Advancing Green Digital Action Towards a Net-Zero ICT Sector

26 September 2024



# ENVIRONMENT THEMATIC PRIORITY

ITU's Membership has mandated ITU to work in the area of ICTs, environment, climate change and circular economy. Its highest policy making body, the Plenipotentiary Conference, has established a number of indicators and targets related specifically to e-waste, climate change and green digital transformation, which guides the work of ITU:

increase the global e-waste recycling rate by 2023

By 2023 raise the percentage of 50% countries with an e-waste legislation to

In addition, ITU is tracking the contribution of telecommunications/ICT to global greenhouse gas emissions.

### **CREATING A CIRCULAR ECONOMY FOR** ELECTRONICS AND GREENING DIGITAL TRANSFORMATION





- 2. Training to countries on an internationally adopted e-waste statistics



N

E-waste

Data

**E-waste Policy** 

- 3. E-waste awareness raising campaigns
- **Greening Digital Transformation**
- Monitoring industry emissions, energy use and climate 1. commitments from tech companies

1. Technical assistance to countries to establish environmentally

2. Establishing e-waste management systems backed by legally

transparent digitally supported and financed EPR systems

- 2. Supporting countries to monitor and track ICT sector **GHG** emissions and energy use
- Supporting countries in developing green ICT strategies 3. and policies

Developing tools, research, e-learning and communications to support training and knowledge production.



# Country-Level Monitoring of ICT Sector Emissions

Survey results



# Overview

While the Information and Communication Technology (ICT) sector is often considered an enabler of climate action and mitigation, the widespread adoption of digital technology also increasingly contributes to greenhouse gas (GHG) emissions and electricity consumption.

The ICT sector is responsible for an estimated 1.5 to 4 per cent of global emissions. However, most countries do not require or regulate the collection of data on ICT emissions and energy use, which impedes effective policy making, target setting, and progress reporting.

ITU is mandated by its membership to develop its activities on ICTs and climate change and measure the carbon footprint of the telecommunications/ICT industry.

# Objectives

ITU-D supports countries to monitor and track ICT sector emissions and energy use and to promote green ICT strategies and policies. The BDT's Environment team, with the BDT Statistics team and the TSB Standardization's Study Group 5, aims to develop a new data collection effort and database focused on ICT sector emissions.

This initiative will respond to ITU-D's mandate and further ITU's goal, established in 2020, to reach a 45 per cent reduction in GHG emissions from the ICT sector by 2030, contributing to the 1.5°C trajectory established under the Paris Agreement.

#### **Survey Objective:**

To further guide ITU-D's work on monitoring ICT sector emissions and energy use and to support with the evaluation of priorities and needs in the regulatory community in undertaking ICT sector GHG emissions monitoring.





Europe	Africa	Americas	Arab States	Asia Pacific	CIS
Andorra Austria Belgium	Botswana Cabo Verde Eswatini	Bahamas British Virgin Islands Brazil Cuba Ecuador El Salvador Guatemala Mexico Saint Kitts and Nevis Saint Lucia Saint Vincent and the Grenadines Trinidad and Tobago Venezuela	Algeria Comoros Egypt Iraq Oman Qatar Somalia State of Palestine Sudan Tunisia	Australia Brunei Darussalam India Mongolia New Zealand Pakistan Philippines Taiwan, Province of China Thailand Vanuatu Viet Nam	Armenia Azerbaijan Belarus
Bulgaria Cyprus Czech Republic Denmark France Georgia Gibraltar Greece Hungary Iceland Israel Lithuania Malta Moldova Netherlands Norway Portugal Romania Slovakia Slovenia Sweden Switzerland	Ghana Kenya Lesotho Malawi Mauritius Namibia Sao Tome and Principe Sevchelles				3
	South Sudan Tanzania Togo Zambia				
		13			
	15				

25

# Key Findings

Finding #1: ICT regulators' mandates do not fully capture emerging climate goals and priorities.

Currently only one in five regulators are officially mandated to collect emissions data from the ICT sector. However, roughly 40 percent of countries rank emissions monitoring as a high or medium priority and would be willing to undertake actions to that end. Further, 31 percent intend to introduce goals related to emissions monitoring in the future.

Finding #2: ICT regulators expressed strong interest in joining an ITU working group on climate data.

41 percent of regulators (and especially those in Africa and the Arab States) would actively participate in an ITU-led working group dedicated to improving data monitoring and collection.

Finding #3: ICT regulators are unfamiliar with but eager to learn about reporting standards and methods.

While 54 percent of regulators identified as either slightly or not at all familiar with the GHG Protocol, roughly half (49 percent) emphasized the need for capacity building on climate and environmental issues.

Finding #4: Some ICT regulators see emissions monitoring as an activity led by energy or environmental agencies.

About 16 percent of regulators indicated that other national agencies are required to collect emissions and energy data, which may present a barrier to expanding the scope of these regulators' mandates. Notably, environmental agencies in two countries (Algeria and Brunei) responded to the survey instead of ICT regulators.

# Survey Results



# Q1: Is monitoring emissions part of your organization's official mandate?



# Regulators in 18 countries are mandated to collect emissions data from the ICT sector.

Africa	-
Americas	Brazil, Cuba
Arab States	Algeria, Comoros, Egypt, Palestine
Asia Pacific	Brunei, India, Pakistan, Thailand, Vanuatu, Viet Nam
CIS	Belarus
Europe	Andorra, Denmark, France, Greece, Iceland

### Q2: Is monitoring emissions part of your organization's official goals for the future?



Regulators in 24 countries have goals to collect emissions data from the ICT sector in the future.

Africa	-
Americas	Cuba, Ecuador, Trinidad and Tobago
Arab States	Algeria, Comoros, Egypt, Palestine, Somalia
Asia Pacific	Brunei, Pakistan, Philippines, Thailand, Vanuatu, Viet Nam
CIS	Azerbaijan
Europe	Andorra, Belgium, Denmark, France, Greece, Iceland, Malta, Norway, Portugal

### Q3: How high of a priority is the management of ICT emissions for your organization?



Regulators in 30 countries ranked emissions management and reduction as either high or medium priority.

13 countries placing high priority on these actions include:

Africa	-
Americas	-
Arab States	Algeria, Egypt, State of Palestine, Sudan
Asia Pacific	Thailand, Vanuatu, Viet Nam
CIS	-
Europe	Bulgaria, Denmark, France, Malta, Norway, Romania

www.itu.int

### Q4: Are you familiar with the GHG Protocol and the different emissions scopes?



Regulators in 21 countries identified as very or moderately familiar with the GHG Protocol.

Countries that are very familiar with these standards include:

Africa	-
Americas	-
Arab States	Algeria
Asia Pacific	Brunei Darussalam, Thailand
CIS	-
Europe	Czech Republic, France, Norway, Switzerland

### Q5: Do you currently collect ICT emissions data or plan to do so in the future?



Regulators in 15 countries currently collect, or plan to collect, emissions data from the ICT sector.

Africa	-
Americas	Trinidad and Tobago
Arab States	Comoros, Egypt, Somalia, Sudan, Tunisia
Asia Pacific	Vanuatu
CIS	Azerbaijan
Europe	Andorra, Belgium, Denmark, France, Greece, Norway, Portugal

www.itu.int

### Q6: Would you undertake any relevant actions or initiatives within your organization?



Regulators in 31 countries are willing to undertake initiatives that contribute to data collection on ICT emissions.

Africa	Kenya, Lesotho, Sao Tome and Principe, Tanzania
Americas	British Virgin Islands, Brazil, Mexico, Trinidad and Tobago, Venezuela
Arab States	Algeria, Comoros, Egypt, Somalia, Sudan, Tunisia
Asia Pacific	Pakistan, Philippines, Taiwan (Province of China), Thailand, Vanuatu
CIS	Azerbaijan
Europe	Andorra, Austria, Belgium, Czech Republic, France, Greece, Malta, Norway, Portugal, Switzerland

www.itu.int

# Q7: Is your organization interested in actively participating in an ITU working group?



Regulators in 35 countries are interested in joining an ITU working group focused on improving data monitoring.

Africa	Cabo Verde, Ghana, Kenya, Malawi, Namibia, Sao Tome and Principe, Tanzania, Zambia
Americas	Brazil, British Virgin Islands, Cuba, Trinidad and Tobago, Venezuela
Arab States	Algeria, Comoros, Egypt, Iraq, Oman, Palestine, Qatar, Somalia, Sudan
Asia Pacific	Brunei, Pakistan, Philippines, Vanuatu, Viet Nam
CIS	Azerbaijan
Europe	Belgium, Bulgaria, France, Hungary, Norway, Portugal, Sweden

### Q8: How can the ITU strengthen the collection of ICT emissions data?

Capacity Building

Host trainings on data collection methods and emissions reduction tools and strategies. Focus on awareness-raising and capacity building with ICT regulators before expanding into country-level data collection.

#### Standards Development

- Provide guidance to standardize data collection indicators and frameworks.
- Work with industry to standardize classifications for ICT products and services.
- Consider inclusion of embodied GHG emissions in digital product passports.
- Establish an expert working group to develop a standard data collection methodology.

#### Data Collection

- Request emissions data from industry actors on a semi-annual or quarterly basis.
- Coordinate surveys to track country-level emissions data. Collect information on both the supply and demand sides, with input from regulators and independent experts.
- Reopen and revise the current survey to account for whole-of-government approaches.

#### Collaboration

- Develop an ITU-wide strategy and conduct baseline surveys in partnership with industry.
- Coordinate with the IEA on collection of energy consumption data from energy suppliers.
- Provide opportunities for ICT regulators from different countries to learn from each other.

### Q9: Does your organization require additional capacity building from the ITU?



Regulators in 38 countries require capacity building in order to participate in the ITU's data monitoring efforts.

Africa	Botswana, Cabo Verde, Eswatini, Ghana, Kenya, Malawi, Namibia, Sao Tome and Principe, Seychelles, Tanzania, Togo, Zambia
Americas	Brazil, British Virgin Islands, Cuba, Guatemala, Saint Kitts and Nevis, Saint Lucia, Trinidad and Tobago, Venezuela
Arab States	Algeria, Comoros, Egypt, Iraq, Oman, Somalia, Sudan, Tunisia
Asia Pacific	Brunei, Pakistan, Philippines, Vanuatu, Viet Nam
CIS	Azerbaijan
Europe	Bulgaria, Cyprus, Greece, Portugal

www.itu.int

# Advancing Green Digital Action Towards a Net-Zero Digital Sector

Moving forward, the survey will contribute to the ITU's development of a three-pillar programme:



Globally harmonized digital sector GHG emissions and energy use reporting.



Guiding collection of digital sector GHG emissions and energy use national reporting.



Drafting national digital net-zero transition plans and target setting.



ITU-WBA webinar

# Greening Digital Companies 2024: Monitoring emissions and climate commitments

30 September 2024

Session One: **9:00 - 10:15 CEST** Session Two: **18:00 - 19:15 CEST** 

The two sessions accommodate different time zones. Register for your preferred session:

www.itu.int/go/gdc-24







# Thank you

Dr. Rosie McDonald Climate Change Officer, BDT International Telecommunication Union <u>rosie.mcdonald@itu.int</u>



# Survey Results Continued



# Q1: Is monitoring emissions part of your organization's official mandate?

- Twelve regulators noted that other national authorities, such as energy or environmental agencies, are responsible for monitoring economy-wide emissions.
  - Notably, CITMA (Cuba) oversees all functions related to science, technology, and the environment, while MCIT (Egypt) coordinates closely with the Ministry of Environment.
  - In addition, **NBTC** (Thailand) forwarded the survey to the Thailand Greenhouse Gas Management Organization (TGO) who has a mission to "develop and promote tools and mechanisms for reducing greenhouse gases, certify the quantity of greenhouse gases, and track greenhouse gas reduction in support of national policies". However, the carbon footprint certification scheme is voluntary.
- While ANRTIC (Comoros) and SDFI (Denmark) are mandated to monitor emissions, no data collection effort has started.
- PTS (Sweden) only collects data on ICT energy use.
- Nkom (Norway) is not mandated to monitor emissions but one of its assignments is to reduce emissions in the sector.
- With the introduction of the Climate Framework Law in 2021, ANACOM (Portugal) will likely expand its mandate to emission monitoring in the near-future.
- **Anatel** (Brazil) plans to conduct a study to evaluate the establishment of institutional goals related to environmental sustainability in Anatel's strategy.



# Q2: Is monitoring emissions part of your organization's official goals for the future?

- BIPT (Belgium) and ARCEP (France) intend to build on existing goals and broaden the scope of industry data collected in the future. **NBTC (Thailand)** noted that monitoring GHG emissions is part of TGO's 20-year Strategic Action Plan (2019-2037).
- ANRTIC (Comoros), SDFI (Denmark), EETT (Greece), and Nkom (Norway) noted that baseline assessments of the ICT sector are planned or in progress.
- **Anatel** (Brazil) plans to conduct a study to evaluate the establishment of institutional goals related to environmental sustainability in Anatel's strategy.
- In December 2023, MCA (Malta) proposed a framework for operators to disclose data on a voluntary basis.



# Q3: How high of a priority is the management of ICT emissions for your organization?

- ANRTIC (Comoros) ranked emissions reduction as low priority due to lack of capacity and resources.
- RTR (Austria) ranked emissions reduction as low priority, but has taken some recent actions, including a public awareness campaign on smartphones and sustainability (link) and contributions to related BEREC workstreams (link, link).
- BIPT (Belgium), NMHH (Hungary), DICT (Philippines), and NTRC (Saint Lucia) recognized the importance of sustainability and climate mitigation efforts but have not pursued any specific actions for the ICT sector. **BIPT** (Belgium) noted that they are planning to start monitoring GHG emissions in the ICT sector beginning in 2025 and that there is a general focus on supporting the green transition. As part of this, there is also an emphasis on managing and reducing GHG emissions in the ICT sector.
- **MCIT** (Egypt) puts the reduction of GHG emissions as a high priority inside the organization as well as the whole sector.
- Arcep (France) have been collectively working on the environmental footprint of digital technologies (including GHG emissions) for the past 3 years.
- **NBTC** (Thailand) highlighted that based on TGO s mission, by law, to promote all sectors management and reduction of GHG emissions had been set and considered as a high priority.

# Q5: Do you currently collect ICT emissions data or plan to do so in the future?

- Arcep (France) have been collecting data since 2020 via an annual survey.
- MCIT (Egypt), EETT (Greece), and Nkom (Norway) have started to develop data collection methods and mechanisms.
- BIPT (Belgium) currently collects emissions data for some, but not all, ICT industries. **SDFI** (Denmark) are planning to start collection in 2025.
- NMHH (Hungary), MCA (Malta), CRA (Qatar), PTS (Sweden), TATT (Trinidad and Tobago), DICT (Philippines), **KCA (Kenya)** are exploring options to collect data.
- No current data collection efforts are underway for ANRTIC (Comoros), SDFI (Denmark), ANACOM (Portugal), NCA (Somalia), or TRBR (Vanuatu), but these regulators plan to collect data in the future. **NCA** (Ghana) would collaborate with the EPA to collect this data.
- **Anatel** (Brazil) does not collect data on GHG emissions from the ICT sector, but the possibility of monitoring data will be evaluated based on monitoring actions of environmental sustainability carried out by companies in the telecommunications sector.



Q6: Would you undertake any initiatives that contribute to the collection of ICT emissions data within your organization?



- BIPT (Belgium), ARCEP (France), DICT (Philippines), INT (Tunisia) and **Anatel** (Brazil) noted interest in initiatives to improve data collection.
- RTR (Austria), ANRTIC (Comoros), CTU (Czech Republic), LCA (Lesotho), and MCA (Malta) noted interest in public awareness and education initiatives.
- TATT (Trinidad and Tobago) noted interest in initiatives related to energy efficiency.
- MCIT (Venezuela) noted interest in technical assistance initiatives.
- ANRTIC (Comoros), EETT (Greece), MCA (Malta), and ANACOM (Portugal) noted interest in initiatives to improve coordination with operators or other agencies.
- NBTC (Thailand) noted that under TGO's mission and action plan, TGO developed and implemented the CF platform to facilitate all sectors' reporting, verification and certification under its scheme.

www.itu.int

• MICT (Egypt) will focus on implementing existing initiatives and scaling.

#### • 11° • 13 • 0 • 14 • 0 • 14 • •

# Q10: In which areas would you like to receive additional capacity building?

- Most of the regulators that requested capacity building seek training on data collection standards and methods. Four EETT (Greece), TRA (Oman), PTA (Pakistan), SCRA (Seychelles) specifically asked to focus on the GHG Protocol.
- ZICTA (Zambia) and DICT (Philippines) requested support on e-waste management.
- ANRTIC (Comoros) requested that countries with developed data collection infrastructure provide technical assistance to countries without formal efforts in place.
- CA (Kenya) and MACRA (Malawi) requested support with strategy development and policy analysis.
- CMC (Iraq), NTRC (Saint Kitts and Nevis), NTRC (Saint Lucia), and AGER (Sao Tome and Principe) requested general capacity building on a broad array of climate and environmental issues.

