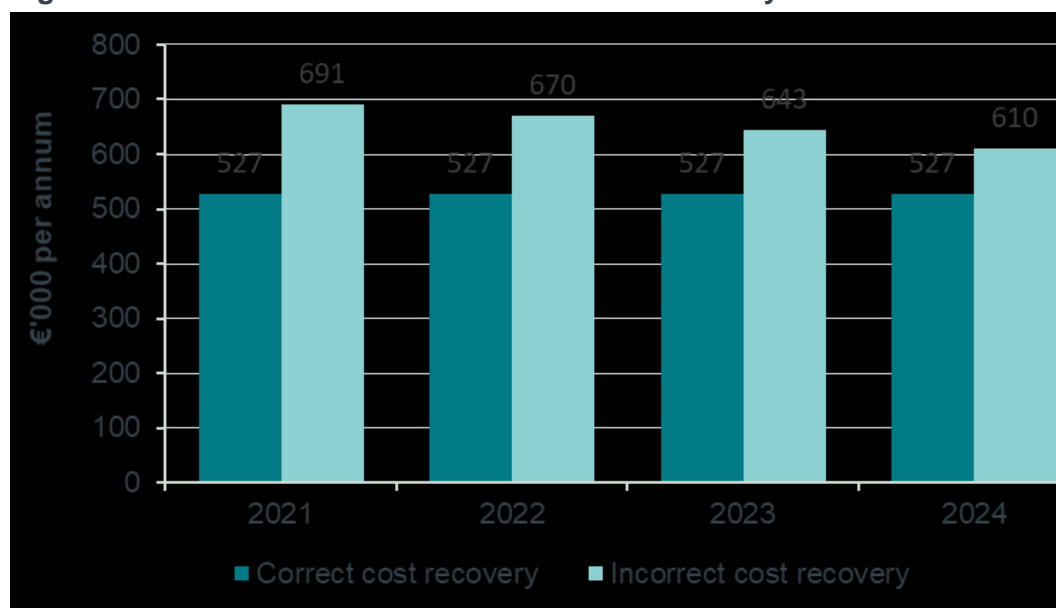
²⁸ Based on the capex forecasts in the NGA model.

²⁹ For example, See Eircom's 2019 annual bondholder report, p.8. Available at: https://www.eir.ie/opencms/export/sites/default/.content/pdf/IR/reports/2018_2019/quarter4/eir_Q4_FY19_results_report.pdf

of FTTC lines is €1.03³⁰, but in practice will be recovered over the higher (correct) number of subscribers in the ANM. As a result, the over-recovery of costs from FTTC services is equal to this annual cost multiplied by the difference in forecast FTTC lines between the ANM and the NGA model. In aggregate, this equates to a cost over-recovery of approximately €505 thousand over the period 2021-2025.

This over-recovery of costs runs contrary to ComReg's objective of shared costs being recovered across technologies proportionately to the number of customers served by those technologies.

Figure 9 Illustration of NGA Link cost over-recovery for FTTC services



Source: Frontier based on the ANM and NGA model

Updating data inputs in the NGA and NGN Core models is consistent with international best practice

It is common practice to update bottom up models over time to reflect the latest available information on the efficient level of costs and demand.

For example in Denmark, the Danish Business Authority (Erhvervsstyrelsen) updates its cost models on an annual basis to inform the prices of wholesale services in the subsequent year. This includes a LRAIC model which is used to set prices for wholesale services provided by the incumbent, TDC, in Market 4 and Market 6 i.e. the markets for Wholesale (physical) network infrastructure access at a fixed location (including shared and fully unbundled access) and for Wholesale Broadband access.³¹ The model update to set wholesale prices for 2017 reflected only updates to reflect the latest information (including an updated WACC), with

³⁰ This value is the same in each year, as a constant annual charge is calculated by annualising costs according to an economic depreciation approach. This occurs in the worksheet "Access FTTC" within the NGA model.

³¹ See <https://tdcgroup.com/en/investor-relations/regulation>

no update made to the cost modelling methodology compared to its previous pricing decision.³²

3.2 ComReg has not updated these inputs

As noted in Section 1, all inputs in the NGA and NGN Core models have remained unchanged, with the exception of the cost inputs from the ANM and the value of WACC.

Given the above, this means that:

- The forecasts of FTTC demand in the NGA and NGN Core models do not reflect the actual increase in the FTTC base in recent years, nor the impact of FTTH deployment on the FTTC base going forwards. This means that the FTTC base is inconsistent with that in the ANM and, as shown above, the NGA and NGN Core models significantly underestimate the expected FTTC base over the next few years.
- Forecast capex and opex for FTTC-specific assets do not take account of the expected switch-off of Eircom's copper network. In fact, in a large number of exchanges, these assets are assumed to be replaced even beyond the year in which ComReg assumes Eircom will switch off its copper network. ComReg therefore overestimates these FTTC-specific costs.
- Forecast FTTC network operating costs also do not account for information on Eircom's recent cost reduction programme. The estimates of efficiently incurred, forward-looking costs based on the most recent Eircom cost data are therefore likely to be significantly lower than those reflected in the NGA and NGN Core models.

Together, these issues result in a significant overestimation of FTTC cost-based prices, by first overestimating total FTTC costs, and then spreading these costs over an FTTC base that is too small. It also means that there are fundamental inconsistencies between the ANM and the NGA and NGN Core models, which as explained above, exacerbates the overestimation of FTTC unit costs.

This over-recovery of costs is incompatible with ComReg's objective of recovering fixed and common costs proportionately to the number of customers served by each technology.

³² See the EC's responses to the DBA's Draft Decision on these prices (DK/2016/1929), section 2.2 https://circabc.europa.eu/sd/a/a09c1a0c-566d-4d82-a150-fdca44a6293/DK-2016-1929%20Adopted_EN.pdf

4 CONCLUSION AND RECOMMENDATIONS

We have undertaken a critical review of ComReg's proposals within D20/101, and assessed their impact on the proposed prices of regulated services. This review included a critical review of the new ANM and an assessment of the NGA and NGN Core models, with the latter focussing on whether the updates to data within those models are sufficient to set appropriate cost-based prices for FTTC services.

Overall, we draw the following four main conclusions from our assessment:

- The intended methodological approach underpinning the ANM is broadly consistent with ComReg's key objectives for the study. In particular, the approach used in the ANM to take account of the deployment of FTTH networks is broadly reasonable, and maintains consistency with the overall methodological approach in the Revised CAM. The model has also been populated with more up-to-date data for 2019.
- There are, however, material errors in the implementation of the approach within the ANM, which must be corrected by ComReg. These include the unjustified recovery of incremental CEI costs resulting from Eircom's urban FTTH deployment from FTTC and CGA services and errors in the allocation of E-side capital costs to FTTC services, both of which result in an overestimation of FTTC costs. There is also an error in the calculation of demand in certain Eircom exchanges, which results in an underestimation of total fixed service demand in these exchanges, hence increasing unit costs.
- In contrast to the ANM, the NGA and NGN Core models have not been fully updated to take account of the most up-to-date information, both in terms of demand for FTTC services and the level of efficient costs. Even though the NGA and NGN Core models model a hypothetical network, it is not reasonable to ignore new information that has come to light since the model was initially developed and populated which alters the best estimate of the efficient level of costs. The latest information used to inform demand forecasts in the ANM shows that FTTC demand is expected to be much larger than the NGA model estimates over the price control period, and the efficient level of FTTC costs much lower (due to "sweating" of assets until the FTTC network is switched off and lower opex reflecting Eircom's recent cost reduction programme).
- In addition, failing to update the demand forecasts results in the NGA and NGN Core models being inconsistent with the new ANM, where the demand forecasts have been updated. This inconsistency means that the results of the models are not consistent with the overall methodology followed by ComReg, in that fixed and common costs are recovered disproportionately by FTTC services rather than proportionate to the number of customers served by each technology. In particular, this leads to an over-recovery of access network costs from FTTC services, as the costs allocated to FTTC in the ANM (based on the updated demand forecasts) are then spread across the smaller out-of-date forecast of FTTC demand in the NGA model.

Together, these issues result in FTTC prices being materially overstated.

This is highlighted by data from Eircom's most recent Regulatory Financial Statements, where the estimated NGA rental cost per line on a HCA basis was €14.86 per month in 2020, significantly lower than ComReg's proposed price for the FTTC VUA service of €18.67 in 2021.³³

It is also shown by ComReg's statement in its Consultation Document, which states that absence of the change in WACC, the modelled FTTC prices in the NGA model over the price control period would be larger than previously estimated:

"Absent any change to the WACC rates, updating the NGA Cost Model with the revised cost inputs from the ANM would lead to an increase in the modelled costs of FTTC based VUA rental across the price control period".³⁴

This is an unrealistic outcome, given that, as explained in Section 3, the efficient level of FTTC costs is expected to be lower than previously estimated, and the level of FTTC demand significantly higher.

In the light of the above, we therefore recommend that ComReg makes the following changes to its calculation of regulated prices:

1. Update the ANM model calculations to ensure that no share of the additional CEI costs resulting from Eircom's urban FTTH deployment are allocated to FTTC and CGA services, and to remove the CEI uplift applied to CGA and FTTC costs during the years of Eircom's FTTH deployment. This would be consistent with ComReg's approach in the IA whereby the incremental costs of FTTH roll-out are recovered only from FTTH services (delivered in this case by NBI).
2. Correct the allocation of E-side capital costs in the ANM, such that the allocation of these costs to CGA and FTTC services reflects the share of subscribers accounted for by these services.
3. Correct the forecast fixed penetration in Rural Commercial areas within the ANM, such that demand is not assumed to fall sharply in certain Eircom exchanges.
4. Update the ANM with input data for 2020.
5. Update all relevant inputs in the NGA and NGN Core models to reflect the latest available information:
 - update the forecasts of FTTC demand to be consistent with the ANM;
 - adjust the assumption regarding future FTTC-specific capex to reflect the expectation that assets will not be replaced on an ongoing basis, but rather would not be replaced given the transition to FTTH technologies; and
 - update forecasts of FTTC-specific opex to reflect both the expected switch-off of FTTC-specific assets, and the most up-to-date data on Eircom's actual costs as per Eircom's AFIs for 2020.

³³ The NGA rental cost in Eircom's accounts covers both FTTH and FTTC services. However, given Eircom's FTTH network is currently relatively limited versus its FTTC network, we would still expect the estimates in ComReg's model to be roughly comparable to the combined FTTC and FTTH unit costs.

³⁴ ComReg D20/101, paragraph 6.74.

We expect that these changes would be relatively simple to implement in the model, so we would expect ComReg to be able to revise its proposals without significantly delaying the implementation of new FTTC prices. In particular:

- the changes to the ANM would require limited changes to the model calculations; and
- the data required to update the ANM, NGA and NGN Core model should be readily available, either because it is collected by Eircom as part of the production of its Regulatory Financial Statements, or because we expect the required data to be relatively easy for Eircom to collect.

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10:Sky Annex 1 – Opinion of the Advocate General

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OPINION OF ADVOCATE GENERAL

RUIZ-JARABO COLOMER

delivered on 1 April 2008¹

I — Introduction

1. The Bundesverwaltungsgericht (Federal Administrative Court), Germany has requested the Court of Justice to rule on the scope attributed to the financing of certain universal service obligations by Commission Directive 90/388/EEC of 28 June 1990 on competition in the markets for telecommunications services ('Competition Directive' or 'Directive 90/388')² and Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision ('Interconnection Directive' or 'Directive 97/33').³

2. The referring court asks whether it is lawful to impose, for the benefit of the dominant operator in the public telecommunications network, charges additional to connection charges in a sector characterised

by the liberalisation⁴ fostered by the Competition⁵ and Interconnection Directives,⁶ and completed by the 'new regulatory framework',⁷ adopted on 7 March 2002 and published on 24 April 2002.⁸

3. The undertakings required to pay those additional charges dispute their validity,⁹ invoking the principles of free competition,

4 — I describe the milestones marking the route to liberalisation in my Opinions in Joined Cases C-327/03 and C-328/03 *ISIS Multimedia and Firma O2* [2005] ECR I-8877; Case C-339/04 *Nuova società di telecomunicazioni* [2006] ECR I-6917; Case C-64/06 *Telefónica O2 Czech Republic* [2007] ECR I-4887; and Case C-262/06 *Deutsche Telekom AG* [2007] ECR I-10057.

5 — Amended by Commission Directive 96/19/EC of 13 March 1996, with regard to the implementation of full competition in telecommunications markets (OJ 1996 L 74, p. 13).

6 — In particular, following the wording inserted by Directive 98/61/EC of the European Parliament and of the Council of 24 September 1998 (OJ 1998 L 268, p. 37), which is applicable *ratione temporis*.

7 — In my Opinion in *Deutsche Telekom*, I use that term to refer to four Directives of the European Parliament and of the Council: Directive 2002/19/EC of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive); Directive 2002/20/EC of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive); Directive 2002/21/EC of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive); and Directive 2002/22/EC of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive).

8 — OJ 2002 L 108, pp. 7, 21, 33 and 51.

9 — The Spanish expression 'disfrutar de una conminación' (literally, 'to enjoy an obligation') is a contradiction in terms. However, intentionally created paradoxes have always existed, such as the title of the opera *The Happy Slaves* which the Bilbaoan Juan Crisóstomo de Arriaga, nicknamed the Spanish Mozart, composed in 1820, before he died at the young age of 20, leaving a musical legacy rich in chromaticisms and beautiful modal ambiguities.

1 — Original language: Spanish.

2 — OJ 1990 L 192, p. 10.

3 — OJ 1997 L 199, p. 32.

the prohibition of discrimination and administrative transparency.

6. That trend crystallised in a new framework, contrasting with the state involvement in the provision of the service which had moulded it to the predominant political will,¹¹ to the detriment of the liberalisation of the sector.

II — The legislation applicable

A — Community law

4. The creation of a competitive, harmonised European market, founded on the free choice of telephony operators, commenced in 1987 with the drafting of the Green Paper on telecommunications.¹⁰

5. The administrative deregulation of the sector significantly transformed its legal status, which had been based on the notion of *publicatio* or keeping the operation of telecommunications networks in the hands of public bodies: the traditional system of state monopolies, incapable of satisfying the demands of the ever-increasing number of users resulting from the revolution which had taken place in the industry, disappeared.

1. Directive 90/388¹²

7. The judgment in *Italy v Commission*¹³ sent shockwaves through the world of telecommunications by holding that the rules on competition apply to public bodies holding special or exclusive rights.

8. Notwithstanding the adjustments made in case-law, there were notable gaps in the system, made evident by the complexity of the field and the continued existence of markets dominated by the state operator, whose participation could be achieved only by means of specific statutory measures.

9. There was an even greater reaction to the expected liberalisation, effected by

10 — *Green Paper on the development of the common market for telecommunications services and equipment*, Brussels, 16 December 1987, COM (87) 290 final, pp. 6, 16 et seq., supplemented by a number of proposals aimed at ensuring the uniformity of the authorisation mechanisms provided for in the legislation of the Member States, such as the proposals contained in the *Green Paper on the Liberalisation of Telecommunications Infrastructure and Cable Television Networks — Part II*, Brussels, 25 January 1995, COM(94) 682 final, p. 61 et seq.

11 — It is clear from recitals 2 and 7 in the preamble to Directive 90/388 that there was awareness of that situation when the directive was drafted.

12 — Replaced by Commission Directive 2002/77/EC of 16 September 2002 on competition in the markets for electronic communications networks and services (OJ 2002 L 249, p. 21).

13 — Case 41/83 [1985] ECR 873.

Directive 88/301/EEC¹⁴ and consolidated two years later by Directive 90/388, which abolished special and exclusive rights. There were a number of exceptions, including, in particular, voice telephony, in respect of which the opening-up to competition was delayed until Commission Directive 96/19 of 13 March 1996 amending Directive 90/388.

10. Article 4c of Directive 90/388¹⁵ calls on the Member States to rebalance tariffs, providing for the essential guideline to the effect that the price of universal service provision may be increased, while bearing in mind the need to ensure its affordability. The article is also aimed at ensuring the conciliation of operators' revenues, taking account of specific market conditions and in the spirit of cooperation which is fundamental in order to enable all individuals to enjoy telecommunications services.

2. Directive 97/33¹⁶

11. On a separate front, the route to harmonisation,¹⁷ which ran parallel to the efforts to remove the barriers restricting effective competition between operators,

14 — Directive of the Commission of 16 May 1988 on competition in the markets in telecommunications terminal equipment (OJ 1998 L 131, p. 73).

15 — Inserted by Directive 96/19.

16 — Replaced by Directive 2002/21.

17 — Unquestionably strengthened by Council Directive 90/387/EEC of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision (OJ 1990 L 192, p. 1).

encouraged the entry of new operators into the market, by ensuring the establishment of a permanent equilibrium between those involved in open network provision.¹⁸

12. However, harmonisation also needed to extend to access to and location of the infrastructures, thereby guaranteeing interconnection between public networks and their suppliers.

13. As I explained in my opinion in *Telefónica O2 Czech Republic*,¹⁹ that objective led to the adoption of Directive 97/33 which concerns certain financial aspects of interconnection between operators and precludes the fixing of tariffs below the threshold of the actual costs, while at the same time preventing mercantilist dabbling by prohibiting charges which exceed that threshold (recital 10).

14. Article 7(2) of Directive 97/33 provides:

'Charges for interconnection shall follow the principles of transparency and cost orientation. The burden of proof that charges are derived from actual costs including a reasonable rate of return on investment shall lie with the organisation providing interconnection

18 — Known by the abbreviation 'ONP'.

19 — Paragraphs 5 and 6.

to its facilities. National regulatory authorities may request an organisation to provide full justification for its interconnection charges, and where appropriate shall require charges to be adjusted. This paragraph shall also apply to organisations set out in Part 3 of Annex I which have been notified by national regulatory authorities as having significant market power on the national market for interconnection.

services concerned by enshrining the principle of transparency.²⁰

B — *The German legislation*

...'

15. In order to prevent fraud, Article 7(4) provides that, in accordance with Community law, interconnection charges must be sufficiently unbundled, so that the applicant is not required to pay for anything not strictly related to the service.

18. Paragraph 35 et seq. of the Telekommunikationsgesetz of 25 July 1996 (Law on telecommunications; 'TKG') sets out the obligations incumbent on the dominant operator with regard to providing access and interconnection.²¹

16. In addition, following the adoption of Directive 98/61, which inserts a paragraph 7 into Article 12 of Directive 97/33, subscribers are granted the right to access the switched services of any interconnected telecommunications provider and the national regulatory authorities are required to ensure that pricing for interconnection is cost-orientated and that any charges imposed do not act as a disincentive for the use of the facility.

19. In accordance with Paragraphs 39 and 27 et seq., all charges relating to access to the network must be submitted for authorisation so that the licence holder does not receive payments in excess of those approved by the administrative authorities.

20. Paragraph 43(6) of the TKG, in the version of the Law of 21 October 2002,²² provides for the levying of additional charges

17. The Community provisions on competition in the field of telecommunications, which are structured towards the protection of consumers, provide for interconnection charges but exclude sums which are not intended to cover the actual costs of the

20 — In Case C-33/04 *Commission v Luxembourg* [2005] ECR I-10629, the Court declared that the Grand Duchy of Luxembourg had failed to fulfil its obligations on the grounds that it had infringed the principle of transparency by failing to verify, in accordance with Directive 97/33, the compliance of cost accounting systems using a competent independent body and by not publishing a statement of compliance.

21 — BGBl. 1996, I, p. 1120.

22 — BGBl. 2002, I, p. 4186.

to compensate for any deficit suffered by the dominant operator.

Paragraph 43(6) of the TKG, ordered, with effect from 1 July 2003, an additional non-cost based contribution in respect of the Telekom-B.2 (Ort.) facility, in the amount of EUR 0.0004 per minute, on the grounds that revenues accruing to Deutsche Telekom from end users did not cover all the costs of activating the local loop.

III — The facts, the main proceedings and the questions referred for a preliminary ruling

21. Arcor AG & Co. KG, Communication Services TELE2 GmbH and Firma 01051 Telekom GmbH operate in Germany using public telecommunications networks, and offer their customers a carrier selection service through interconnection to the local network of Deutsche Telekom.

24. Barely one month later, the Commission²⁴ fined Deutsche Telekom EUR 12 600 000 for abusing its dominant position by requiring its competitors to pay a price for access to the local network which was higher than the one it charged its own subscribers for use of the fixed network.

22. The regulatory authority requires Deutsche Telekom to provide the facility Telekom B.2 (Ort.), in return for a charge paid by Arcor AG & Co. KG, Communication Services TELE2 GmbH and Firma 01051 Telekom GmbH.

25. By decision of 23 September 2003, the regulatory authority annulled (*ex nunc*) the imposition of the additional contributions, which were thus restricted to the period from 1 July to 23 September 2003.

23. By decision of 29 April 2003, following an application by Deutsche Telekom, the Regulierungsbehörde für Telekommunikation und Post (Regulatory Authority for Telecommunications and Post),²³ relying on

26. Each of the three undertakings required to pay the additional charges individually contested the administrative decision approving those charges.

23 — Now the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (Federal Agency for Electricity, Gas, Telecommunications, Postal and Railway Networks).

24 — Decision 2003/707/EC of 21 May 2003 (OJ 2003 L 263, p. 9), in respect of which proceedings have been pending before the Court of First Instance (T-271/03) for more than four years.

27. By judgment of 3 November 2005, the Verwaltungsgericht (Administrative Court), Cologne upheld their claims on the grounds of infringement of Community law, in particular Article 7(2) and Article 12(7) of Directive 97/33, as amended by Directive 98/61.

If the answer to the first question is in the affirmative:

- (2) Is the incompatibility with Community law of such a requirement, which is a provision of domestic law, to be taken into account by the national court in proceedings concerning the approval of a contribution by the interconnected network operator?

28. Germany and Deutsche Telekom brought an appeal before the Bundesverwaltungsgericht, which took the view that Paragraph 43(6) of the TKG may be incompatible with Community law. Accordingly the Bundesverwaltungsgericht stayed the proceedings and referred the following questions to the Court of Justice for a preliminary ruling:

IV — The procedure before the Court of Justice

29. The order for reference was registered at the Court Registry on 20 March 2007.

30. By order of 1 June 2007, the President of the Court joined the three cases on account of their objective connection.

(1) Are Commission Directives 90/388/EC of 28 July 1990 and Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 to be interpreted as precluding the national regulatory authority from requiring, in 2003, the operator of a network interconnected with a public telecommunications subscriber network to pay a contribution to the market-dominant operator of the local network in order to compensate that operator for the deficit incurred as a result of providing the local loop?

31. Observations were lodged, within the time-limit laid down in Article 23 of the Statute of the Court of Justice, by the German Government and Deutsche Telekom, who propose that both questions referred be answered in the negative, and by the appellant undertakings in the main proceedings and the Commission, who argue that the Court should rule that the requirement concerned is incompatible with Community law.

32. At the hearing on 19 February 2008, oral argument was presented by the representatives of those who participated in the written stage and also by the United Kingdom.

ation of the invention in New York. Therefore, with the passage of time each individual has been placed in his rightful position.²⁸

V — Analysis of the questions referred for a preliminary ruling

A — The first question

33. The Court is seised of a large number of proceedings in which telecommunications are of great significance, a phenomenon foreseen since the dawn of the development of such services because of the economic potential inherent in exploiting them.

1. Some preliminary points on universal service

34. It may seem paradoxical but, even though the patent for the telephone was granted to Alexander Graham Bell in 1876²⁵ following a lengthy legal dispute,²⁶ the United States Congress²⁷ recently reinstated the memory and the achievements of the Italian Antonio Meucci, acknowledging that before that date, in 1860, he publicly demonstrated the oper-

35. 'One system, one policy, universal service'.²⁹ That slogan³⁰ revealed the desire to bring the whole population together through a telephone network³¹ in a period when the rivalry between the Bell System and the independent companies turned into hysteria.³²

25 — United States Patent No 174, 465.
 26 — On that subject, see Evenson, E., *The Telephone Patent Conspiracy of 1876: The Elisha Gray — Alexander Bell Controversy*, Jefferson (North Carolina), McFarland Publishing, 2000; Catania, B., *Il Governo degli Stati Uniti contro Alexander Graham Bell — Un importante riconoscimento per Antonio Meucci*, AEI-Automazione, Energia, Informazione, vol. 86, No 10 Supplemento de octubre de 1999, pp. 1 to 12; and, by the same author, *Antonio Meucci finally recognised*, Lecture in the presence of the President of Italy, Carlo Azeglio Ciampi, at the Meucci Day in Rome, 28 May 2003.
 27 — By Resolution No 269 of 11 June 2002 (107th Congress, 1st session).

28 — After hearing the replies of the prophesying ape, Don Quixote, addressing Sancho, predicts: 'Events will show ... for time, which reveals all things, leaves nothing that it does not drag into the light of day, even things hidden in the bosom of the earth.' Cervantes Saavedra, M. de, *Don Quixote*, translated by J.M. Cohen, Penguin Books, Harmondsworth, 1986, Part II, Chapter XXV, p. 637.
 29 — Footnote not relevant to English-language version.
 30 — Coined in the United States in 1907 by Theodore Vail, president of the American Telephone and Telegraph Company.
 31 — Mueller M., *Universal service and the new Telecommunications Act: mythology made law*. Communications of the ACM, Rutgers University SCILS, March 1997, and Renaudin E., *L'évolution du Service Universel dans le secteur des télécommunications*, DEA Droit public des Affaires, 2003-2004, University of Paris X, Nanterre.
 32 — Arlandis J., *Service Universel: évolution d'un concept-clé*, Communications et stratégies, primer trimestre, 1994, No 13, p. 41.

36. The aim of universal service is to offer a quality service at a reasonable price throughout the territory concerned, propositions which are set out in Articles 3 and 9 of Directive 97/33.

37. However, that task of public interest gives rise to a number of difficulties, since, without proper navigation, there is a risk that it will founder in a society characterised by the dualism between those who are able to access certain networks and services and those who are excluded from doing so.

38. With a view to resolving those difficulties, Community law satisfies both the needs of the public and the rules of competition in pursuit of cooperation and commercial freedom, while bearing in mind the need to calculate the cost of the service and distribute it between all the operators. Those aims are reflected in Article 5 of the Interconnection Directive and Articles 12 to 14 of the Universal Service Directive.

39. The dissociation between the notions of historic operator and universal service provider therefore arises as an inevitable consequence, so that any private firm with sufficient capacity may take up the task, while, to avoid any confusion between the roles of judge and litigant, the State changes its status from that of guardian to mere regulator.³³

33 — Renaudin E., *op.cit.*, p. 11.

2. Local calls as part of universal service

40. It is clear from Article 5(2) of Directive 98/10/EC of the European Parliament and of the Council of 26 February 1998 on the application of open network provision (ONP) to voice telephony and on universal service for telecommunications in a competitive environment,³⁴ and from Article 4(2) of Directive 2002/22/EC, that local calls fall within the scope of universal service.

41. However, in its arguments the former monopoly, supported by the German Government, interprets Article 4c of Directive 90/388 in an unusual manner which, in my opinion, is devoid of reason.

42. Deutsche Telekom asserts that the provision is not applicable on the grounds that it has not assumed any universal service obligation.

43. However, the discrepancies between the versions of the provision³⁵ in the different

34 — OJ 1998 L 101, p. 24.

35 — There is a divergence between the various translations of Article 4c: the French ('imposées') and German ('auferlegt wurden') versions imply a sense of imposition, while the English ('entrusted'), Italian ('assegnati') and Spanish ('confiadas') versions give a more flexible connotation to the obligations concerned.

Community languages appear paradigmatic, and, therefore, to reach the correct interpretation, it is necessary to take account of its general scheme and underlying purpose,³⁶ always in the light of the other linguistic versions.³⁷

3. The financing of universal service

(a) Tariff rebalancing³⁸

44. On that interpretation, the argument is easily refuted in the light of liberalisation where any imposition of obligations is of secondary importance. Only if the operators were unable to provide universal service would administrative intervention and the imposition of obligations be unavoidable. However, until such time as that exceptional situation occurs, the universal service obligations are entrusted to the market as a whole.

46. After the basic conditions for opening up the telecommunications market had been created, Advocate General Léger³⁹ observed that effective competition requires a rebalancing of tariffs, designed to prevent the risk of operators focusing their activity on the most profitable market segments (national and international calls), thereby marginalising the less profitable services (local calls) which must also be provided under the universal service obligation.

47. That is the aim pursued by Directive 90/388, as amended by Directive 96/19. Recital 20 in the preamble to the latter directive describes the situation which it seeks to alter, where certain categories of telephone calls are provided at a loss and are cross-subsidised out of the profits from other segments of a particular undertaking's activity.

45. In any event, the facts demonstrate that before and after (as to more than 95%) liberalisation, Deutsche Telekom operated in the universal service segment of local calls.

48. The artificially low prices of local calls impeded competition and did not provide

36 — Judgments in Case 19/67 *Van der vecht* [1967] ECR 445; Case 30/77 *Bouchereau* [1977] ECR 1999; and more recently, Case C-482/98 *Italy v Commission* [2000] ECR I-10861; Case C-1/02 *Borgmann* [2004] ECR I-3219; and Case C-63/06 *Profisa* [2007] ECR I-3239.

37 — Judgment in Case C-372/88 *Cricket St. Thomas* [1990] ECR I-1345, paragraph 19.

38 — Footnote not relevant to English-language version.

39 — At paragraphs 3 and 4 of his Opinion in Case C-500/01 *Commission v Spain* [2004] ECR I-583.

potential competitors with any incentive to enter the less lucrative fields.

phasing out of the remaining imbalances, or a detailed timetable for so doing.⁴³

49. In the judgment in *Commission v Spain*,⁴⁰ the Court, while acknowledging that Article 4c of Directive 90/388 did not lay down a period within which tariffs must be rebalanced, found that Directive 96/19 provided for rebalancing to be carried out at a sustained rate and to be completed no later than 1 January 1998 (paragraph 32).

b) Cross-subsidisation: an inadequate financing mechanism in a market which has been opened up to competition

50. Recital 5 in the preamble to Directive 96/19 states that there will be exceptions to the time-limit where networks are less developed⁴¹ or very small,⁴² in all cases in accordance with a detailed timetable.

52. In the wake of liberalisation, Directive 97/33 used the ingredients of fairness and proportionality, seasoned with the principle of non-discrimination (recital 2), to temper certain conditions for interoperability, presented under the format of accounting separation, in order to avoid any upsets caused by unfair cross-subsidisation,⁴⁴ which is always difficult to digest at the table of free competition.

51. Neither of those exceptions arises in the case before the Court, from which it follows that the tariffs in Germany should have been rebalanced by 2003. In a similar case, the Court declared that France had failed to fulfil its obligations on the grounds that it had not complied with those time-limits, since it had been established that the rebalancing provided for in the third paragraph of Article 4c of Directive 90/388, as amended, had not been completed by 1 January 1998 and that the French Government had not sent the Commission its plans for the gradual

53. Unlike the situation under the monopoly, when such internal transfers — whereby the profits from activities not subject to restrictions were earmarked for covering the losses from the provision of social services (such as universal service) — were accepted, in the new framework of liberalisation they are not tolerated. The reason is that dominant undertakings could use such practices as a missile to eliminate their competitors,

40 — Case C-500/01, cited in the previous footnote.

41 — As was the case in Spain, Ireland, Greece and Portugal.

42 — For obvious reasons, Luxembourg.

43 — Paragraph 35 of the judgment in Case C-146/00 *Commission v France* [2001] ECR I-9767.

44 — Van Bael & Bellis, *Competition Law of the European Community*, Kluwer Law, 4th ed., p. 939.

consciously maintaining predatory prices⁴⁵ and, rather than passing them on to their customers, transferring them to other operators, as the appellants in the main proceedings maintain in their written observations.

(c) The access deficit

54. Thus, competition is distorted since the new operators, who are forced to pay the additional charges, have to increase their prices in order to remain profitable, to the detriment of their own competitiveness. Accordingly, the explanation put forward by the German Government at the hearing, to the effect that the situation is beneficial to the other operators, including Arcor, is baseless.

56. Losses arise when the costs of providing new undertakings with the use of the local loop exceed the revenues generated by that task.

57. That shortfall is deeply rooted in the era of the monopoly, when the financial parameters were drawn up by reference to the effort of the end user and the spirit of cooperation precluded excessive charges, which meant that the actual costs of providing the service were not covered.

55. Deutsche Telekom therefore benefits from protectionism contrary to Article 82 EC et seq., which also appears to be endogamous since, as the undertaking has acknowledged in its observations, the Federal Republic of Germany held a stake of 31.7% in its capital, although at the hearing the representative of Firma 01051 Telekom GmbH put that shareholding as high as 43%.⁴⁶

58. However, the view put forward by the German Government and Deutsche Telekom is no longer consistent with Community law, because the turning point is set at 1 January 1998, with the possibility of an extension until 1 January 2000, for the purpose of ensuring, as a transitional measure, that the former monopolies adapt to the new situation and rebalance the prices they charge.

45 — In the judgment in Case C-333/94 P *Tetra Pak v Commission* [1996] ECR I-5951, the Court provided methods for establishing the existence of predatory pricing.

46 — In the judgments in Case C-463/00 *Commission v Spain* [2003] ECR I-4581 and Joined Cases C-463/04 and C-464/04 *Federconsumatori and Others* [2007] ECR I-10419, the Court stated that 'it is undeniable that, depending on the circumstances, certain concerns may justify the retention by Member States of a degree of influence within undertakings that were initially public and subsequently privatised, where those undertakings are active in fields involving the provision of services in the public interest or strategic services'.

59. That may be deduced from Commission Recommendation 98/322/EC of 8 April

1998,⁴⁷ and from its predecessor, the Communication of 27 November 1996.⁴⁸

Article 4c does not preclude continued compensation for those losses.

60. The reason is clear. The distinction between interconnection charges and universal service charges would become blurred if other charges were permitted as an alternative to the rebalancing of tariffs, which specifically promotes the abolition of barriers to carrier pre-selection and the removal of any deficit.

63. Clearly, if Community law proscribes such losses then the suggestion that they may be neutralised by compensating for them in that way amounts to perpetuating them.⁴⁹

(d) Charges additional to connection charges: an ephemeral measure

64. That gives rise to the need to connect the adjunct and the principal to identical outcomes,⁵⁰ from which it follows that if a debt is cleared then so are its consequences.

61. The arguments of Germany and Deutsche Telekom, to the effect that the Directives concerned do not preclude such financing, are without foundation.

65. Like a hypochondriac,⁵¹ Deutsche Telekom complains about an historical shortfall for which, in my opinion, it alone is responsible.

62. I must draw attention to the contradiction between asserting, on the one hand, that Article 4c of Directive 90/388 prohibits charges below the actual cost of providing the service and, on the other hand, that

66. I agree with all those who have participated in the preliminary-ruling proceedings that the losses arising from the local loop in 2003 are caused by the practices of the dominant operator, since I see no obstacle at all which would have prevented it from compensating for those losses by increasing its prices.

47 — On interconnection in a liberalised telecommunications market (Part 2 — Accounting separation and cost accounting) (OJ 1998 L 141, p. 6).

48 — Communication from the Commission of 27 November 1996 on Assessment Criteria for National Schemes for the Costing and Financing of Universal Service in telecommunications and Guidelines for the Member States on Operation of such Schemes (COM(96) 608).

49 — As Firma 01051 Telecom GmbH asserts in its observations.

50 — *Sublato principali, tollitur accessorium*.

51 — In 'The Hypochondriac', *The Miser and Other Plays*, translated by J. Wood and D. Coward, Penguin Classics, London, 2000, Molière recounts in a grotesque style the misfortunes of the hypochondriac Argan, slave to fictitious illnesses, who tries to marry his daughter Angélique to the son of a doctor because that relationship would guarantee him lifelong medical care.

67. I am surprised by the revealing arguments of Deutsche Telekom, to the effect that the guidance set out in the judgment in *Commission v Spain*⁵² cannot be extrapolated to the present case because, in the former case, liability for the financial shortfall was apportioned between the telecommunications organisation and the national authorities, a situation which, in the opinion of Deutsche Telekom, is not the same as ‘a deficit attributable solely to the undertaking’.⁵³

68. The Court ruled that Spain had infringed those Directives as a result of the strict price caps set by the regulatory authority. However, in my opinion, although there is some latitude, it must be borne in mind that competition between undertakings is also damaged by additional charges created to sustain the capital of one of those undertakings.

69. Where the financing of universal service is solely cost-orientated, connection to the local loop, the ultimate beneficiary of which is the customer concerned, is subsidised by that beneficiary through the subscriber line charge and only if the pre-existing operator had difficulties rebalancing its tariffs, which did not occur in the present case, would it make sense to value the deficit⁵⁴ and compensate for it, although obviously not when the losses are the result of the operator’s own business strategy.

70. In line with the Commission’s assertion that the additional charges designed to cover the connection costs do not constitute payment for the interconnection services, I agree with the view that, in a sphere not encumbered by legislative obstacles, the addition of those charges becomes a veiled financing mechanism similar to State aid,⁵⁵ which Community law prohibits.

71. Action must be taken against any unjustified charges arising from universal service obligations, and they must be corrected using fair allocation systems.

72. That rule is not absolutely rigid because case-law⁵⁶ excludes from the scope of Article 87(1) EC certain administrative interventions as consideration for obligatory public service benefits⁵⁷ when they do

52 — Case C-500/01.

53 — At the hearing, the German Government emphasised that, since December 1997, Deutsche Telekom has been free to rebalance its prices.

54 — Annex I to Commission Recommendation 98/195/EC of 8 January 1998 on interconnection in a liberalised telecommunications market (Part I — Interconnection pricing) (OJ 1998 L 73, p. 42).

55 — In Case 30/59 *Steenkolenmijnen in Limburg v High Authority* [1961] ECR I), the Court gave a wide definition of aid on the grounds that, in addition to positive benefits such as subsidies, it also embraces other benefits which, in various forms, mitigate the charges which are normally included in the budget of an undertaking. In that connection, Community law prohibits benefits which, in any way, favour an undertaking directly or indirectly or are regarded as an economic advantage which the beneficiary company would not have obtained under normal market conditions (judgments in Case C-39/94 *SFEI and Others* [1996] ECR I-3547, paragraph 60, and Case C-342/96 *Spain v Commission* [1999] ECR I-2459, paragraph 41).

56 — See, with regard to the public service of transport, Case C-280/00 *Almark Trans and Regierungspräsidium Magdeburg* [2003] ECR I-7747; with regard to compensation for the collection and disposal of waste oils, Case C-240/83 *ADBHU* [1985] ECR 531; and, with regard to non-assessment to the tax on direct sales imposed on pharmaceutical laboratories where that tax corresponds to the additional costs actually incurred by wholesale distributors in discharging their public service obligations, Case C-53/00 *Ferring* [2001] ECR I-9067.

57 — A concept more common in legal traditions such as those of France and Spain than in the legal traditions of English-speaking countries.

not improve the position of the undertakings concerned.

73. However, extreme care must be taken not to upset competitors and, to that end, in the field of telecommunications, Article 4c of Directive 90/388 provided for Member States to share those uneconomic effects through supplementary charges or a universal service fund, provided that it was 'necessary'.

74. Naturally, that indeterminate legal concept may be supplemented only by regulatory measures which prohibit tariff rebalancing in respect of the cost of the local loop, since, without such obstacles, those additional charges would lack justification.⁵⁸

75. The need to cover losses is also referred to in Article 5(1) and (3) of Directive 97/33, which make clear the importance of calculating the contributions by reference to comparable amounts,⁵⁹ based exclusively on the direct costs of providing the service. That is different to the situation underlying the main proceedings, which involves approved charges imposed on each undertaking without taking account of the overall situation.

58 — Commission Recommendation 98/195/EC is absolutely clear in that regard.

59 — Which of itself entails specifying the individual contributions which correspond to undertakings operating in the telecommunications market.

76. The final link in the chain is contained in Article 13(1)(a) and (b) of the Universal Service Directive, from which it is clear that the solutions are the use of public funds or a common compensation fund to which all providers contribute, with which the notion of special payments between undertakings is also incompatible.

77. Accordingly, any measure aimed at minimising the required rebalancing of tariffs is not compatible with Community law. That fosters the responsibility of the Member States to set tariffs,⁶⁰ a task which, should the case arise, they must perform transparently, without collusion, and for the purposes of compensation.

78. In an open market such as the telecommunications market, particular importance is attached to transparency⁶¹ because of the requirement of public interest and the need to ensure equality between operators, vital requirements which may not be derogated from without justification.

79. In the light of all of those considerations, it is appropriate for the Court, in reply

60 — The third recital in the preamble to Commission Recommendation 98/195/EC observes pertinently that the setting of interconnection tariffs is the responsibility of the Member States, in accordance with the principle of subsidiarity.

61 — It is clear from the gradual strengthening of the principle of transparency in case-law that it is an unwritten source of Community law. See the judgments in Case C-87/94 *Commission v Belgium* [1996] ECR I-2043, and Case C-275/98 *Unitron Scandinavia and 3-S* [1999] ECR I-8291.

to the first question referred for a preliminary ruling, to declare that the Competition and Interconnection Directives preclude a rule, such as the one laid down in German law, under which the dominant undertaking may be compensated for losses by contributions additional to the interconnection costs, which are not calculated exclusively by reference to the costs of the service.

B — *The second question*

80. Having replied to the first question, it is necessary to dispel the uncertainties of the referring court regarding whether it is appropriate to apply the directives concerned in preference to the conflicting national provisions.

81. It is essential to hold up the fundamental principle of the primacy of Community law and to question, in accordance with the case-law of the Court, the application of those provisions, thereby eliminating the conceptual confusion which distorts a crystal-clear view of the situation.

1. Total primacy

82. The uniformity of Community law requires that its primary and secondary provisions must have the same meaning, the same compulsory application, and the

same subject-matter in all the Member States, attributes which would be impossible to attain without the absolute primacy of Community law.⁶²

83. However, that absoluteness is weakened if the indivisibility or unconditional nature of the primacy of Community law is called into question, overlooking the fact that the principle concerns Community law as a whole and applies to all provisions of national law.

84. In that connection, at the dawn of the European Community, the Court of Justice held that⁶³ ‘the law stemming from the Treaty ... could not ... be overridden by domestic legal provisions, however framed’ and that ‘the provisions of Community law take precedence over any conflicting national provision’, from which it follows that primacy extends without exceptions to the constitutions of the Member States.

85. Moreover, in the second opinion in *Pfeiffer*,⁶⁴ I disagreed with those who claimed that primacy may be attributed only to primary Community law or, at the very most, to regulations, a distinction which must be branded artificial and inaccurate.

62 — Simon, D., *Le système juridique communautaire*, 2nd Ed, Presses Universitaires de France, Paris, 1998, p. 284.

63 — Case 6/64 *Costa v ENEL* [1964] ECR 1141.

64 — Joined Cases C-397/01 to C-403/01 *Pfeiffer and Others* [2004] ECR I-8835. At point 42 of the Opinion of 27 April 2004, I analysed the judgment in *Simmenthal*, in which the Court confirmed the primacy of both the Treaty and the directly applicable measures of the institutions, and I took the view that when a Community provision precludes a provision of a Member State, the principle of primacy established nearly 40 years ago must be reiterated, irrespective of the Community source: the Treaty, a regulation or a directive.

2. The direct effects of the Competition and Interconnection Directives

86. The Court began devising the theory of direct effect in *Van Gend & Loos*.⁶⁵ The Court extended the theory to directives in *Van Duyn*,⁶⁶ with regard to the rights directives confer on individuals,⁶⁷ and systematised it in *Ratti*⁶⁸ and *Becker*.⁶⁹

87. The Court wisely placed the emphasis on the function of a directive, holding that, in order to be relied on, it must be unconditional and sufficiently precise,⁷⁰ and that no measures must have been adopted within the prescribed period or the national legislation must be incompatible as a result of defective or inadequate transposition.⁷¹

65 — Case 26/62 [1963] ECR 1.

66 — Case 41/74 [1974] ECR 1337.

67 — The Court confirmed that aspect in the judgments in Case 67/74 *Bonignore* [1975] ECR 297; Case 36/75 *Rutili* [1975] ECR 1219; Case 48/75 *Royer* [1976] ECR 497; Case 30/77 *Bouchereau* [1977] ECR 1999; Case 118/75 *Watson and Belmann* [1976] ECR 1185; Case 8/77 *Sagulo and Others* [1977] ECR 1495; and Case 157/79 *Pieck* [1980] ECR 2171.

68 — Case 148/78 [1979] ECR 1629.

69 — Case 8/81 [1982] ECR 53.

70 — Wathelet, M., 'Du concept de l'effet direct à celui de l'invocabilité au regard de la jurisprudence récente de la Cour de Justice', *A true European Law. Essays for Judge David Edward*, Ed. Mark Hoskins & William Robinson, Oxford and Portland, Oregon, 2003, p. 370, maintains that the requirement that a directive must be precise and unconditional needs to be satisfied only where, by relying on the Community provision, the intention is to replace the national provision, but not where the aim is merely to exclude it, despite the fact that the Court has held that the requirement must be satisfied in both cases.

71 — Judgments in Case 103/88 *Fratelli Costanzo* [1989] ECR 1839, and Case C-319/97 *Kortas* [1999] ECR I-3143.

88. Accordingly, individuals are able to strengthen their legal rights, while the effectiveness of Community law is protected and is not impaired by any failure to implement a directive or by its incorrect transposition.

89. Those factors combined create the framework for the argument in support of the direct application of Article 4c of Directive 90/388 and Article 12(7) of Directive 97/33, with which Paragraph 43(6) of the TKG of 1996 is incompatible.⁷²

90. When it is not possible to interpret national law in a manner consistent with Community law, requiring judicial action in order to achieve harmony means that the fine line between legal creation and interpretation becomes blurred.⁷³

91. It is clear from the disputed provisions that it was illegal to impose the additional connection cost contribution in Germany after 1 January 1998 (Article 4c of Directive 90/388), in accordance with the cost orientation rule (Articles 7(2) and 12(7) of Directive 97/33).

72 — In that regard I agree with the order for reference (paragraph 44 et seq.) which certainly does not appear to call into question the fact that those directives create precise and unconditional rights.

73 — Emmert, F., 'Les jeux sont faits: rien ne va plus ou une nouvelle occasion perdue par la CJCE.', *Revue trimestrielle de droit européen*, No 1, (1995), p. 17.

92. The present case does not concern abstract principles but rather specific legislative provisions which confer on telecommunications operators the right to include only the costs of connection to the local loop in the interconnection charge.

93. Furthermore, the legal proposition in those provisions is founded on the principle of free competition,⁷⁴ which the Court has held⁷⁵ is capable of creating directly effective rights, including in (horizontal) relations between individuals, which the national courts are responsible for safeguarding.

94. The specific definition of the concept of ‘cost orientation for tariffs’ is held up as a mirror when the final price is set, although it does not cloud the substance of the right concerned.

95. The forceful argument put forward by the German Government and Deutsche Telekom in an attempt to conceal the fact that those provisions are precise is vitiated by serious confusion in its drafting, which is dispelled by the realisation that it contains the error of likening the task of ‘incorporating’ an indeterminate concept to that of ‘implementing’ a directive.

96. Accordingly, the national regulatory authority sets the amount of the charge using a legal basis which is so precise and unconditional (the prohibition of unnecessary additional charges to cover the cost) that it does not need to be supplemented by any further Community or national legislation.

97. In any event, it must be borne in mind, as Advocate General Mázak points out in his Opinion⁷⁶ in *Palacios de la Villa*,⁷⁷ that, in accordance with case-law, the fact that provisions of a directive are subject to exceptions or provide for justifications does not mean that the directive lacks direct effect.

3. Vertical, horizontal and triangular relationships

98. The doctrine of direct effect operates on a vertical, one-way plane (from an individual to the State), in that traffic in the opposite direction (reverse vertical relationships)⁷⁸ and perpendicular routes which would enable a directive to be relied on between individuals (horizontal direct effect) are both prohibited.⁷⁹

74 — Article 82 EC.

75 — In settled case-law, as is clear from the judgments in Cases C-155/73 *Sacchi* [1974] ECR 409; Case C-127/73 *BRT v SABAM* [1974] ECR 51; Case C-179/90 *Merci Convenzionali porto di Genova* [1991] ECR I-5889; Case C-282/95 P *Guérin automobiles v Commission* [1997] ECR I-1503; Case C-242/95 *GT-Link* [1997] ECR I-4449; Case C-22/98 *Becu and Others* [1999] ECR I-5665; Case C-258/98 *Carra and Others* [2000] ECR I-4217; and Case C-99/02 *Commission v Italy* [2004] ECR I-3353.

76 — In which he referred to paragraph 105 of the judgment in *Pfeiffer and Others*. In the second opinion in *Pfeiffer* (paragraph 36), I emphasised that it is important not to undo the progress made in relation to direct effect.

77 — Case C-411/05 *Félix Palacios de la Villa v Cortefiel Servicios SA* [2007] ECR I-8531.

78 — Joined Cases C-74/95 and C-129/95 *X* [1996] ECR I-6609.

79 — Case 152/84 *Marshall I* [1986] ECR 723.

99. According to the Court, extending the doctrine of the direct effect of directives to the sphere of relations between individuals would be tantamount to conferring on the Community a power to enact obligations for individuals, whereas that competence is limited to the adoption of regulations or decisions.⁸⁰

100. Nevertheless, time has not succeeded in silencing the calls for horizontal direct effect to be recognised. Advocate General Lenz⁸¹ made such a call in the opinion in *Faccini Dori*,⁸² relying in turn on the arguments previously put forward by advocates general Van Gerven⁸³ and Jacobs.⁸⁴

101. The feeling that an opportunity has been lost appears to hover over those writers,⁸⁵ despite the fact that the Court has not hesitated to apply the doctrine⁸⁶ where a directive affects the rights of individuals who are not part of the vertical relation-

ship, giving rise to the theory of triangular relationships.⁸⁷

102. However, in *Wells*,⁸⁸ a case which concerned the environment,⁸⁹ a field in which the interests at stake are vague, the Court provided firmer guidance. Despite pointing out that 'an individual may not rely on a directive against a Member State where it is a matter of a State obligation directly linked to the performance of another obligation falling, pursuant to that directive, on a third party' (paragraph 56), the Court went on to state, for the first time, that 'adverse repercussions on the rights of third parties, even if the repercussions are certain, do not justify preventing an individual from invoking the provisions of a directive against the Member State concerned' (paragraph 57).

4. The finding that the TKG is incompatible with Community law

103. There is no room for disharmony in the repertoire of Community case-law, although,

80 — Judgment in Case C-192/94 *El Corte Inglés* [1996] ECR I-1281.

81 — Advocate General Lenz called for the law based on the Treaty to develop in the interests of the uniform, effective application of Community law so as to extend the doctrine to relationships between private individuals and thus respond to the legitimate expectations nurtured by citizens of the Union.

82 — Case C-91/92 *Faccini Dori* [1994] ECR I-3325.

83 — Opinion in Case C-271/91 *Marshall II* [1993] ECR I-4367.

84 — Opinion in Case C-316/93 *Vaneetveld* [1994] ECR I-763.

85 — In addition to the work cited by Emmert, F., that view is also put forward in Tridimas, T., 'Horizontal effect of directives: a missed opportunity?', *European Law Review*, No 6 (1994), pp. 621 to 636.

86 — I made that point in paragraph 41 of my second opinion in *Pfeiffer and Others*.

87 — In the field of public procurement, see the judgment in *Fratelli Costanzo*; on the marketing of proprietary medicinal products, see Case C-201/94 *Smith & Nephew and Primecrown* [1996] ECR I-5819; and, with regard to technical regulations, see Case C-194/94 *CIA Security International* [1996] ECR I-2201 and Case C-443/98 *Unilever* [2000] ECR I-7535.

88 — Case C-201/02 *Wells* [2004] ECR I-723.

89 — Although the Court had already confirmed the application of indirect horizontal effect to the field of the environment in Case C-435/97 *World Wildlife Fund and Others* [1999] ECR I-5613.

in cases such as the present one, it will yield to the melody of triangular relationships.

104. I see no grounds precluding such a finding. It is important to recall that the factual and legal relationships underlying the present references for a preliminary ruling involve private persons (Arcor, TELE2 and Telekom GmbH) who have taken action not against another private person but against the State (Regulierungsbehörde für Telekommunikation und Post).

105. Therein lies the essential difference between this and other cases, particularly *Telefónica O2 Czech Republic*, which concerned a dispute between two telecommunications operators over access to the network, resulting in civil proceedings between them, while the regulatory authority was confined to the role of mediator.

106. However, in the dispute which gave rise to the present case, there is no latitude for freedom of action or, therefore, for private law when it comes to setting the charge in question because, in accordance with Community and German law, exclusive competence in that regard rests with the State.

107. In those circumstances, the setting of the additional charge is independent of the prior approval of the interconnection charge (which certainly gave rise to a contractual

relationship) and it acquires substantive connotations such that it becomes a separate problem.

108. There is no reason for the Bundesverwaltungsgericht to be disheartened because the right invoked in the present case is not one which is free of any link to the public authorities and liable to cause damage to another individual, as occurred in *Busseni*;⁹⁰ instead, like in *Wells* and *Fratelli Constanzo*, the damage flows from the action of the State.

109. Accordingly, the dominant undertaking suffers no horizontal direct effects or genuine damage. Moreover, the right that undertaking seeks to enforce was created by a provision which is contrary to Community law and its position is affected only indirectly, in that it is unable to impose unlawful charges.

110. An affirmative reply to the second question appears unavoidable in the light of the primacy of Community law, pursuant to which the national court must guarantee to individuals the rights flowing from directives where national law precludes respect for those rights.

90 — Case C-221/88 *Busseni* [1990] ECR I-495.

VI — Conclusion

111. In the light of the foregoing considerations, I propose that the Court should reply to the questions referred for a preliminary ruling by the Bundesverwaltungsgericht, declaring that:

- (1) Article 4c of Commission Directive 90/388/EEC of 28 June 1990 on competition in the markets for telecommunications services and Articles 7(2) and (4) and 12(7) of Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision preclude a national regulatory authority from requiring the operator of a network interconnected with a public subscriber network to pay a contribution to the dominant operator to compensate that operator for the deficit incurred as a result of providing the local loop.
- (2) The national court must take into account the incompatibility with Community law of a provision of national law in proceedings in which the dominant operator seeks compliance with the aforementioned requirement.

11:Sky Annex 2 – ECJ Ruling

NON-CONFIDENTIAL

JUDGMENT OF THE COURT (Grand Chamber)

17 July 2008 (*)

(Telecommunications – Networks and services – Tariff rebalancing – Article 4c of Directive 90/388/EEC – Article 7(2) of Directive 97/33/EC – Article 12(7) of Directive 98/61/EC – Regulatory authority – Direct effect of directives – Triangular situation)

In Joined Cases C-152/07 to C-154/07,

THREE REFERENCES for a preliminary ruling under Article 234 EC from the Bundesverwaltungsgericht (Germany), made by decisions of 13 December 2006, received at the Court on 20 March 2007, in the proceedings

Arcor AG & Co. KG (C-152/07),

Communication Services TELE2 GmbH (C-153/07),

Firma 01051 Telekom GmbH (C-154/07)

v

Bundesrepublik Deutschland,

intervening party:

Deutsche Telekom AG,

THE COURT (Grand Chamber),

composed of V. Skouris, President, P. Jann, C.W.A. Timmermans, A. Rosas, K. Lenaerts and L. Bay Larsen, Presidents of Chambers, K. Schiemann, J. Makarczyk, P. Kūris (Rapporteur), E. Juhász, A. Ó Caoimh, P. Lindh and J.-C. Bonichot, Judges,

Advocate General: D. Ruiz-Jarabo Colomer,

Registrar: K. Sztranc-Sławiczek, Administrator,

having regard to the written procedure and further to the hearing on 19 February 2008,

after considering the observations submitted on behalf of:

- Arcor AG & Co. KG, by T. Bosch and D. Herrmann, Rechtsanwälte,
- Communication Services TELE2 GmbH, by P. Rädler, Rechtsanwalt,
- Firma 01051 Telekom GmbH, by M. Schütze and M. Salevic, Rechtsanwälte,
- the German Government, by J. Scherer and J. Hagelberg, Rechtsanwälte,
- Deutsche Telekom AG, by T. Mayen and U. Karpenstein, Rechtsanwälte,
- the United Kingdom Government, by V. Jackson and M. Hoskins, acting as Agents,
- the Commission of the European Communities, by G. Braun and K. Mojzesowicz, acting as Agents,

after hearing the Opinion of the Advocate General at the sitting on 1 April 2008,
gives the following

Judgment

- 1 These references for a preliminary ruling relate to the interpretation of, first, Commission Directive 90/388/EEC of 28 June 1990 on competition in the markets for telecommunications services (OJ 1990 L 192, p. 10), as amended by Commission Directive 96/19/EC of 13 March 1996 (OJ 1996 L 74, p. 13) ('Directive 90/388'), and, secondly, Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of open network provision (ONP) (OJ 1997 L 199, p. 32), as amended by Directive 98/61/EC of the European Parliament and of the Council of 24 September 1998 (OJ 1998 L 268, p. 37) ('Directive 97/33').
- 2 The references were made in three sets of appeal proceedings on a point of law ('Revision') in which the parties were (i) Arcor AG & Co. KG ('Arcor'), (ii) Communication Services TELE2 GmbH ('TELE2') and (iii) Firma 01051 Telekom GmbH ('01051 Telekom'), all operators of public telecommunications networks, on the one hand, the Bundesrepublik Deutschland, represented by the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (Federal Agency for Electricity, Gas, Telecommunications, Post and Rail Networks; 'the regulatory authority'), on the other, and, as an intervening party, Deutsche Telekom AG ('Deutsche Telekom'), and which concerned a decision of the regulatory authority of 29 April 2003 approving, as from 1 July 2003, a connection charge of EUR 0.004 per minute in respect of call charges for the provision of calls originating in Deutsche Telekom's national telephone network to an interconnection partner operating as a carrier for local calls ('the Telekom-B2 (local) facility').

Legal context

Community legislation

- 3 Recital 5 in the preamble to Directive 96/19 states:

'... In order to allow telecommunications organisations to complete their preparation for competition and in particular to pursue the necessary rebalancing of tariffs, Member States may continue the current special and exclusive rights regarding the provision of voice telephony until 1 January 1998. Member States with less developed networks or with very small networks must be eligible for a temporary exception where this is warranted by the need to carry out structural adjustments and strictly only to the extent necessary for those adjustments. Such Member States should be granted, upon request, an additional transitional period respectively of up to five and of up to two years, provided it is necessary to complete the necessary structural adjustments. The Member States which may request such an exception are Spain, Ireland, Greece and Portugal with regard to less developed networks and Luxembourg with regard to very small networks. ...'
- 4 Recital 20 in the preamble to Directive 96/19 states:

'... Member States should phase out as rapidly as possible all unjustified restrictions on tariff rebalancing by the telecommunications organisations and in particular those preventing the adaptation of rates which are not in line with costs and increase the burden of universal service provision. ...'
- 5 The third paragraph of Article 4c of Directive 90/388, inserted by Article 1(6) of Directive 96/19, provides:

'Member States shall allow their telecommunications organisations to rebalance tariffs taking account of specific market conditions and of the need to ensure the affordability of a universal service, and, in particular, Member States shall allow them to adapt current rates which are not in line with costs and

which increase the burden of universal service provision, in order to achieve tariffs based on real costs. Where such rebalancing cannot be completed before 1 January 1998 the Member States concerned shall report to the Commission on the future phasing-out of the remaining tariff imbalances. This shall include a detailed timetable for implementation.’

6 Article 7(2) of Directive 97/33 is worded as follows:

‘Charges for interconnection shall follow the principles of transparency and cost orientation. The burden of proof that charges are derived from actual costs including a reasonable rate of return on investment shall lie with the organisation providing interconnection to its facilities. National regulatory authorities may request an organisation to provide full justification for its interconnection charges, and where appropriate shall require charges to be adjusted. This paragraph shall also apply to organisations set out in Part 3 of Annex I which have been notified by national regulatory authorities as having significant market power on the national market for interconnection.’

7 Article 12(7) of Directive 97/33, added by Directive 98/61, states:

‘National regulatory authorities shall require at least organisations operating public telecommunications networks as set out in Part 1 of Annex I and notified by national regulatory authorities as organisations having significant market power, to enable their subscribers, including those using ISDN [integrated services digital network], to access the switched services of any interconnected provider of publicly available telecommunications services. For this purpose facilities shall be in place by 1 January 2000 at the latest or, in those countries which have been granted an additional transition period, as soon as possible thereafter, but no later than two years after any later date agreed for full liberalisation of voice telephony services, which allow the subscriber to choose these services by means of preselection with a facility to override any preselected choice on a call-by-call basis by dialling a short prefix.

National regulatory authorities shall ensure that pricing for interconnection related to the provision of this facility is cost-orientated and that direct charges to consumers, if any, do not act as a disincentive for the use of this facility.’

National legislation

8 Paragraph 43(6) of the Law on telecommunications (Telekommunikationsgesetz) of 25 July 1996 (BGBl. 1996 I, p. 1120; the ‘TKG 1996’), as amended by the First Law amending the Law on telecommunications (Erste Gesetz zur Änderung des Telekommunikationsgesetzes) of 21 October 2002 (BGBl. 2002 I, p. 4186), provides:

‘Operators of public telecommunications networks in a dominant position within the meaning of Paragraph 19 of the Law on restriction of competition [(Gesetz gegen Wettbewerbsbeschränkungen)] must, pursuant to the third sentence, ensure on their networks that each user has the opportunity to choose telecommunications services of all operators of public telecommunications networks which are directly interconnected, either by selecting the carrier on an individual basis by dialling a given prefix or by means of carrier preselection, provided however, in the latter case, that there is the facility on each call to override the preselected choice by dialling the prefix of another carrier. The user must also be able to introduce different presettings for local and long-distance calls. In the implementation of the interconnection of networks which must be carried out to meet that obligation, it must be ensured that, when decisions are taken pursuant to the third, fourth and sixth parts of this Law, there is no disincentive to effective investment in infrastructure equipment to guarantee stronger competition in the long term and it must also be ensured that the existing network is used effectively through interconnection at the lowest level. In doing so, it is necessary in particular to ensure that the network operator [carrier] chosen by the user bears a reasonable share of the costs of the local loop provided to the user. The regulatory authority may suspend, in whole or in part, the obligation laid down in the first sentence, for as long as and to the extent that this is technically justified. As regards the operators of mobile telephone networks, the obligation to facilitate carrier selection or preselection shall be suspended. That obligation will be reconsidered on transposition of the requirements of Article 19(2) of Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal

service and users' rights relating to electronic communications networks and services [Universal Service Directive] (OJ 2002 L 108, p. 51).'

The dispute in the main proceedings and the questions referred for a preliminary ruling

- 9 It is clear from the orders for reference that, by decision of 29 April 2003, upon application by Deutsche Telekom, the regulatory authority approved, as from 1 July 2003 until 30 November 2003, a connection charge of EUR 0.004 per minute in respect of call charges for the Telekom-B2 (local) facility. That approval extended to all the interconnections agreed or ordered up to 7 May 2003. The ground for that decision, taken on the basis of the fourth sentence of Paragraph 43(6) of the TKG 1996, was the fact that the costs of the local loop would not have been covered by revenue derived from provision of the loop, with the result that there would have been a deficit.
- 10 The regulatory authority, by decision of 23 September 2003, revoked the decision of 29 April 2003, on the ground that Deutsche Telekom no longer had any connection cost deficit, since an increase in the price paid by the end-user for provision of the local loop had been approved in the interim.
- 11 Arcor, TELE2 and 01051 Telekom each brought an action against the decision of 29 April 2003 before the Verwaltungsgericht Köln (Administrative Court, Cologne).
- 12 By judgments of 3 November 2005, that court annulled that decision.
- 13 Appeals on a point of law ('Revision') against those judgments were brought before the Bundesverwaltungsgericht (Federal Administrative Court) by all the parties to the main proceedings in Case C-152/07 and by the defendants and interveners in the main proceedings in Cases C-153/07 and C-154/07.
- 14 In those circumstances, the Bundesverwaltungsgericht, in the three cases in the main proceedings, decided to stay proceedings and to refer to the Court the following questions for a preliminary ruling:
- '(1) Are Directive 90/388 ... and Directive 97/33 ... to be interpreted as precluding the national regulatory authority from requiring, in 2003, the operator of a network interconnected with a public telecommunications subscriber network to pay a contribution to the market-dominant operator of the subscriber network in order to compensate that operator for the deficit incurred as a result of providing the local loop?
- (2) If the answer to the first question is in the affirmative, is the incompatibility with Community law of such a requirement, which is a provision of domestic law, to be taken into account by the national court in proceedings concerning the approval of a contribution by the interconnected network operator?'
- 15 By order of 1 June 2007, the President of the Court ordered the joinder of Cases C-152/07 to C-154/07 for the purposes of the written and oral procedure and the judgment.

The questions referred for a preliminary ruling

The first question

- 16 By its first question, the referring court essentially asks whether Directives 90/388 and 97/33 preclude a national regulatory authority from being able to require an operator of a network interconnected with a public network to pay to the market-dominant subscriber network operator a charge intended to compensate the latter operator for the deficit incurred as a result of providing the local loop.
- 17 It is undisputed that the connection charge at issue in the main proceedings, imposed pursuant to the fourth sentence of Paragraph 43(6) of the TKG 1996, is separate from and paid in addition to the interconnection charge, which is based on another provision of the TKG 1996, namely Paragraph 39. The principle of that connection charge was introduced when Directive 98/61 was transposed into

German law. The amount of the connection charge is calculated by reference to the deficit incurred by Deutsche Telekom as a result of the fact that revenue generated by provision of the local loop does not cover the costs associated with the effective provision of that loop.

- 18 According to the referring court, the obligation to contribute to the costs of the local loop falls on the interconnected network operator (carrier) chosen by the subscriber by direct selection or by preselection. That obligation can be seen however as compensation for the deficit arising from the costs of provision of the local loop on the part of Deutsche Telekom, the market-dominant subscriber network operator, and not as consideration for a service provided by Deutsche Telekom to the interconnected network operator.
- 19 The purpose therefore of the connection charge at issue in the main proceedings is to provide additional remuneration in the form of a contribution to the costs of providing the local loop which are not covered by 'customer' charges. The charge is payable solely by the operators of networks which have concluded an interconnection agreement with Deutsche Telekom concerning carrier direct selection or preselection services on the local networks.
- 20 It is clear from Article 12(7) of Directive 97/33 that national regulatory authorities are to ensure that pricing for interconnection related to the provision of voice telephony services, which allow the subscriber to choose those services by means of preselection, with a facility to override any preselected choice on a call-by-call basis by dialling a short prefix, is cost-oriented and that direct charges do not act as a disincentive to the consumer for the use of this facility.
- 21 It is however clear that the connection charge at issue in the main proceedings, which is dependent on the existence of an interconnection agreement in respect of carrier preselection services, is paid by the interconnected network operators and that it comes at a time of increased liberalisation of the telecommunications market.
- 22 It follows that the charge is within the scope of Article 12(7) of Directive 97/33 and must therefore be subject to the same pricing conditions as the interconnection charge *stricto sensu*, namely with due regard to the principle of the cost orientation of tariffs.
- 23 That principle, laid down in Article 7(2) of Directive 97/33, requires that charges be derived from actual costs.
- 24 Consequently, it is clear that Article 12(7) of Directive 97/33 does not allow a national regulatory authority to approve a connection charge the rate of which is not cost-oriented, when it has the same characteristics as an interconnection charge and is levied as a supplement to such a charge.
- 25 Moreover, it is also undisputed that Deutsche Telekom's tariff rebalancing, intended to adapt its rates to actual costs and to bring to an end the form of cross-subsidisation from subscriber line rental fees, as reported by the referring court, consisting in the use of a proportion of the fees paid by end-users for connection services as compensation for the deficit relating to the costs of local loop provision, was initiated in 1996, but was not completed in 2002.
- 26 It is moreover equally uncontested that universal service obligations have not been defined in Germany and have therefore not been imposed on Deutsche Telekom, since the needs to be met by such obligations have been met through normal market forces.
- 27 None the less, to ensure that those needs continue to be met through the forces of the free market, it is necessary to ensure that the rules of competition are maintained and safeguarded.
- 28 It is evident, first, that the existence of a connection charge such as that at issue in the main proceedings makes it possible in fact for the deficit of the market-dominant subscriber network operator to be funded by the subscribers of the other operators of interconnected networks and, secondly, that such funding, which is separate from any funding of universal service obligations, is contrary to the principle of free competition.

- 29 Contrary to what is contended by Deutsche Telekom, it is not obvious that the charge serves to prevent distortions of competition between operators which have invested in a telecommunications network and other operators which are new entrants to the local market. It is not disputed that the effect of the connection charge at issue in the main proceedings is only to protect the market-dominant subscriber network operator by enabling it to maintain a cost for the calls of its own subscribers which is below the actual cost and, accordingly, to fund its own deficit.
- 30 Moreover, although Article 4c of Directive 90/388 does not lay down a period within which the obligation to rebalance tariffs must be fulfilled, the fact remains that several elements of Directive 96/19 indicate that the rebalancing was to be carried out at a sustained rate in order to facilitate the opening of the telecommunications market to competition. Indeed, it is clear from recital 5 in the preamble to Directive 96/19 in conjunction with recital 20 therein, and from Article 4c of Directive 90/388, that the Member States were bound to bring an end to restrictions on rebalancing as soon as possible after the entry into force of Directive 96/19, and at the latest by 1 January 1998 (see Case C-500/01 *Commission v Spain* [2004] ECR I-583, paragraph 32). Failing completion of that rebalancing before 1 January 1998, the Member States were bound to send a report to the Commission on their plans for the phasing-out of the remaining tariff imbalances, that report to contain a detailed timetable for implementation of those plans. That phase was to be completed before 1 January 2000.
- 31 However, it is clear that Paragraph 43(6) of the TKG 1996, in the version taking effect on 1 December 2002, comes after 1 January 2000, the final date for completion of that tariff rebalancing, while the Federal Republic of Germany has not submitted any rebalancing plan to the Commission. In any event, a provision such as that in the fourth sentence of Paragraph 43(6) does not encourage the subscriber network operator in receipt of the connection charge to take steps to eliminate the deficit incurred by adjusting its rates.
- 32 It follows that Directive 90/388 does not allow a national regulatory authority to approve the levy, by the market-dominant subscriber network operator, of a connection charge which is additional to the interconnection charge for the year 2003.
- 33 It follows from all of the foregoing that the answer to the first question must be that Article 12(7) of Directive 97/33 and Article 4c of Directive 90/388, the latter read in conjunction with recitals 5 and 20 in the preamble to Directive 96/19, must be interpreted as precluding a national regulatory authority from requiring an operator of a network interconnected with a public network to pay to the market-dominant subscriber network operator a connection charge which is additional to an interconnection charge and is intended to compensate the latter operator for the deficit incurred as a result of providing the local loop for the year 2003.

The second question

- 34 In the light of the answer given to the first question, an answer must be given to the second question, by which the referring court asks essentially whether, in circumstances such as those of the main proceedings, an individual can rely before that court on Article 4c of Directive 90/388 and Article 12(7) of Directive 97/33.
- 35 It should be recalled that, according to settled case-law, a directive cannot of itself impose obligations on an individual, but can only confer rights. Consequently, an individual may not rely on a directive against a Member State where it is a matter of a State obligation directly linked to the performance of another obligation falling, pursuant to that directive, on a third party (see Case C-201/02 *Wells* [2004] ECR I-723, paragraph 56 and case-law cited).
- 36 On the other hand, mere adverse repercussions on the rights of third parties, even if the repercussions are certain, do not justify preventing an individual from relying on the provisions of a directive against the Member State concerned (see *Wells*, paragraph 57 and case-law cited).
- 37 In the main proceedings, as pointed out by the Advocate General at point 104 of his Opinion, the actions before the referring court have been brought by private persons against the Member State concerned, represented by the national regulatory authority which made the contested decision and has

sole competence to set the rates of both the connection charge at issue in the main proceedings and the interconnection charge to which the former is added.

- 38 It is clear that Deutsche Telekom is a third party in relation to the dispute before the referring court and is capable only of suffering adverse repercussions because it levied the connection charge at issue in the main proceedings and because, if that charge were removed, it would have to increase its own subscribers' rates. Such a removal of benefits cannot be regarded as an obligation falling on a third party pursuant to the directives relied on before the referring court by the appellants in the main proceedings.
- 39 Having regard to the foregoing, the Court must determine whether Article 4c of Directive 90/388 and Article 12(7) of Directive 97/33 fulfil the conditions necessary to produce direct effect.
- 40 It is clear from settled case-law that, whenever the provisions of a directive appear, so far as their subject-matter is concerned, to be unconditional and sufficiently precise, they may be relied upon before the national courts by individuals against the Member State where it has failed to implement the directive correctly (see Joined Cases C-397/01 to C-403/01 *Pfeiffer and Others* [2004] ECR I-8835, paragraph 103 and case-law cited).
- 41 First, the third paragraph of Article 4c of Directive 90/388 satisfies those criteria, given that it is clear that tariff rebalancing must, as a general rule, be completed before 1 January 1998 or at the latest by 1 January 2000, and that that obligation is unconditional.
- 42 Secondly, the same is true of Article 12(7) of Directive 97/33, since that provision defines the restrictions to which charges such as those at issue in the main proceedings are subject.
- 43 Consequently, the provisions of Article 4c of Directive 90/388 and Article 12(7) of Directive 97/33 fulfil all the conditions necessary to produce direct effect.
- 44 It follows from all of the foregoing that the answer to the second question referred must be that Article 4c of Directive 90/388 and Article 12(7) of Directive 97/33 produce direct effect and can be relied on directly before a national court by individuals to challenge a decision of the national regulatory authority.

Costs

- 45 Since these proceedings are, for the parties to the main proceedings, a step in the actions pending before the national court, the decision on costs is a matter for that court. Costs incurred in submitting observations to the Court, other than the costs of those parties, are not recoverable.

On those grounds, the Court (Grand Chamber) hereby rules:

- 1. Article 12(7) of Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of open network provision (ONP), as amended by Directive 98/61/EC of the European Parliament and of the Council of 24 September 1998, and Article 4c of Commission Directive 90/388/EEC of 28 June 1990 on competition in the markets for telecommunications services, as amended by Commission Directive 96/19/EC of 13 March 1996, the latter article read in conjunction with recitals 5 and 20 in the preamble to Directive 96/19, must be interpreted as precluding a national regulatory authority from requiring an operator of a network interconnected with a public network to pay to the market-dominant subscriber network operator a connection charge which is additional to an interconnection charge and is intended to compensate the latter operator for the deficit incurred as a result of providing the local loop for the year 2003.**
- 2. Article 4c of Directive 90/388, as amended by Directive 96/19, and Article 12(7) of Directive 97/33, as amended by Directive 98/61, produce direct effect and can be relied on directly**

before a national court by individuals to challenge a decision of the national regulatory authority.

[Signatures]

* Language of the case: German.