ComReg Webinar

Towards a more sustainable Telecommunications ecosystem

29 April 2022

11:30 – 13:00 IST

Welcome

Commissioner Robert Mourik

Opening
Commissioner Garrett Blaney

Our speakers

Robert Mourik
Chairperson, Commissioner
Commission for Communications
Regulation (ComReg)

Garrett Blaney
Commissioner
Commission for Communications
Regulation (ComReg)

Ilsa Godlovitch
Director, Brussels Office
WIK-Consult

Olga Sihmane
*Group Public Affairs | External Affairs,
Governance and Trust*
Telia Company

Agenda

11:30 – Welcome and opening

11:40 – Overview of ComReg's sustainability activities

12:00 – Environmental impact of ECS, a WIK/Ramboll study

12:20 – Sustainability at Telia Company, an industry perspective

12:40 – Q&A and wrap-up

13:00 – Event end

Sustainability and Telecommunications

Challenges:

⚠ Climate change

⚠ Geopolitical landscape

- Supply chain issues
- Energy prices

Opportunities:

💡 Competitive edge

💡 Stimulus for innovation

💡 De-risking

💡 Lower cost of capital

ComReg's sustainability activities

Commissioner Garrett Blaney

ComReg activities with sustainability focus

- Sustainability focus in our strategy statements:

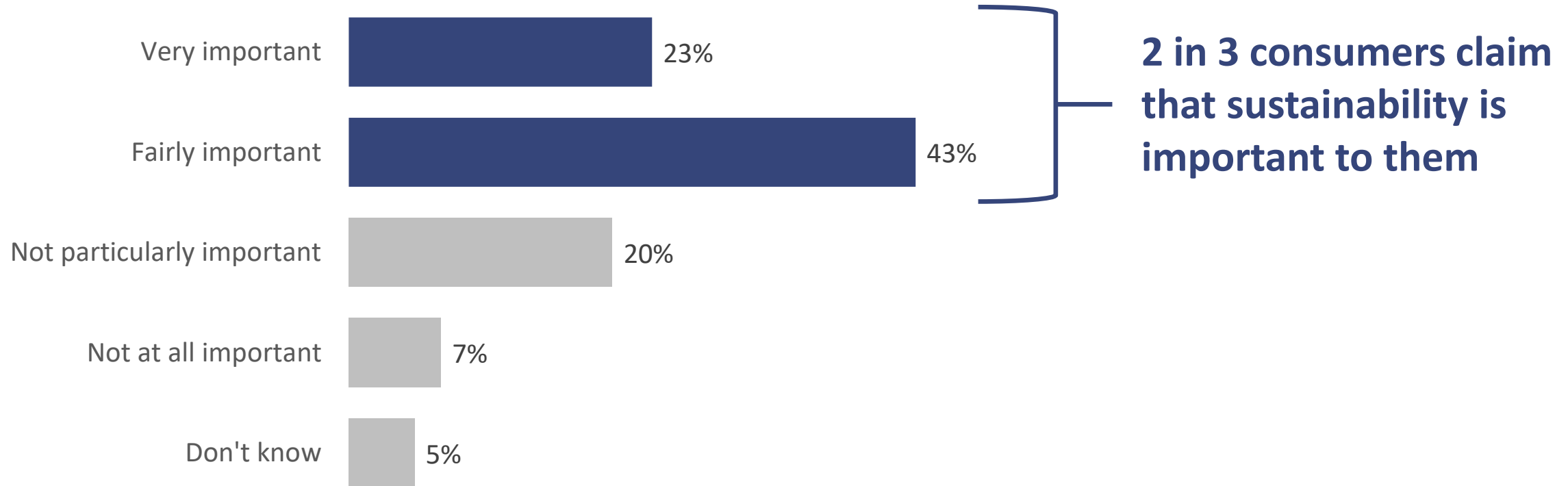| Electronic Communications Strategy Statement	Postal Strategy	Radio Spectrum Management Strategy

- Spectrum awarded for Smart Grids (400 MHz) – enabling reduction in GHG emissions

- Call for Inputs "Connectivity and Decarbonsiation" in 2019
  - ❖ Four use cases: Electricity, Transport, Agriculture, Industry

- Q4 2021 'Confidence and Awareness' consumer survey – sustainability questions

- Networks Operations Unit (NOU) – 2021 launched adaptation/resilience project: *'Climate change impact and adaptation of telecom networks in Ireland'*
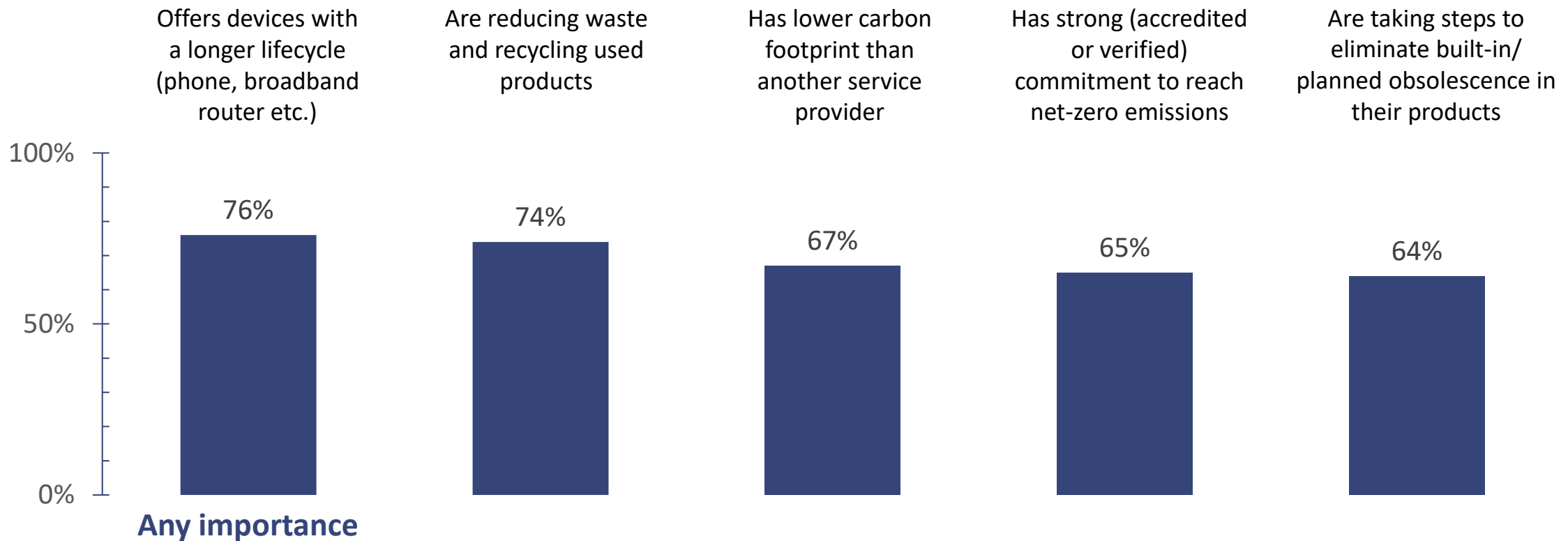
ComReg Consumer Survey Results

We asked 1,000 consumers in Ireland **to what extent is sustainability and the use of environmentally-friendly considerations and processes important to you** when choosing a mobile phone provider?

Very important — 23%

Fairly important — 43%

2 in 3 consumers claim that sustainability is important to them

Not particularly important — 20%

Not at all important — 7%

Don't know — 5%

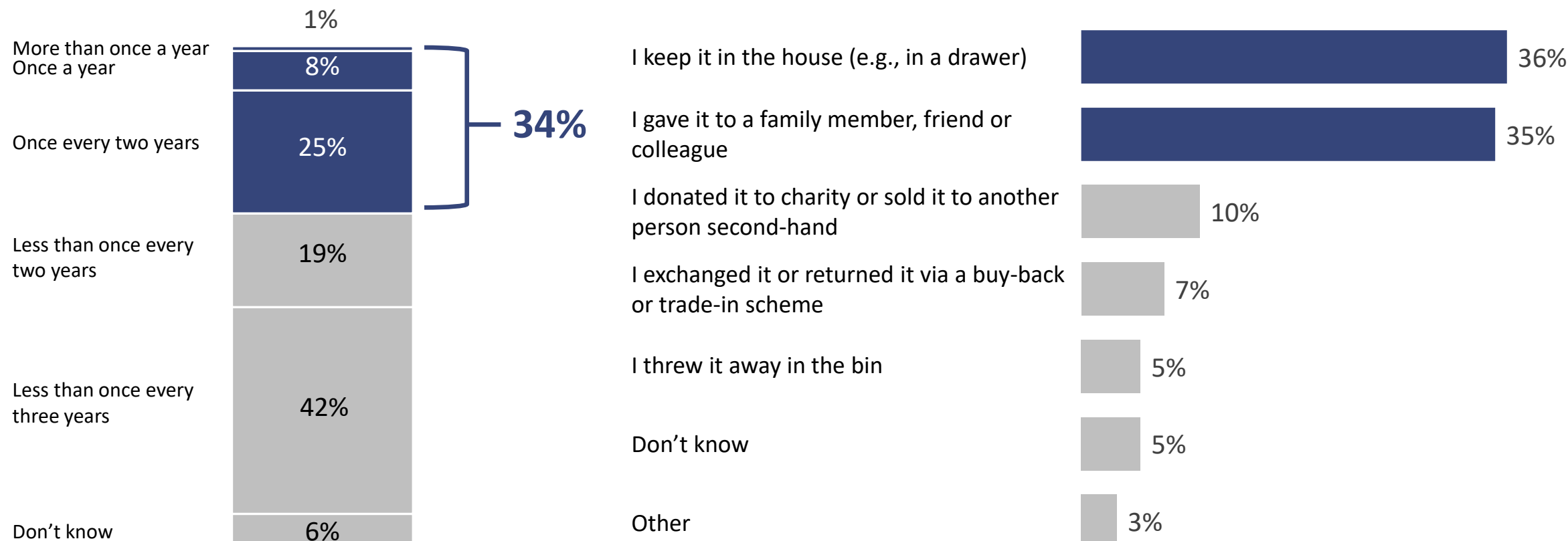All adults 16+ with mobile phone service

ComReg Consumer Survey Results

Importance of service providers' sustainability measures is high; particularly **offering devices with longer life cycle** and **reducing waste**

Offers devices with a longer lifecycle (phone, broadband router etc.)	Are reducing waste and recycling used products	Has lower carbon footprint than another service provider	Has strong (accredited or verified) commitment to reach net-zero emissions	Are taking steps to eliminate built-in/ planned obsolescence in their products
76%	74%	67%	65%	64%

Any importance

Q. To what extent, if at all, is each of the following important to you when choosing between mobile phone service providers?

ComReg Consumer Survey Results

Looking at device lifecycle and waste…**1 in 3 consumers upgrade their mobile phone once every two years or sooner** with **many old phones being kept in drawers** or passed on to family or friends.

More than once a year — 1%

Once a year — 8%

Once every two years — 25%

34%

Less than once every two years — 19%

Less than once every three years — 42%

Don't know — 6%

I keep it in the house (e.g., in a drawer) — 36%

I gave it to a family member, friend or colleague — 35%

I donated it to charity or sold it to another person second-hand — 10%

I exchanged it or returned it via a buy-back or trade-in scheme — 7%

I threw it away in the bin — 5%

Don't know — 5%

Other — 3%

Q. How often do you upgrade your mobile handset or purchase a new mobile handset?
Q. Thinking back to when you last replaced your mobile handset, what do you do with your previous handset?

Body of European Regulators - BEREC

- BEREC Report: *"Assessing BEREC's contribution to limiting the impact of the digital sector on the environment"*

  - o Research into environmental impact of digital, including electronic communications
  - o BEREC not environmental experts but can inform/cooperate with relevant bodies
  - o Case Studies on three regulators, including ComReg
  - o Included external study by WIK/Ramboll

Key Learnings:
- A 'twin transition' is needed, where digitalization and green targets go hand in hand
- Despite the enabling role of digital solutions, the sector should minimize own environmental footprint
- Currently **there is a lack of available data and common methodology**, leaving this difficult to assess

- Future work for BEREC:
  - ➤ Project on indicators to help evaluate sustainability of electronic communication networks & services
  - ➤ Sharing experience and expertise across members, enable national regulators to empower end users

The environmental impact of ECS
A WIK/Ramboll study presented by Ilsa Godlovitch

ENVIRONMENTAL IMPACT OF ELECTRONIC COMMUNICATIONS

STUDY PRESENTATION

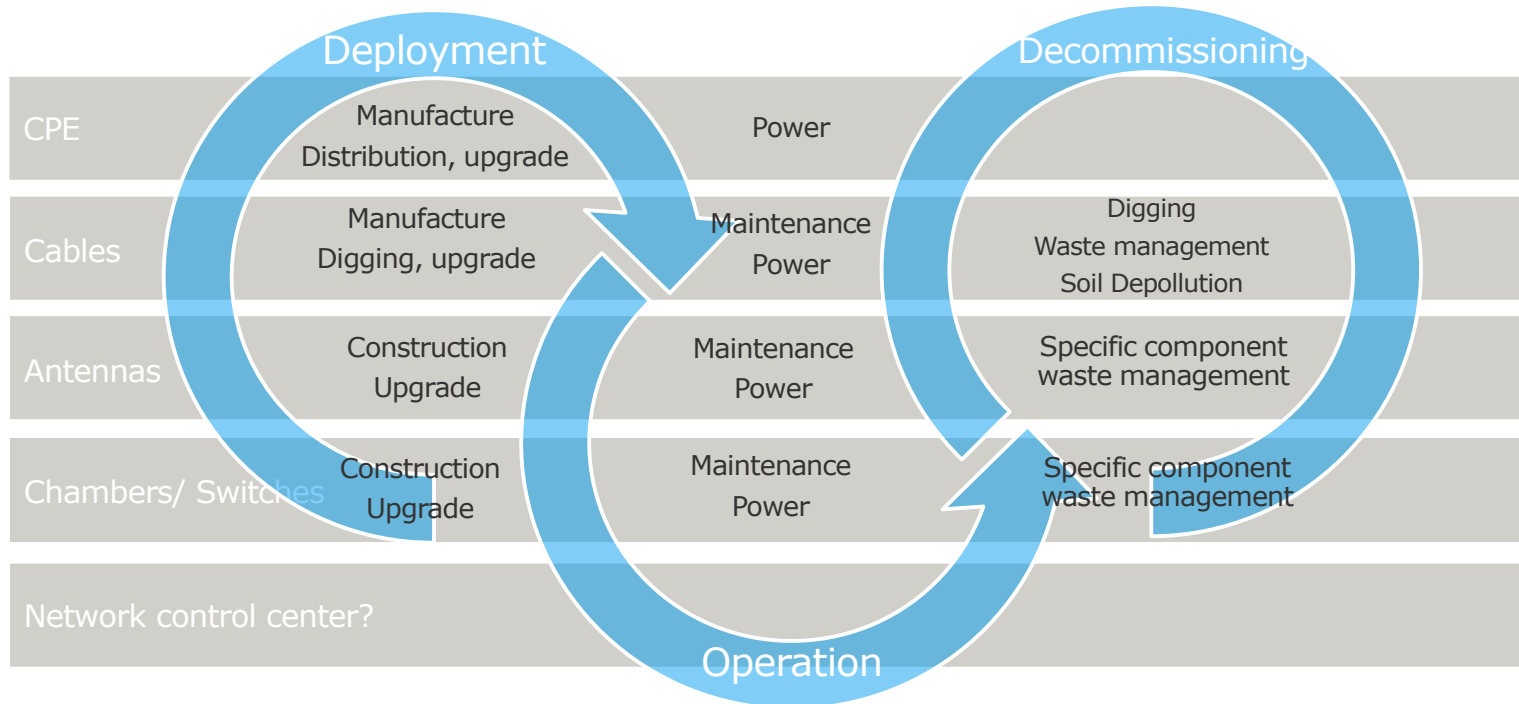NRAs role is focused network operation; but

Network operation accounts for less than one quarter of ICT emissions (including equipment production). Mobile operation represents an increasing share

Terminal equipment seems to be the most significant driver of ICT GHG emissions – especially large screens
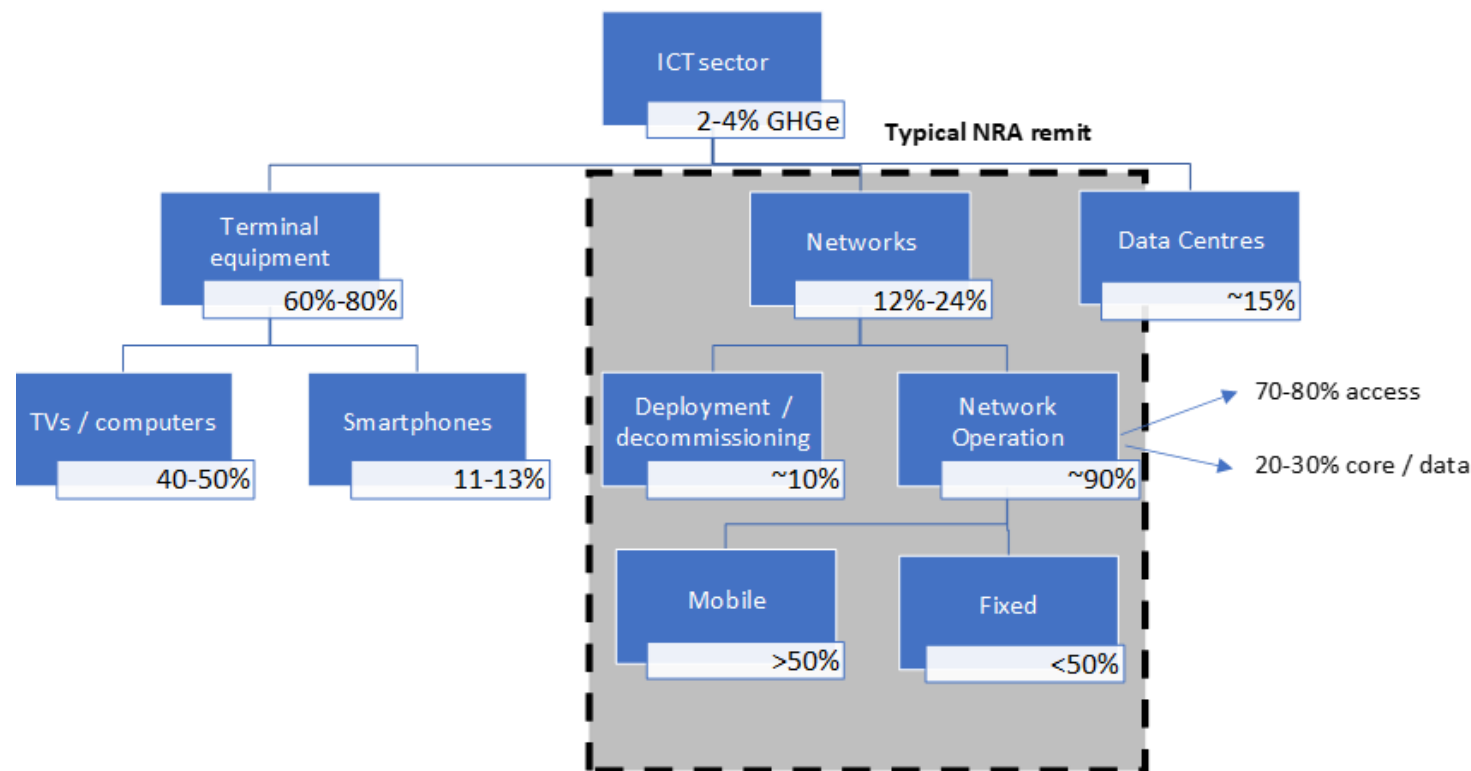
Future **trajectory for ICT emissions is subject to debate – depends on strength of "rebound" effect** vs energy efficiency savings from the sector. Projections range from stable emissions to worst case scenarios where ICT accounts for 14-24% global emissions by 2030/40

WHAT ARE THE IMPACTS AT DIFFERENT LIFECYCLE STAGES?

	Deployment		Decommissioning
CPE	Manufacture Distribution, upgrade	Power	
Cables	Manufacture Digging, upgrade	Maintenance Power	Digging Waste management Soil Depollution
Antennas	Construction Upgrade	Maintenance Power	Specific component waste management
Chambers/ Switches	Construction Upgrade	Maintenance Power	Specific component waste management
Network control center?		Operation	

TELECOM NETWORK LIFECYCLE
OVERVIEW OF THE 3 KEY STAGES AND THEIR SUB-STAGES

RAMBØLL   wik CONSULT

- Industry estimates suggest the **greatest environmental impacts are linked to network operation** (>90% of total GHG emissions from eComms: Nokia), and the access network in particular (70-80% power consumption: France Strategie). Supply and demand side both play role

- **Some impacts from deployment phase** not only GHG emissions, but also resources (raw materials, land & water) and on biodiversity

- During the **decommissioning phase**, most **impacts are on resources** (soil pollution, waste management)

WHAT ACTIONS HAVE ECN OPERATORS TAKEN?

Several ECN operators have set targets for **net zero** (between 2030-2050), or made commitments to use **renewable energy**, improve energy efficiency, reduce waste and / or limit toxic substaces

Actions to foster environmental sustainability often dovetail with the interests of ECN operators to **reduce costs** through**:**
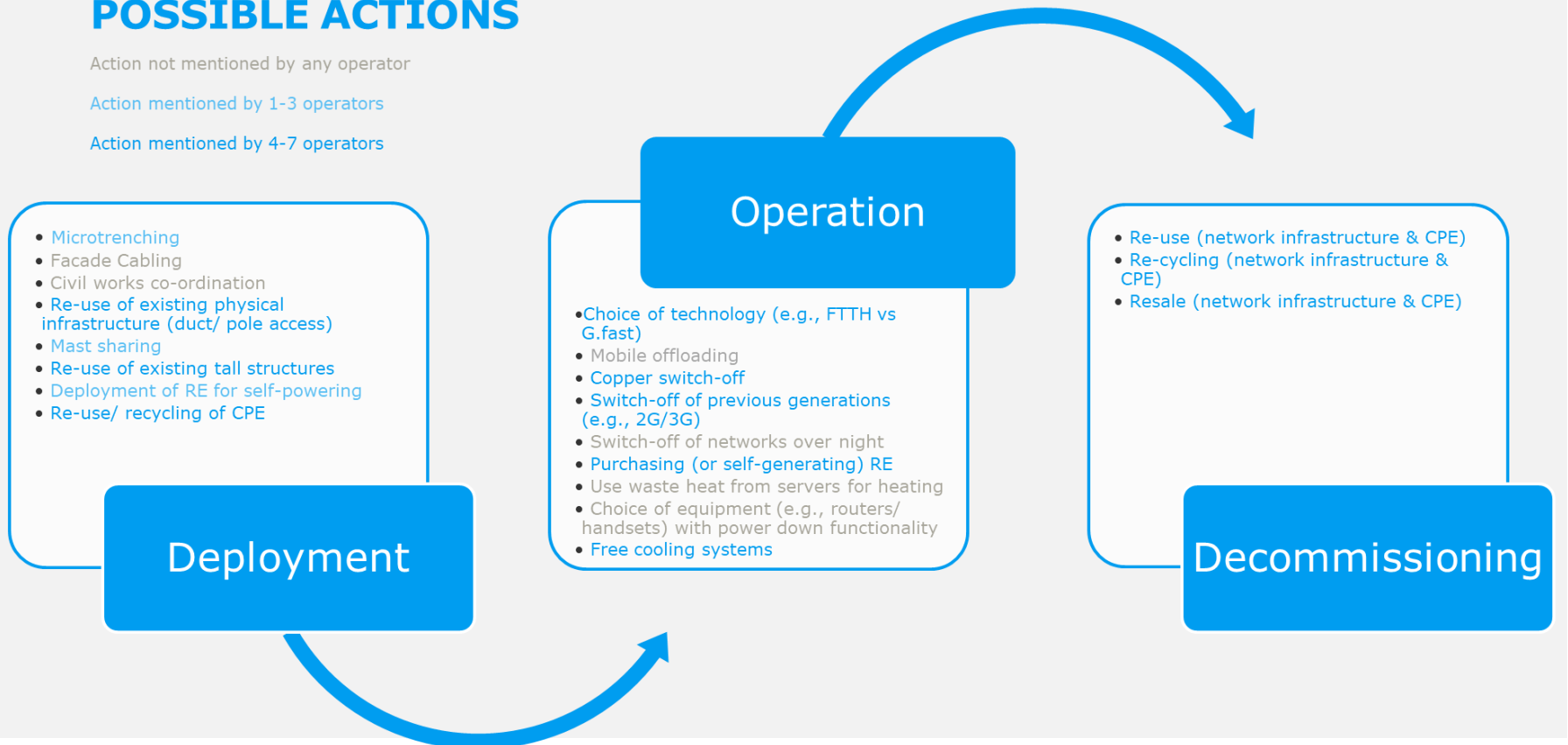
- Reduced energy consumption

- Reduced duplication / digging

POSSIBLE ACTIONS

Action not mentioned by any operator

Action mentioned by 1-3 operators

Action mentioned by 4-7 operators

Deployment

- Microtrenching
- Facade Cabling
- Civil works co-ordination
- Re-use of existing physical infrastructure (duct/ pole access)
- Mast sharing
- Re-use of existing tall structures
- Deployment of RE for self-powering
- Re-use/ recycling of CPE

Operation

- Choice of technology (e.g., FTTH vs G.fast)
- Mobile offloading
- Copper switch-off
- Switch-off of previous generations (e.g., 2G/3G)
- Switch-off of networks over night
- Purchasing (or self-generating) RE
- Use waste heat from servers for heating
- Choice of equipment (e.g., routers/ handsets) with power down functionality
- Free cooling systems

Decommissioning

- Re-use (network infrastructure & CPE)
- Re-cycling (network infrastructure & CPE)
- Resale (network infrastructure & CPE)

# WHAT ARE THE REGULATORY / SOFT LAW TOOLS?

EU electronic communications legislation does not include sustainability objectives, but:

- Art 44 EECC allows competent authorities to impose co-location and network sharing to protect the environment in the context of RoW

- Provisions in the EECC and BCRD could have (incidental) positive effects on sustainability e.g. PIA, CW co-ordination, network sharing / access, fostering new technologies, migration

- Possible levers in spectrum policy, State Aid

Horizontal measures play important role:

- **Eco-design Dir:** energy consumption & labelling

- **WEEE:** recycling electronic equipment

- **Codes of Conduct:** BB equipment, data centres

- **EGDC:** industry Net zero target by 2040

- **EU Taxonomy** criteria for "sustainablility"

Measures supporting digital green transition

Source: Ramboll
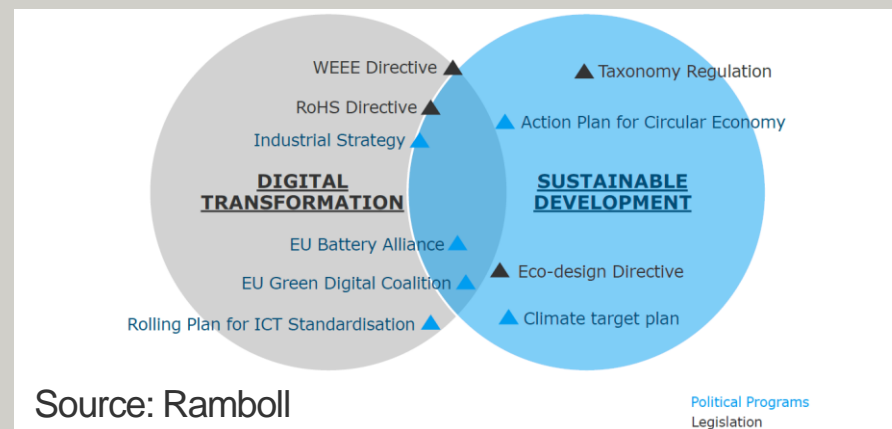
INITIATIVES BY NRAS

- **Only 1 NRA** (ARCEP) out of 22 respondents **has explicit overarching objective to promote sustainability goals** under telecoms legislation. UKE must take into account environmental factors, while ComReg must act consistently with Govt climate policies

- Some NRAs have engaged in sustainability initiatives **in conjunction with Government representatives** via wider climate change programmes (Finland, Portugal, Sweden)

- Others are at the **reflection stage** and/or are conducting consultation exercises (Hungary, Ireland, Malta, Norway, Spain, UK)

- **Several NRAs note that they have no legal mandate to establish environmental action plans** or consider environmental impacts (Austria, Belgium, Germany, Romania, Slovak Rep.)

- Actions by ARCEP incl. **data gathering on emissions**, workshops, consideration of environment in context of spectrum auctions, research

- Other NRAs cite **infrastructure and network sharing activities, copper switch-off** as supporting sustainability (directly or as incidental effect)

- ACM draft Guidelines on **sustainability agreements and implications for competition**

POTENTIAL TRADE-OFFS

Reflecting environmental concerns may create tensions with existing objectives for NRAs

- Energy efficiency vs **technological neutrality** (VHCN)?

- Potential **trade-offs between infrastructure competition and network sharing?**

- Strategies to reduce energy consumption might **affect quality** (network and/or content)

- Trade-offs between **environment and cost**?

How to balance?

- Cost Benefit Analysis to take into account environmental impacts?

WHAT ROLE COULD NRAS PLAY?

Open questions:

- Role of NRA vs env. Agency

- Horizontal vs sectoral measures

Areas of agreement:

- Need for **global action covering whole lifecycle**

- **Consistent data is key** especially for scope 3 (different / changing methodologies)

- **Collaboration with environmental agency** is important

Possible roles for NRAs?

- Data gathering and benchmarking / research

- Building awareness amongst consumers and ECN operators

- Promoting deployment of efficient new technologies, switch-off of legacy technologies

- Promoting re-use of existing infrastructure (PIA), network sharing where appropriate

- Incentives / conditions in context of spectrum awards, State Aid, permits, RoW

- Facilitating development of Codes of Conduct

- Sustainable design of digital / ICT products, energy efficiency, recycling e.g. as in FR

Constraints on NRAs

- Lack of remit / budget

- Potentially conflicting objectives under EECC / Code will not be reopened in short term

Other means to get engaged?

- Potential to pursue environmental objectives in the context of UN Sustainable Development Goals Agenda 2030 / European Green Deal / national sustainability plans

Sustainability at Telia Company
An industry perspective presented by Olga Sihmane

Sustainability at Telia

Telia Company

Telia Company at a glance – reinventing better connected living

160 YEARS HISTORY

25 MILLION CUSTOMERS

7 NORDIC AND BALTIC MARKETS

20,000 EMPLOYEES

Our sustainability framework

- Fully integrated with strategy and focusing on three key impact areas

Climate & circularity

Digital inclusion

Privacy & security

OUR FOUNDATION

Ensuring accountability through strong governance, ethics and human rights agenda
Empowering Telia through a diverse and sustainable workforce

Climate and circularity

- A bold environmental agenda aiming for zero by 2030, backed up by short-term goals

Zero CO$_2$

throughout the value chain

Zero waste

while enabling a circular economy

Climate highlights

Total carbon footprint

91%

8%

1%

■ Suppliers ■ Customers ■ Own operations
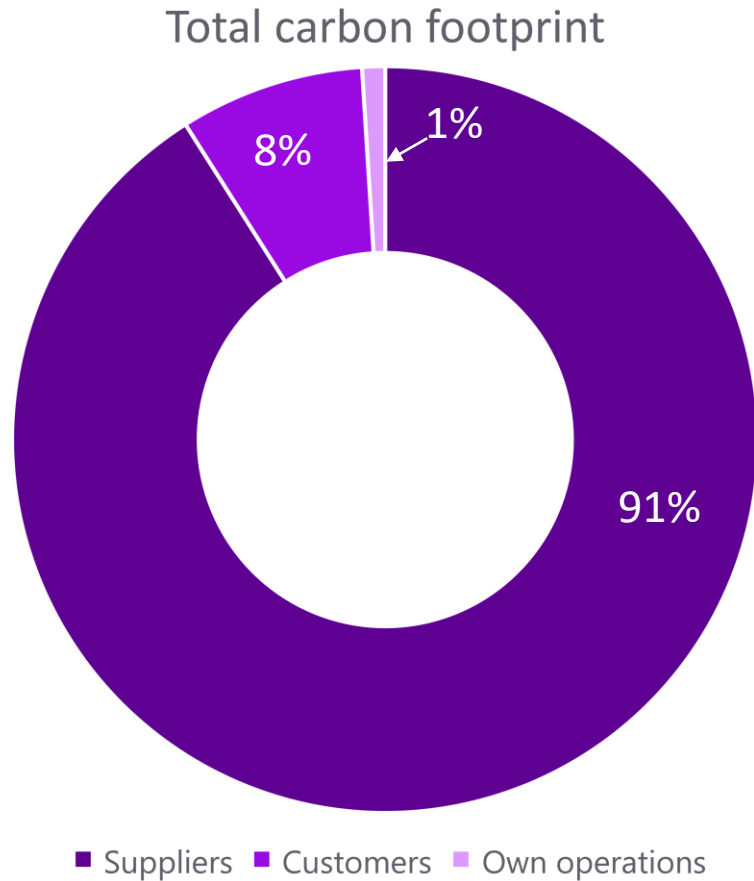
78%

of absolute emission reductions in own operations since 2018

27%

of total supply chain emissions covered by Science Based Targets

100%

renewable electricity throughout our own operations since 2020

Climate neutral

in own operations since 2020

Circularity highlights

74%

of waste reused or recycled

19%

of routers and TV set up boxes delivered to customers were reused

21%

of mobile phones sold to B2B customers "as a service" to enable reuse and recycling

IoT services enabled customers to save energy equivalent to annual consumption of **90,000** Swedish households
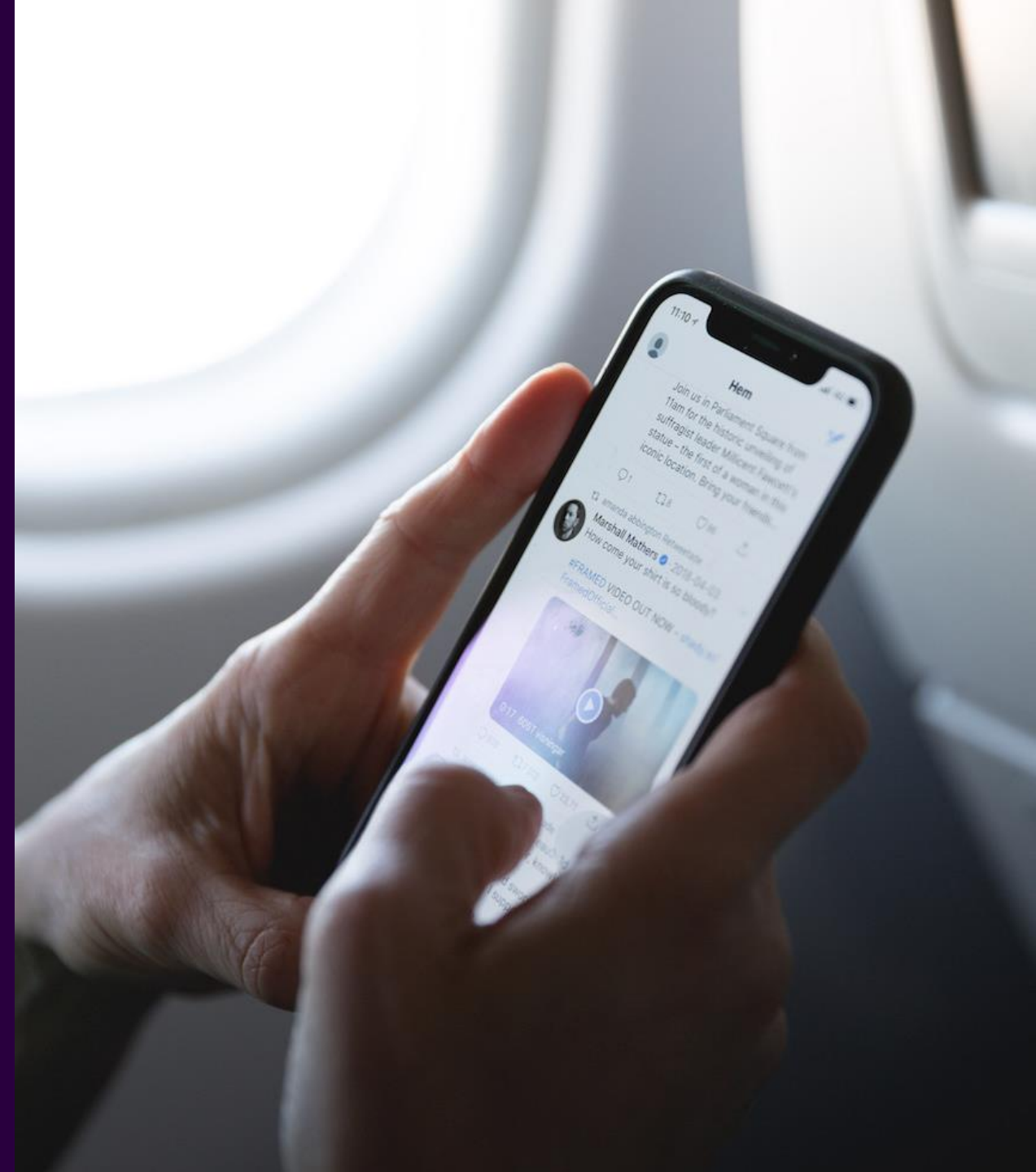
Eco Rating of mobile phones

— Launched in 2021 by Telia, Vodafone, Deutsche Telekom, Telefónica and Orange

— Rating scheme based on circular principles to drive transparency and comparability, while encouraging suppliers to reduce the environmental impact

— Deployed in 30 countries

— 17 participating vendors, >200 devices rated

— +2 points 2020 vs 2021 in average score
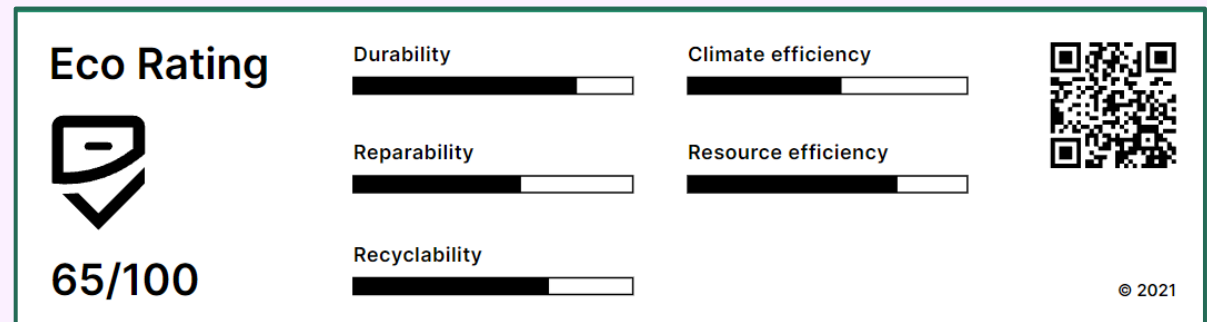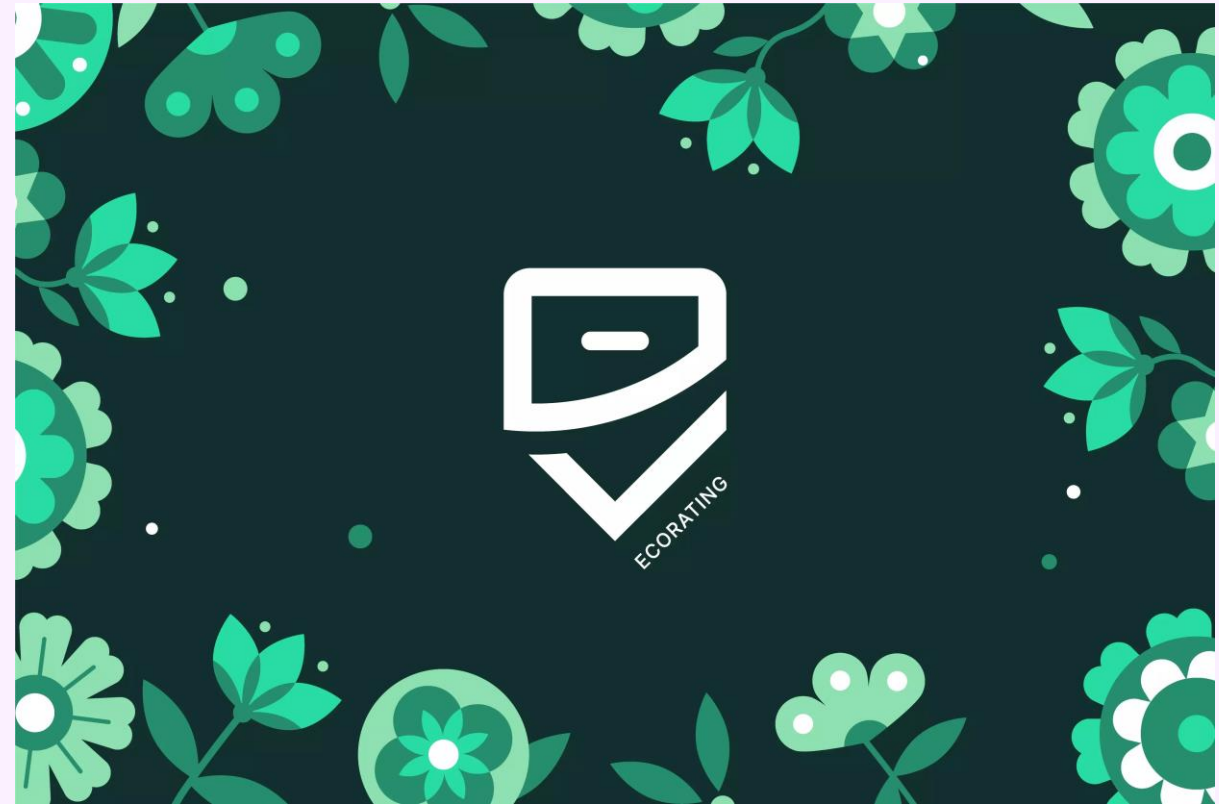
Travel emission insights

— Understand CO_2 impact of movement patterns

— Anonymized movement data from the mobile network combined with the CERO Co2-emissions model from the Royal Institute of Technology (KTH) in Stockholm

— Contributes to data-driven public planning and spending decisions including by:
  — Measuring and benchmarking the CO_2 footprint of different transport modes
  — Identifying and prioritizing the actions that have the biggest impact
  — Sharing and reporting progress and improvement over time

Challenges and considerations

Internal challenges

— Full integration of sustainability into business strategy and processes takes time

— Addressing value chain emissions requires collaboration with suppliers, customers and partners

— Calculation models are still developing; supplier and product specific data is a challenge

— Personnel resources and knowledge in new areas

— Rapidly evolving regulatory and policy landscape

Policy considerations

— Tradeoffs between various policy goals and coherence between different legislative initiatives

— Transparency but with reasonable reporting burden

— Focus both on addressing negative impact of telcos but also on realizing the digital sector's enabling potential

— Use of government procurement power