Workshop on the Role of ICTs Standards for Circular Economy and GHG Emissions Reduction

ICTs and the 1.5 degree challenge
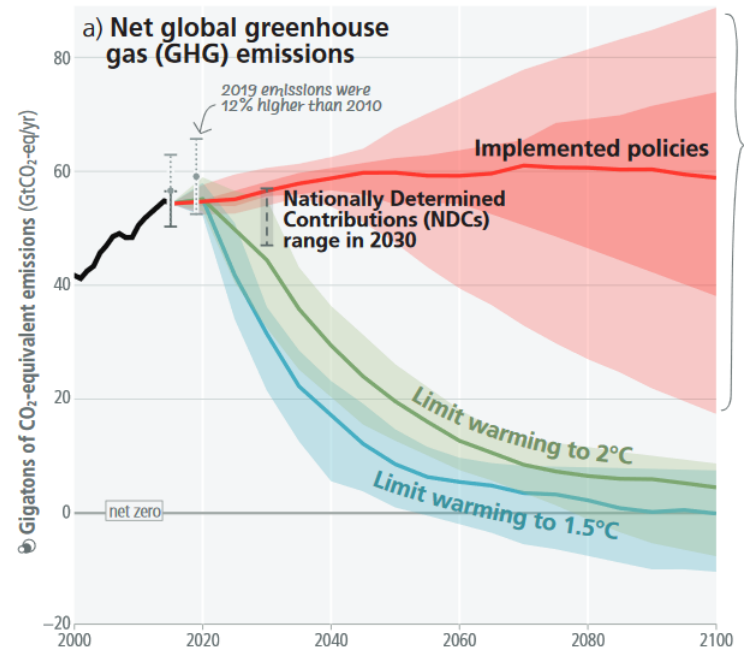
Jean-Manuel Canet, Vice-Chairman ITU-T SG5

9 November 2023

- Context
- The double-edged nature of ICT
- The L.1400 series
- Decarbonizing the sector at the right speed
- Database on GHG emissions
- Allowing other sectors to decarbonize
- Main Take-aways

Context : A rapid decrease in GHG emissions is necessary to keep global temperature increase below 1.5°C

ipcc

WMO **UNEP**

a) **Net global greenhouse gas (GHG) emissions**

2019 emissions were 12% higher than 2010

Implemented policies

Nationally Determined Contributions (NDCs) range in 2030

Limit warming to 2°C

Limit warming to 1.5°C

net zero

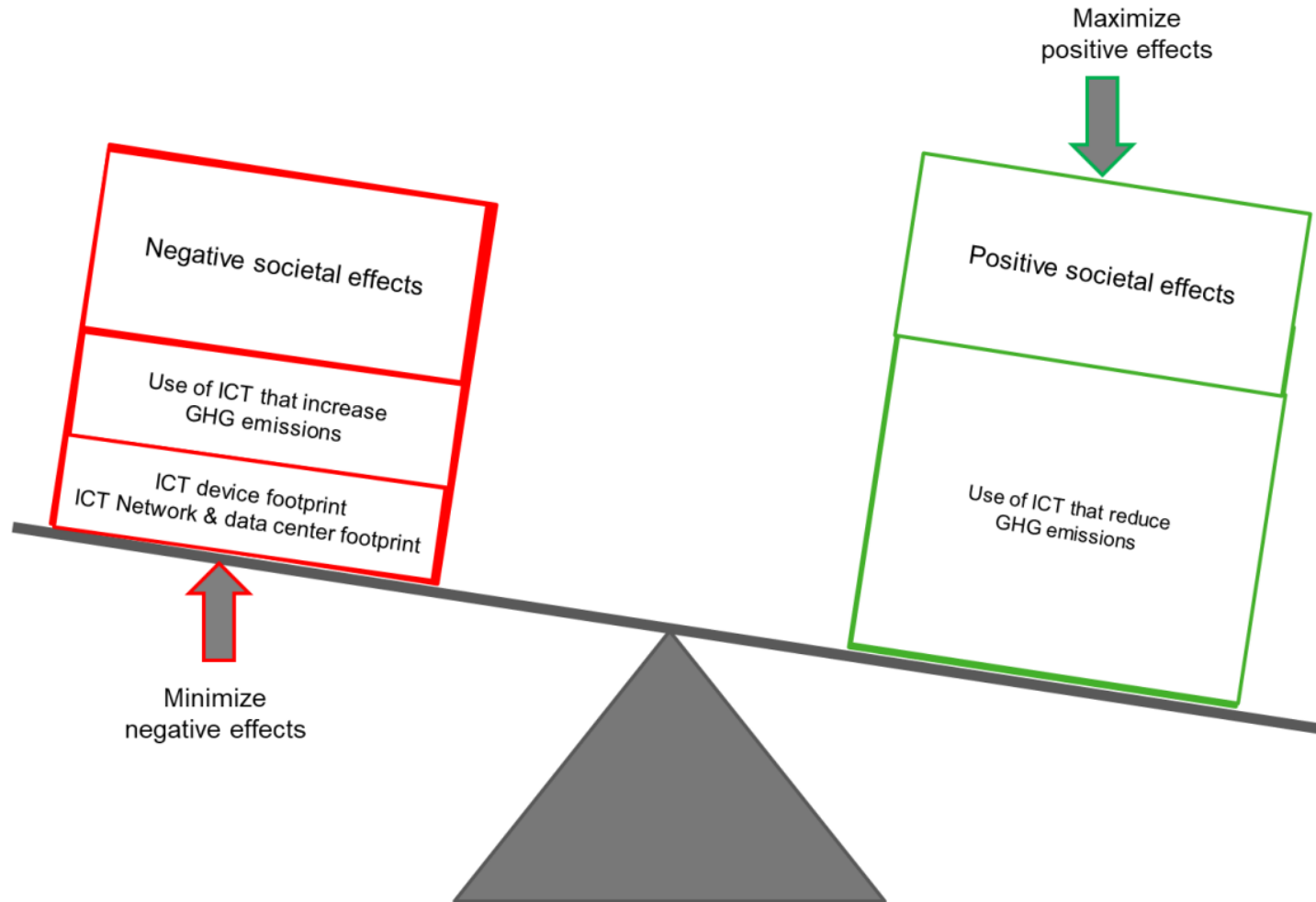Gigatons of CO_2-equivalent emissions (GtCO_2-eq/yr)

Source: AR6 summary for policymakers

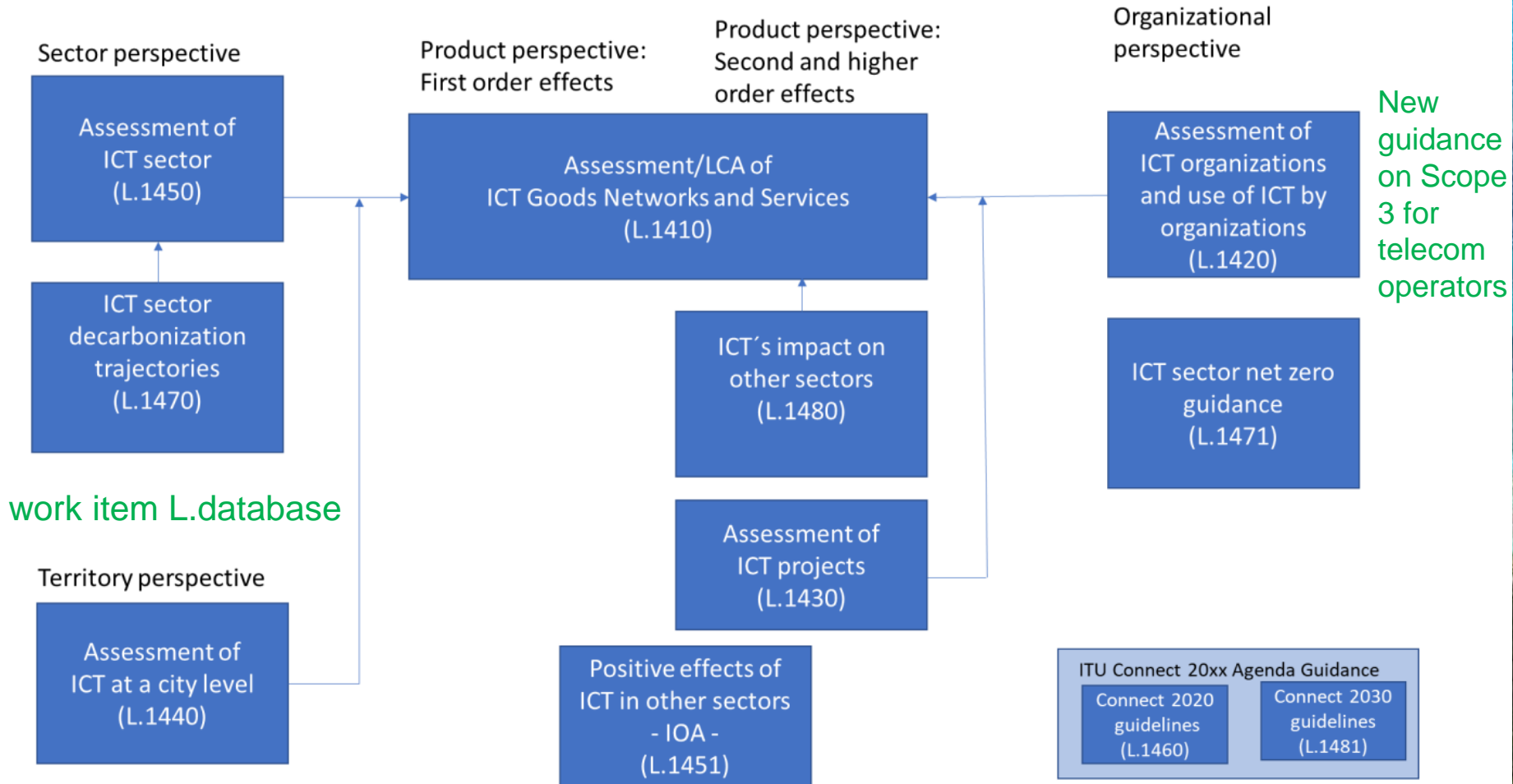➢ The ICT sector has to reduce its greenhouse gas emissions by 45 per cent by 2030, stated the ITU in 2020

The Double-Edge Nature of ICTs

Source : Bergmark, Coroama, Kamiya, Masanet 2021

Enabling the Net Zero Transition

L.1400-series overview

Sector perspective

Assessment of ICT sector (L.1450)

ICT sector decarbonization trajectories (L.1470)

work item L.database

Territory perspective

Assessment of ICT at a city level (L.1440)

Product perspective: First order effects

Product perspective: Second and higher order effects

Assessment/LCA of ICT Goods Networks and Services (L.1410)

ICT´s impact on other sectors (L.1480)

Assessment of ICT projects (L.1430)

Positive effects of ICT in other sectors - IOA - (L.1451)

Organizational perspective

Assessment of ICT organizations and use of ICT by organizations (L.1420)

New guidance on Scope 3 for telecom operators

ICT sector net zero guidance (L.1471)

ITU Connect 20xx Agenda Guidance

Connect 2020 guidelines (L.1460)

Connect 2030 guidelines (L.1481)

Setting 1.5°C Trajectories for the ICT sector

Figure 1: Summary of ICT sector and sub-sector trajectories including embodied emissions and operation

ICT Sector emissions trajectories 2015-2030 (with percent reductions from 2020 to 2030)
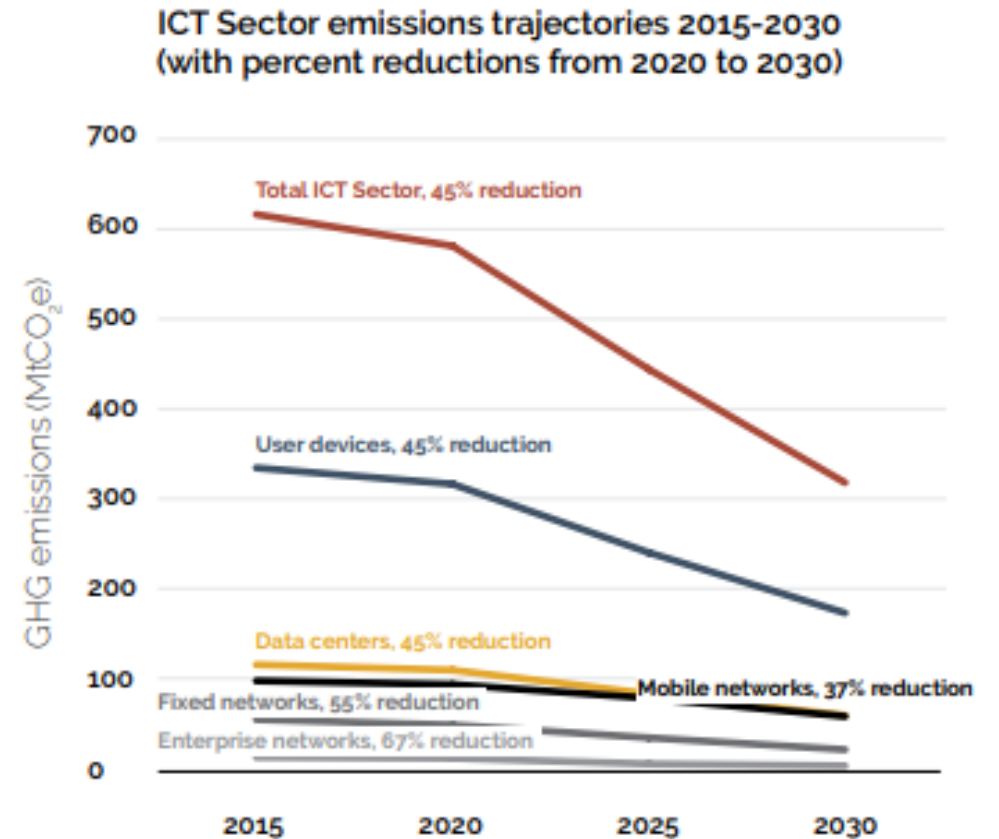
Several steps to decarbonize ICT activities

1. Assess baseline

2. Set medium term and long-term targets

3. Elaborate a reduction plan

4. Implement it / adjust it
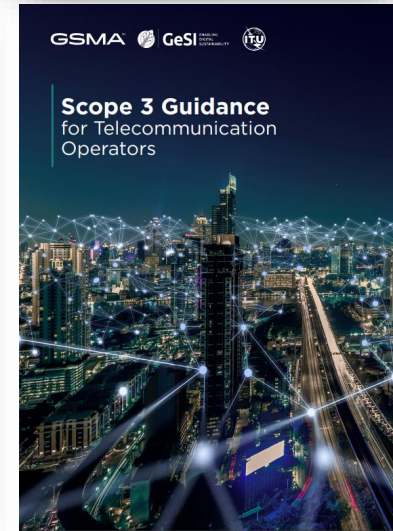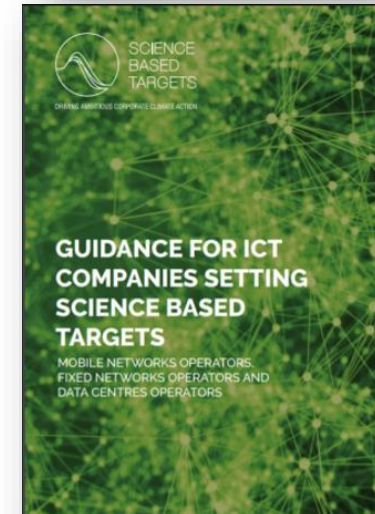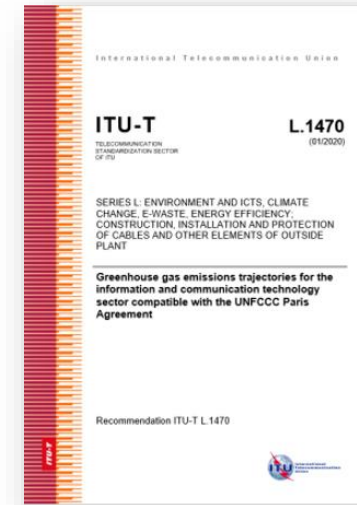
Overview of Scope 3 guidance document and key messages

Scope 3 emissions cover a wide range of economic activities that are divided into 15 Categories.

Estimating Scope 3 emissions is difficult since this refers to emission sources outside a company's direct control.
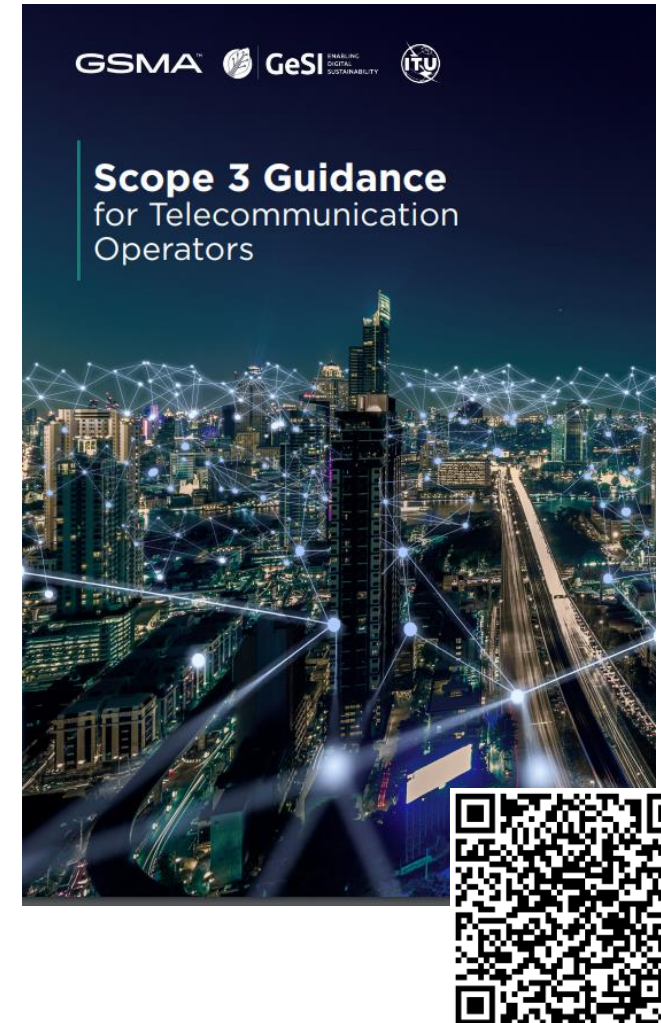
The document establishes guidance to harmonize methods for telecommunication operators to assess and report their Scope 3 Greenhouse Gas (GHG) emissions, and to increase coverage and transparency.

This guidance prioritises in particular:

- Categories 1-2 and 11 (which address the life cycle impact of companies' portfolios),

- Categories 8 and 13, related to leased assets

- Category 3 (which is closely linked to Scope 1 and 2),

…although all Categories are addressed.

This document is intended to supplement, not supersede, existing standards.

GSMA GeSI ITU

Scope 3 Guidance
for Telecommunication Operators

Descriptions

Guiding Principles

Goal is reduction	• Estimating emissions should be used to drive reduction efforts
Hot-spotting	• Focus time and effort on largest emission sources
Keep it simple	• Use the simplest approach that will give required accuracy and best support reduction goals
Scale	• Covering more emissions can help with business decisions
Improve accuracy over time	• Data availability and quality are improving each year
Suitable for all	• Approaches for both beginners and those more advanced
Follow science-based principle	• Related to Net Zero standards from ISO [b-ISO 14064-1] or the Science Based Targets Initiative [b-SBTi] or ITU-T Recommendations [b-L.1470] and [b-L.1471]
Focus on mitigation	• Carbon offsets, whether purchased by the telecommunication operator or a supplier/customer shall not be considered as a valid means of reducing CO_2e inventories.

Reduce emissions sufficiently quickly: some examples

CATEGORIES:

● OPERATING ENERGY-EFFICIENT NETWORK

1. Multiple power saving features
2. Alternative energy supply
3. Consolidation and virtualization
4. Free cooling and location optimization

● EFFICIENCY IN BUILDINGS AND SERVICES

5. Monitoring solutions for efficient buildings
6. Focus on energy conservation measures
7. Alternative mobility concepts
8. Videoconferencing and audioconferencing

● ALTERNATIVE ENERGY

9. Self-production of renewable energies
10. Purchasing renewable energy the certificate of origin and PPA
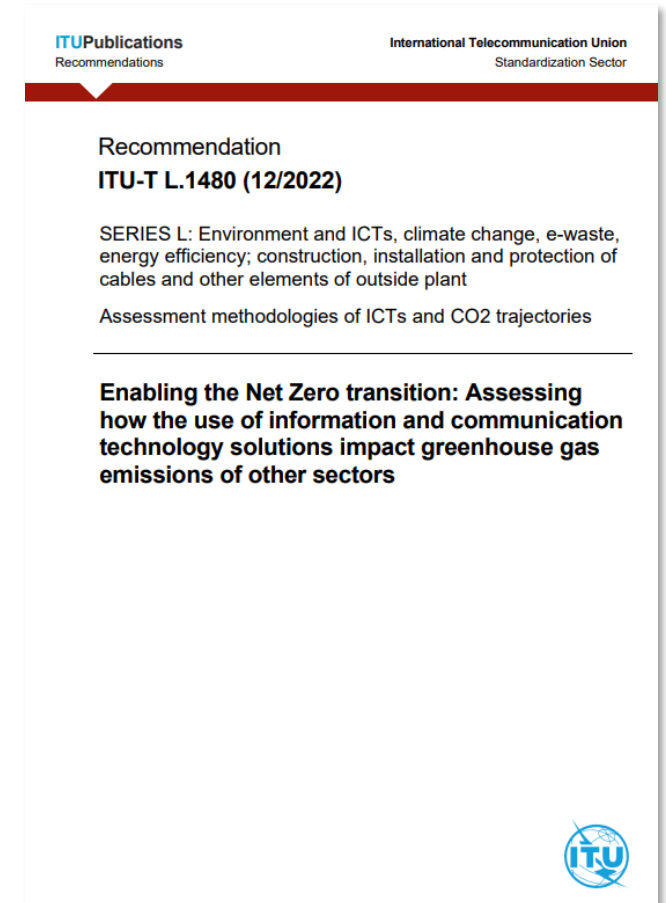11. Energy supply innovation

● APPLICATION OF THE CIRCULAR ECONOMY PRINCIPLES

12. Eco-design of products and services
13. Reuse of network equipment
14. Optimizing the life cycle and end-of-life of customer products and services
15. Selling repairable products

L.1470(20)_F16

Can ICT solutions reduce emissions in other sectors?

L.1480 provides a structured methodological approach, that aims to improve consistency, transparency and comprehensiveness of assessments of how the use of ICT solutions **impact GHG emissions over time**.

ITUPublications
Recommendations

International Telecommunication Union
Standardization Sector

Recommendation
ITU-T L.1480 (12/2022)

SERIES L: Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant

Assessment methodologies of ICTs and CO2 trajectories

Enabling the Net Zero transition: Assessing how the use of information and communication technology solutions impact greenhouse gas emissions of other sectors

Some example of ICT solutions

| Sector	Solution	Mechanism
Energy supply transformation and consumption	Improved metering and forecasting of electricity supply and demand	Optimization
	Optimization of grids, including load balancing through demand response	Optimization
	Improved energy system through demand side management	Optimization
Industry	As-a-service and sharing solutions	Optimization and/or substitution
	Circularity	Optimization
	Production efficiency	Optimization
Buildings	Intelligent building energy and resource management	Optimization
	Optimized use and sharing of buildings	Optimization and/or substitution
Transport	Virtual meetings	Substitution
	Remote work	Substitution
	Route optimization	Optimization
	Fleet management and logistics	Optimization
	Ecodriving	Optimization
	Shared mobility	Optimization and/or substitution
Agriculture and forestry	Precision agriculture	Optimization
	Precision forestry	Optimization
Nature-based sinks	Forest protection	Providing information and managing data
		Facilitation, accessibility, affordability and rising motivation

Digital education and training for all sectors allowing a quicker and more efficient transition

Reskilling and Upskilling

The effects considered in L.1480
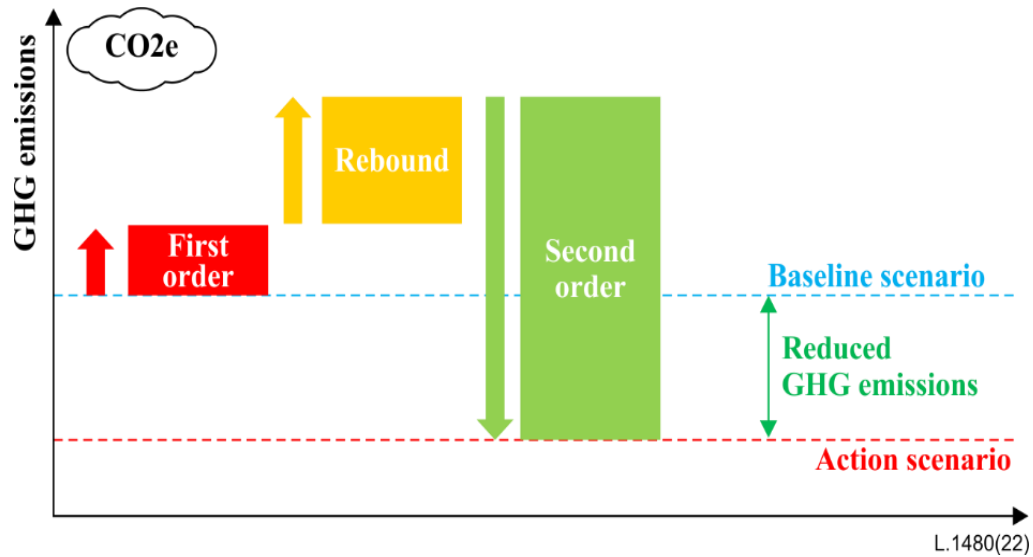
Consider different effects positive and negative
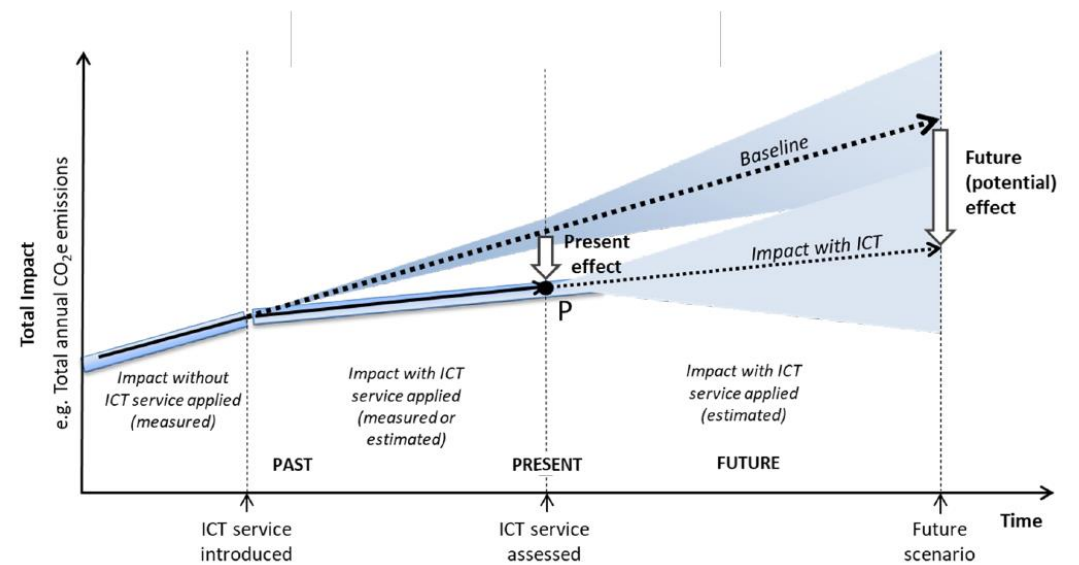
Different scenarios considered

L.database, under preparation

This Recommendation provides guidance to support the creation of an ITU database on GHG emissions of the Global ICT sector at world-wide level and at a national level.

The guidance is intended to support ITU in establishing such a database and to support national regulators in establishing national collection of data related to GHG emissions of the ICT sector.

It is elaborated in cooperation with ITU-D and UNFCCC

Target date for consent: March 2024

Your contributions are welcome !

Main Take Aways

1

ICT, unlike many other products and services, distinguishes itself by its double-edged nature, contributing both to environmental loads and emissions reduction opportunities.

2

The ITU-T Study Group 5 has developed a series of Recommendations to assess the environmental impact of ICT incl.:

L.1470 on 1.5°C GHG trajectories

L.1471 on Net Zero for ICT sector organizations

L.Database under development

3

The Recommendation ITU-T L.1480 provides a methodology to comprehensively assess the impacts of ICT solutions in other sectors and enable the net zero transition.

Thank you very much!

Additional Resources

- ITU climate change: https://www.itu.int/en/ITU-T/climatechange/Pages/default.aspx
- ITU-T Study Group 5: EMF, environment, climate action, sustainable digitalization, and circular economy
- ITU-T L. 1480 Enabling the Net Zero transition: Assessing how the use of ICT solutions impacts GHG emissions of other sectors
- ITU-T L.1470 Greenhouse gas emissions trajectories for the information and communication technology sector compatible with the UNFCCC Paris Agreement
- L.Suppl.37 Guidance to operators of mobile networks, fixed networks and data centres on setting 1.5°C aligned targets compliant with Recommendation ITU-T L.1470
- L.Suppl.38 ITU-T L.1470 - Guidance to information and communication technology manufacturers on setting 1.5°C aligned targets compliant with Recommendation ITU-T L.1470
- ITU-T L.1471 Guidance and criteria for information and communication technology organizations on setting Net Zero targets and strategies