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| **Agenda item: PL 2** | **Document C24/72-E** |
| **6 May 2024** |
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| Report by the Secretary-General | |
| GREEN DIGITAL TRANSFORMATION: ITU ACTIVITIES ON CLIMATE CHANGE AND ENVIRONMENTAL SUSTAINABILITY | |
| **Purpose**  Report on ITU’s activities on climate change and environmental sustainability to inform the Council discussion on the green digital transformation.  **Action required by the Council**  The Council is invited to **take note** of the report and **consider** inviting Member States, Sector Members and Academia to actively support activities outlined.  **Relevant link(s) with the Strategic Plan**  Sustainable Digital Transformation; Committed to environmental sustainability.  **Financial implications**  Within the allocated budget 2024-2025. Some additional activities proposed are based on voluntary contributions.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **References**  [*Resolution 182*](https://www.itu.int/en/council/Documents/basic-texts-2023/RES-182-E.pdf) *(Rev. Bucharest, 2022) of the Plenipotentiary Conference; Council documents* [*C24/35*](https://www.itu.int/md/S24-CL-C-0035/en)*,* [*C24/70*](https://www.itu.int/md/S24-CL-C-0070/en)*.* | |

This document complements the climate change and environmental sustainability activities outlined in document [C24/35](https://www.itu.int/md/S24-CL-C-0035/en), as well as activities reported in relation to [Resolution 182](https://www.itu.int/en/council/Documents/basic-texts-2023/RES-182-E.pdf) (Rev. Bucharest, 2022) of the Plenipotentiary Conference (PP) as part of the report on the implementation of PP resolutions.

Green digital transformation involves leveraging digital technologies for climate monitoring as well as climate mitigation and adaptation across the economies and societies, while addressing the environmental impact of digitalization. Increased digital adoption escalates energy and water consumption, greenhouse gas (GHG) emissions, material usage, and e-waste.

Connecting the 2.6 billion people currently offline will require more infrastructure and devices, which will further increase demand for scarce energy and water resources, as well as rare-earth elements and critical raw materials, and drive emissions and e-waste generation even higher if targeted interventions are not implemented.

As per the [Global E-waste Monitor 2024](https://www.itu.int/en/ITU-D/Environment/Pages/Publications/The-Global-E-waste-Monitor-2024.aspx), from 2010 to 2022, both the amount of e-waste generated and the amount of e-waste documented to be formally collected and recycled have increased, from 34 billion kg to 62 billion kg, and 8 billion kg to 13.8 billion kg, respectively. However, the growth of e-waste generation is outpacing the formal collection and recycling by almost a factor of 5. Worldwide, 81 countries (or 42 per cent) currently have an e-waste policy, legislation, or regulation. It is projected that 82 billion kg of e-waste will be generated in 2030. In a business-as-usual scenario, documented formal collection and recycling rates will decline to 20 per cent in 2030.[[1]](#footnote-2)

In parallel, the rapidly increasing digitalization requires more energy resulting in GHG emissions. Estimates of the ICT sector’s share of global carbon emissions vary across the literature ranging from 1.5 to 4 percent.[[2]](#footnote-3) Based on the data and estimates in the report [Measuring the Emissions and Energy Footprint of the ICT Sector: Implications for Climate Action](https://www.itu.int/en/ITU-D/Environment/Pages/Publications/Measuring-Emissions-and-Energy-Footprint-ICT-Sector.aspx), 2024, by ITU and the World Bank, at least 1.7 percent of global emissions stem from the ICT sector, and electricity consumption within the ICT sector reached an estimated 1 183 TWh in 2022, representing a 6.9 percent increase in ICT sector electricity consumption from 2020 to 2022.[[3]](#footnote-4) Growing data storage and processing needs, including for AI systems, are further increasing the ICT sector’s carbon footprint and require a significant amount of energy, leading to emission and energy supply concerns.[[4]](#footnote-5) Additionally, data infrastructure consumes refrigerants and large amounts of water for cooling.[[5]](#footnote-6)

ITU is at the forefront of global initiatives to improve environmental efficiency, build circular digital economies, reduce e-waste and greenhouse gas emissions, and put the ICT sector at the forefront of climate and environmental action.

ITU-R creates the regulatory and technical bases for the development and effective operation of satellite and terrestrial climate monitoring and data dissemination systems. The ITU-D Environment Thematic Priority covers activities and issues related to e-waste management through the development of policy and regulation, collection of data and statistics, and the role of ICTs in enhancing environmental sustainability for climate action. ITU-T develops standards that focus on environmental sustainability through measurement, energy efficiency, and circular economy, offering tools for emissions tracking, smart energy control, green data centre practices, sustainable e-waste management, and measuring the impact of ICT in other sectors, which is possible due to [Recommendation ITU-T L.1480](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=15030), or on biodiversity. The General Secretariat facilitates intersectoral coordination and liaises with key initiatives that focus on connecting digital technologies with environmental sustainability, such as the Coalition for Digital Environmental Sustainability (CODES), which ITU has joined as a co-champion in 2023.

A comprehensive list of activities across the Bureaux and key milestones between March 2023 and March 2024 can be found in document [C24/35](https://www.itu.int/md/S24-CL-C-0035/en).

**Green Digital Action**

Green Digital Action was launched in the lead up to the 28th Conference of the Parties (COP28) of the United Nations Framework Convention on Climate Change (UNFCCC) to accelerate concrete climate and environmental sustainability activities through a collaborative multi-stakeholder process. More than 40 Green Digital Action partners joined the ITU at COP28 to present, provide a boost for and invite other stakeholders to join co-created initiatives along six thematic pillars:

* Reduce ICT Sector Emissions
* Foster a circular ICT sector
* Advance climate solutions through open environmental data and technologies
* Build momentum to implement green standards
* Facilitate a green transition across all industries through digital technology and skills development
* Leverage digital systems to ensure life-saving disaster alerts, in line with the United Nations Secretary-General’s Early Warnings for All Initiative

At COP28 the Green Digital Action partners launched specific [commitments](https://www.itu.int/initiatives/green-digital-action/impact/) along the thematic priorities. Working groups comprised of and led by partners are progressing on their implementation.

Green Digital Action aims to continue leveraging UNFCCC COPs to place an enhanced focus on the importance of digital technologies and services in the fight against the climate crisis. The Secretariat is collaborating with Azerbaijan and Brazil presidencies of COP29 and COP30 in this regard. This initiative is also designed as a continuous multi-stakeholder collaborative initiative to mobilize intensified efforts of the ICT community in the fight against the climate crisis. It also serves as a vehicle to strengthen intersectoral coordination and support harmonized fundraising efforts, aligning with ITU's Resource Mobilization Strategy (document [C24/70](https://www.itu.int/md/S24-CL-C-0070/en)). Member States are invited to support this effort through voluntary contributions to the ITU-wide thematic green digital fund.

**ITU activities and plans for increased transparency**

A key focus of the Green Digital Action is increased transparency of ICT sector greenhouse gas emissions and energy consumption.

With the support of the Sectors, Green Digital Action has made good progress towards the objective of gathering organizations, that agree to implement GHG emissions reductions following 1.5°C trajectories, to commit to publicly report data on all GHG emission scopes and categories yearly, and submit results to a public ITU database based on a standardized methodology.

ITU standards, such as ITU-T [L.1450](https://www.itu.int/rec/T-REC-L.1450) and [L.1470](https://www.itu.int/rec/T-REC-L.1470), play a crucial role in guiding the ICT sector on how to collect data on GHG emissions, providing a structured framework and methodologies for measurement and reporting.

ITU and the World Benchmarking Alliance strengthen the monitoring of GHG emissions, energy use and climate commitments of 200 leading tech companies via the annual “[Greening Digital Companies](https://www.itu.int/en/ITU-D/Environment/Pages/Toolbox/Greening-Digital-Companies-2023.aspx)” industry assessment report. In addition, ITU and the World Bank, launched a report in March 2024 titled “[Measuring the Emission & Energy Footprint of the ICT Sector](https://www.itu.int/en/ITU-D/Environment/Pages/Publications/Measuring-Emissions-and-Energy-Footprint-ICT-Sector.aspx)”, which collates GHG emissions and energy consumption data for the ICT sector across 30 countries.

Both reports highlight **transparency issues and the importance of data and monitoring, as well as verification and reporting**.

In contrast to other sectors, reliable ICT emissions data is largely unavailable. To address this challenge, **ITU aims to develop a new data collection effort and database to monitor ICT sector emissions and energy use**. The methodology for the database will be informed by Recommendation ITU-T L.Database which is currently under development in ITU-T Study Group 5 “Environment, EMF and Circular Economy”.

The initiative will further the goal, outlined in [Recommendation ITU-T L.1470](https://www.itu.int/rec/T-REC-L.1470) and 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.

ITU is proposing a 3-year project to collect and publish reliable and timely ICT sector GHG emissions data and enhance collection of green ICT data at the national and international level through much needed capacity building to help policy makers use the information effectively for policy development and decisions making. The estimated budget for the initial 3-year project is USD 1.3 million.

**Operational greening**

ITU continues to implement the United Nations System Chief Executives Board for Coordination (CEB) endorsed Strategy for Sustainability Management in the UN System 2020-2023. According to the annual Environmental Governance survey conducted by the United Nations Environment Programme (UNEP), ITU currently *approaches compliance* with the criteria for an Environmental Management System (EMS). To fully meet the requirements of developing and implementing an EMS by 2025 as per the UN-wide agreed target, environmental impacts, and management of risks of ITU's significant environmental aspects are to be integrated in operational controls and procedures (e.g. procurement, travel, facility management, Information Service, etc.).

According to the [Greening the Blue Report 2023](https://www.unep.org/resources/report/greening-blue-report-2023), ITU’s CO2 emissions rose from 1,674 tonnes in 2021 to 1,969 tonnes in 2022. This was primarily due to increased official travel following the end of the Covid-19 pandemic. While delegate travel is not currently included in ITU’s yearly GHG inventory, including delegate travel to the Plenipotentiary Conference (Bucharest, 2022) alone, the amount of CO2 emissions would be at least two-fold. The ITU management is considering recommendations of the *Greening the Blue Travel task team to UN entities to support GHG emissions reductions from air travel in the UN system*.

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1. ITU and UNITAR. 2024. Global E-waste Monitor, 2024 [↑](#footnote-ref-2)
2. The World Bank. 2023. Green Digital Transformation: How to Sustainably Close the Digital Divide and Harness Digital Tools for Climate Action [↑](#footnote-ref-3)
3. The World Bank and ITU. 2024. Measuring the Emissions & Energy Footprint of the ICT Sector: Implications for Climate Action [↑](#footnote-ref-4)
4. ITU and World Benchmarking Alliance. 2023. Greening digital companies 2023 report [↑](#footnote-ref-5)
5. ITU and the World Bank. 2023. [Green data centers: towards a sustainable digital transformation. A practitioner's guide](https://www.itu.int/hub/publication/d-them-32-2023-01/) [↑](#footnote-ref-6)