

# ITU-T Recommendations

## Green ICT Standards and Supplements

### List of ITU-T Recommendations on e-waste and circular economy

- [ITU-T L.1000](#) - **Universal power adapter and charger solution for mobile terminals and other hand-held ICT devices.** (Approved in 2011-06-13): This Recommendation provides high level requirements for a universal power adapter and charger solution that will reduce production and the quantity recycled by widening their application to more devices and increasing their lifetime.
- [ITU-T L.1001](#) - **External universal power adapter solutions for stationary information and communication technology devices** (Approved in 2012-11-29): This Recommendation provides high level requirements for a universal power adapter and charger solution that will reduce production and the quantity recycled by widening their application to more devices and increasing their lifetime.
- [ITU-T L.1002](#) - **External universal power adapter solutions for portable information and communication technology devices** (Approved in 2016-10-14): This Recommendation ITU-T L.1002 defines requirements, and provides guidelines on environmental aspects, of universal power adapter solutions (UPA) designed for use with portable information and communication technology ICT devices.
- [ITU-T L.1005](#) - **Test suites for assessment of the universal charger solution** (Approved in 2014-02-13): Recommendation ITU-T L.1005 considers the creation of specific test suites to assess certain functional aspects of the: energy efficiency, interworking, safety and electromagnetic compatibility (EMC) of the universal charger solution (UCS). Such testing is required to guarantee a minimum quality level of the UCS in conformance with the target basic configuration of the UCS and charger described in Recommendation ITU-T L.1000.
- [ITU-T L.1006](#) - **Test suites for assessment of the External universal power adapter solutions for stationary information and communication technology devices** (Approved in 2016-12-14): This Recommendation describes the general test suites applicable to the universal power adapter solution (UPA) designed for ICT devices for stationary (non-portable) use defined in Recommendation ITU-T L.1001. It considers the creation of specific test suites to assess certain functional aspects of the energy efficiency, interworking, safety and electromagnetic compatibility (EMC) of universal power adapter solution (UPA) designed for ICT devices for stationary (non portable) use.
- [ITU-T L.1007](#) - **Test suites for assessment of the External universal power adapter solutions for portable information and communication technology devices** (Approved in 2016-12-14): This Recommendation considers the creation of specific test suites to assess certain functional aspects of the: energy efficiency, interworking, safety and electromagnetic compatibility (EMC) of the universal power adapter (UPA) solution designed for information and communication technology (ICT) devices for portable use.
- [ITU-T L.1010](#) - **Green battery solutions for mobile phones and other hand-held information and communication technology devices** (Approved in 2014-02-13): This Recommendation defines a

minimum set of parameters necessary to identify green battery solutions that should be considered by developers/manufacturers to reduce the future environmental impact of battery use.

- [ITU-T L.1015](#) - **Criteria for evaluation of the environmental impact of mobile phones** (Approved in 2019-05-22): This Recommendation focuses on the criteria to be used for evaluation of the environmental impact of mobile phones. It considers all life cycle stages of mobile phones such as the design, production, use and end of life management. The Recommendation also defines a minimum level of environmental performance. Within the constraints of technology and affordability, sustainability should be considered for: materials; energy use; durability, upgrade and repair operations; end of life management; packaging, corporate practice; manufacturing and operations.
- [ITU-T L.1020](#) - **Circular Economy: Guide for Operators and Suppliers on approaches to migrate towards circular ICT goods and networks** (Approved in 2018-01-13): This Recommendation suggests approaches of circular economy (CE) for information and communication technology (ICT) goods and networks. It focuses particularly on the next steps in improving circularity in the operators' supply chain.
- [ITU-T L.1021](#) - **Extended producer responsibility - Guidelines for sustainable e-waste management** (Approved in 2018-04-06): This Recommendation offers a description of the extended producer responsibility (EPR) system in dealing with e-waste. It expands on the different existing forms of EPR globally, not only in theoretical terms, but also with a practical view on their feasibility, challenges and pre-requisites.
- [ITU-T L.1030](#) - **E-waste management framework for countries** (Approved in 2018-06-13): Recommendation ITU-T L.1030 provides a management framework for e-waste to countries. It summarizes the different steps that countries need to adopt in order to put in place an e-waste management system. The different steps of the e-waste management system described in this Recommendation will be further elaborated in future Recommendations. In addition, the Recommendation provides highlights concerning the environmental impact of improper handling of e-waste as well as the economic opportunities that could emerge from the sustainable management of e-waste.
- [ITU-T L.1031](#) - **Guideline on implementing the e-waste reduction target of the Connect 2020 Agenda** (Approved in 2018-11-15): ITU-T L. EW2020 describes a three-step approach to address the e-waste reduction target of the Connect 2020 Agenda. These steps consist of guidance on developing an e-waste inventory, approaches to design e-waste prevention and reduction programs, and the supportive measures required for successfully implementing the Connect 2020 e-waste target. This Recommendation is intended to be utilized by relevant stakeholders to take their first step in addressing Target 3.2 of the Connect 2020 Agenda, that is to reduce waste by 50% by 2020.
- [ITU-T L.1100](#) - **Procedure for recycling rare metals in information and communication technology goods** (Approved in 2012-02-22): This Recommendation provides information on the recycling procedures of rare metals in ICT goods, and defines a communication format for providing recycling information of rare metals they contain.

- [ITU-T L.1101](#) - **Measurement methods to characterize rare metals in information and communication technology goods** (Approved in 2014-03-22): Based on the guidelines of IEC 62321, Recommendation ITU-T L.1101 provides reference characterization procedures for efficient recycling of rare metals by using XRF and ICP-MS measurement methods.
  - [ITU-T L.1102](#) - **Use of printed labels for communicating information on rare metals in information and communication technology goods** (Approved in 2016-07-14): Recommendation ITU-T L.1102 describes printed label methods to provide information on rare metals contained in information and communication technology (ICT) goods, and includes requirements specified in Recommendations ITU-T L.1100 and ITU-T L.1101 on the disclosure of rare metals information to consumers and recyclers.
  - [ITU-T L.1300](#) - **Best practices for green data centres** (Approved in 2014-06-29): This Recommendation describes best practices aimed at reducing the negative impact of data centers on the climate.
  - [ITU-T L.Suppl.4](#) - **Guidelines for developing a sustainable e-waste management system** (Approved in 2014-12-19): This Supplement provides a set of guidelines that countries can refer to when designing or adjusting their e-waste management systems including a policy/legal framework, collection mechanisms, financial mechanisms and engagement with all relevant stakeholders
  - [ITU-T L.Suppl.5](#) - **Life-cycle management of ICT goods** (Approved in 2014-12-19): This Supplement provides information for the practical implementation of the life-cycle approach in companies, facilities and plants as well as distributors, including chapters on best practices with a specific focus on material usage and selection.
  - [ITU-T L.Suppl.20](#) - **Green public ICT procurement** (Approved in 2015-10-23): This Supplement provides technical guidance to public authorities to improve their procurement practices to purchase green ICT goods and services.
  - [ITU-T L.Suppl.27](#) - **Success stories on e-waste management** (Approved in 2016-10-14): This Supplement sheds light on E-waste management success stories in different countries. The supplement covers different policies, legislation, initiatives, and different stakeholders involvement (government, private sector, NGOS, and informal sector).
  - [ITU-T L.Suppl.28](#) - **Circular Economy in Information and Communication Technology; definition of approaches, concepts and metrics** (Approved in 2016-10-14): This Supplement investigates current approaches, concepts and metrics of CE and RE and their applicability for the ICT infrastructure goods.
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