

EXECUTIVE SUMMARY

E-waste constitutes one of the fastest growing streams of physical waste in the global environment and is a threat to sustainable development. Data on e-waste are required to evaluate developments over time, delineate national and international policies, limit e-waste generation, prevent illegal dumping, promote recycling and create jobs in the recycling sectors. However, few countries collect internationally comparable e-waste statistics, and many countries lack the capacity to collect e-waste data at both regional and national level.

Within the framework of the International Telecommunication Union (ITU) Arab Regional Initiative on environment, climate change and emergency telecommunications and the Global E-waste Statistics Partnership of the United Nations University (UNU), the United Nations Institute for Training and Research (UNITAR) and ITU, the *Regional E-waste Monitor for the Arab States 2021* is the first monitoring effort in the region in relation to e-waste statistics, legislation and e-waste management infrastructure. Its purpose is to enhance the understanding and interpretation of regional e-waste data, with the goal of facilitating environmentally sound management of e-waste.

The key statistical findings for the region are that electrical and electronic equipment (EEE) placed on the market (POM) increased by 30 per cent from 3.2 megatons (Mt), or 8.8 kilograms per inhabitant (kg/inh), in 2010 to 4.1 Mt (or 9.5 kg/inh) in 2019. The Arab States mostly import, rather than manufacture, EEE; the domestic generation of EEE is therefore very limited, and they rely on imports of EEE POM. Over the same period of time, e-waste generation in the region increased by 61 per cent from 1.8 Mt (4.9 kg/inh) in 2010 to 2.8 Mt (6.6 kg/inh) in 2019. The largest e-waste generator is Saudi Arabia, with 595 kilotons (kt) (or 13.2 kg/inh) of e-waste, while the lowest is Comoros (0.6 kt, or 0.7 kg/inh), which reflects the vast diversity of the region.



The e-waste generated encompasses a variety of products, with small equipment (category 5 in EU Directive 2012/19/EU, on waste electrical and electronic equipment, also known as the WEEE Directive), temperature exchange equipment (category 1) and large equipment (category 4) comprising the highest share of e-waste generated, for a total of 76 per cent. The annual growth rate is positive for all categories of e-waste, with the exception of screens and monitors (category 2), which shows negative growth rates. Nevertheless, a declining trend has been observed, meaning that the pace of growth has slowed over time for most products.

From the information gathered, the Arab States appear to have collected and managed a total of 2.2 kt (0.01 kg/inh) of e-waste in 2019, which equates to a collection rate of 0.1 per cent, compared to e-waste generated. However, it is worth highlighting that data on e-waste collection and on environmentally sound management (ESM) was available for only four Arab States. E-waste collection for ESM takes place in Jordan, the State of Palestine⁽¹⁾, Qatar and the United Arab Emirates. Jordan has the highest e-waste collection rate of 2.6 per cent (equivalent to 0.1 kg/inh), followed by Qatar (0.5 per cent, or 0.07 kg/inh). Egypt has seven licensed treatment facilities for e-waste, but it was unable to provide official data on the amount of e-waste collected and managed. Some other countries in the region have limited initiatives for e-waste collection that are implemented by various formal and informal actors, but quantitative information was not available owing to lack of organized, separate collection infrastructure for e-waste and/or the absence of official data.

Since 2010, e-waste generation has increased in the Arab States by 61 per cent – to 2.8 Mt in 2019. The collection rate of e-waste is 0.1 per cent in 2019.

No specific e-waste legislation is in place in any State in the region. Of the countries that took part in the broader review (i.e. Algeria, Egypt, Jordan, Lebanon, Oman, Qatar, Saudi Arabia, Sudan and the United Arab Emirates along with the State of Palestine), 10 have well-developed legal and regulatory frameworks in the field of waste management and/or more specifically on hazardous waste, which should also apply to e-waste. In the States that do not have a comprehensive law on general waste (e.g. Mauritania), all e-waste and other hazardous waste is treated alongside municipal waste. The United Arab Emirates is the only country in the region that, as of 2021, applies the principle of extended producer responsibility (EPR) for e-waste and batteries waste, and Jordan and Lebanon are in the process of establishing an EPR system for e-waste. Egypt, Jordan, Lebanon and the United Arab Emirates have adopted legislation or regulations on ESM for waste, but none specifically for e-waste. In most countries, the Ministry of Environment is the custodian government entity for legislating on e-waste. Municipalities and other waste management authorities, as well as private companies and non-governmental organizations (NGOs), collect e-waste for further management, mostly landfilling. Producers and importers play a minimal role in e-waste collection in the region, owing to the overall absence of an EPR system. Informal operators of e-waste also exist in the region and focus on valuable e-waste fractions.

All the Member States of the Arab States region have ratified the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, which sets out formal provisions to govern the transboundary movement of e-waste. Specific national bans on e-waste imports are enforced in some Arab States, including Algeria, Egypt, Kuwait, Lebanon, the State of Palestine, Qatar and the United Arab Emirates. No country in the region has a specific export ban in place, except where the type of e-waste in question is not compliant with the Basel Convention. Kuwait and Qatar, for instance, allow the export of e-waste under

An extended producer responsibility legislation on e-waste has been adopted in one country in the region.

Basel Convention conditions only if there is no plant for recycling or treating waste of that kind within the country.

Only thirteen countries in the region fulfil their formal statistical reporting obligations under the Basel Convention. These statistics therefore do not provide a complete picture of the transboundary movement of e-waste. According to existing reports, between 2016 and 2019, Algeria, Egypt, Qatar and the United Arab Emirates exported 1 645 tons of e-waste for resource recovery and recycling. No e-waste imports have been reported in national reports submitted under the Basel Convention by the Arab States. Low-quality data and a lack of control over the transboundary movement of e-waste in line with the Basel Convention pose a threat to ESM of e-waste and increase the likelihood of illegal movements. Furthermore, imports of used EEE result in more e-waste in recipient countries and place burdens on existing e-waste management. Meanwhile, the functionality of imported used EEE and, where mixed with e-waste, the quantities of imported used EEE remain unknown.

Managing e-waste presents an economic opportunity; in 2019, e-waste generated among Arab States contained an estimated 13 t of gold, 0.47 t of rare earth metals, 1.05 Mt of iron, 96 kt of copper, 167 kt of aluminium, and 0.7 kt of cobalt, representing a total value of USD 3 billion in secondary raw materials. Over 99 per cent of e-waste in the region is not collected or sent to ESM facilities for proper management. Most e-waste is sent to landfill, with the informal sector cherry-picking some valuable components. The hazardous substances in e-waste - comprising, for the region in 2019, at least 4.1 t of mercury, 1.3 t of cadmium, 10.5 kt of lead, 4 kt of brominated flame retardants and 5.6 Mt of greenhouse gas-equivalents from refrigerants – are poorly managed within the region and are most likely to be untreated, which poses various risks to the stability of a healthy environment.

Given the assessment of e-waste management, statistics and legislation and the existing challenges, it is evident that the changes that will need to be applied to improve existing e-waste management systems vary from country to country. Countries in the region will need to: a) introduce and enforce a robust legal and policy framework focused on ESM of e-waste; b) develop basic collection and treatment infrastructure, where absent; and c) monitor and reinforce existing e-waste management systems to make them more efficient and effective. Adequate financing, monitoring and cooperation among all stakeholders are essential to ensure that the implementation of policies on e-waste management is sustained. Five general recommendations, listed below, can be drawn from the analysis presented herein, and an all-encompassing approach, involving all actors and stakeholders in each country or territory, will be needed in order to implement them. A somewhat greater level of transnational cooperation will also be necessary to reduce the burden of large investments and secure the necessary turnaround. The five recommendations are: (i) prevent e-waste generation; (ii) adopt EPR-based legislation and policies; (iii) provide basic collection and treatment facilities; (iv) improve the collection and treatment of e-waste; and (v) raise awareness, pollute less and work safer.

E-waste generated in the Arab States represents a total value of USD 3 billion of secondary raw materials.