

### 3. OVERVIEW OF E-WASTE STATISTICS FOR THE ARAB STATES

This chapter elaborates on the key e-waste statistical findings made through the above-described approach and methodology for the 21 countries, plus the State of Palestine, that participated in this study.

#### A. EEE POM and e-waste generated

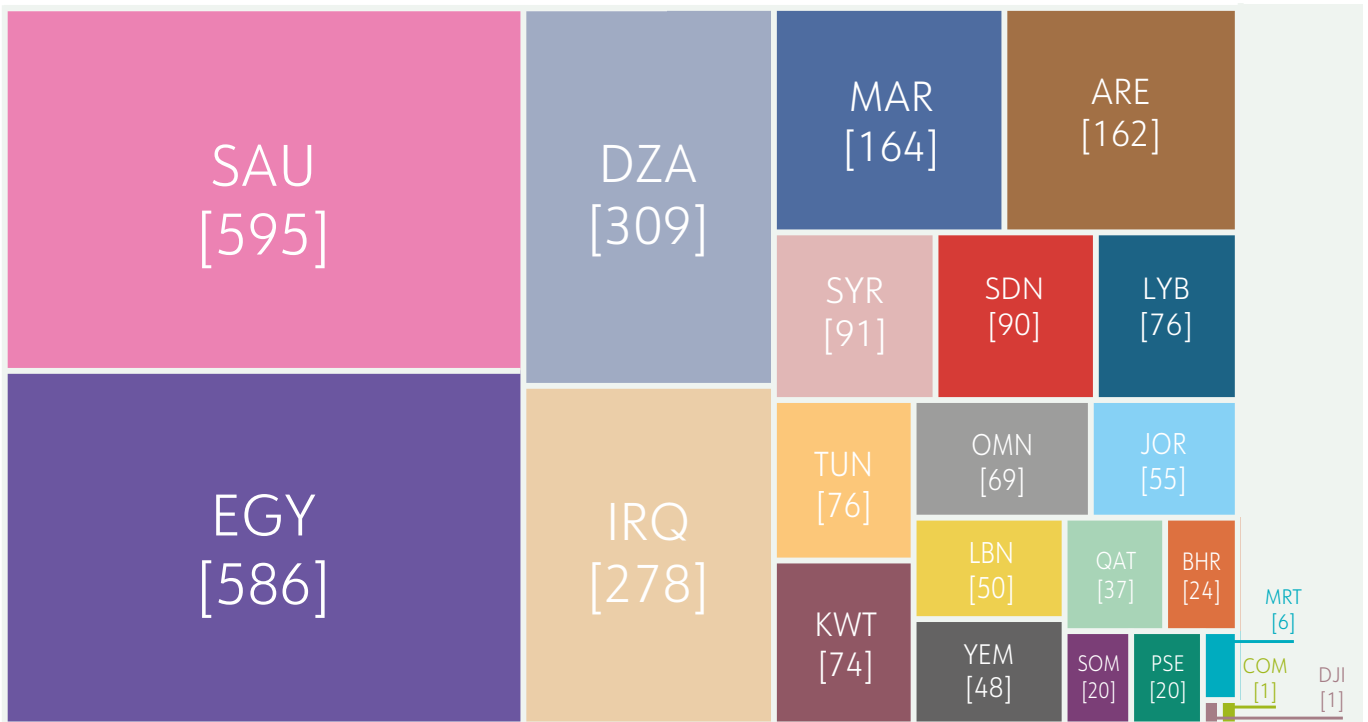
The quantity of EEE POM in the Arab States region increased from 3.2 Mt (8.8 kg/inh) in 2010 to 4.1 Mt (9.5 kg/inh) in 2019, a rise of 30 per cent. As the region mostly imports, rather than manufactures, EEE, domestic generation of EEE is very limited. E-waste generation in the region increased from 1.8 Mt (4.9 kg/inh) in 2010 to 2.8 Mt (6.6 kg/inh) in 2019, a rise of 61 per cent, equivalent to an average annual increase of roughly 100 kt.

The total amount of EEE POM increased slowly from 3.2 Mt (8.8 kg/inh) in 2010 to 3.4 Mt (8.6 kg/inh) in 2015. After 2015, the amount of EEE POM increased at a faster pace, reaching 4.1 Mt (9.5 kg/inh) in 2019. (See Figure 6.) All data for the 21 countries, plus the State of Palestine, that participated in the study are shown in Annex IV.

Figure 6. EEE POM and e-waste generated in the region, in kilotons, 2010-2019



Figure 7. E-waste generated 2019 disaggregated by State/territory, in kilotons, 2019



E-waste generation and EEE POM show a positive correlation with GDP adjusted for PPP. The per inhabitant amount of EEE POM is highest for Qatar (24.9 kg/inh), while the largest e-waste generator is Saudi Arabia (16.3 kg/inh).

The amount of EEE POM in the region varies widely, from 0.8 kg/inh in Comoros to 24.9 kg/inh in Qatar. (See Figure 8.) There is a correlation between the amount of EEE POM and GDP per capita adjusted for PPP, which indicates that the amount of EEE POM increases as GDP adjusted for PPP increases; this correlation appears to be less strong above an adjusted GDP per capita of USD 40 000. Egypt had the greatest level of EEE POM in the region in absolute terms, with 1.1 Mt of EEE POM in 2019, followed by Saudi Arabia (758 kt), Iraq (459 kt) and Algeria (458 kt).

The amount of e-waste generated per inhabitant was highest in Saudi Arabia (16.3 kg/inh) and lowest in Comoros (0.6 kg/inh). (See Figure 9.) Similar to EEE POM, e-waste generated showed a positive correlation with GDP adjusted for PPP, which lessened above an adjusted GDP per capita of USD 40 000. Saudi Arabia is also the largest generator of e-waste in the region in absolute terms, having generated 595 kt of e-waste in 2019, equivalent to 21 per cent of all e-waste generated in the region that year. The second-largest generator of e-waste is Egypt (586 kt; 20.7 per cent), followed by Algeria (309 kt; 10.9 per cent) (see Figure 7).

Figure 8. Amount of EEE POM (in kilograms per inhabitant) compared with GDP adjusted for PPP (in thousands of United States dollars per capita), 2019

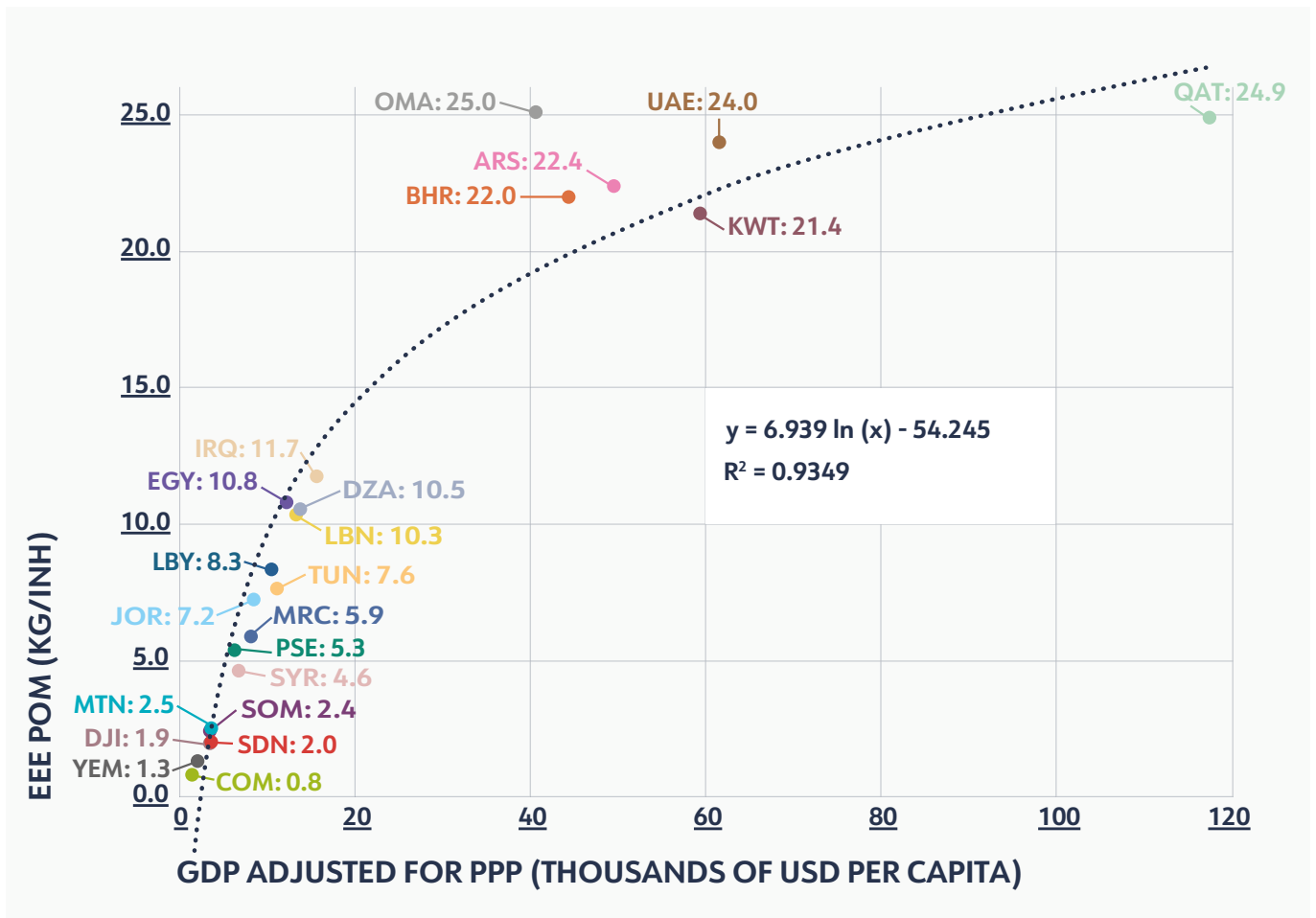
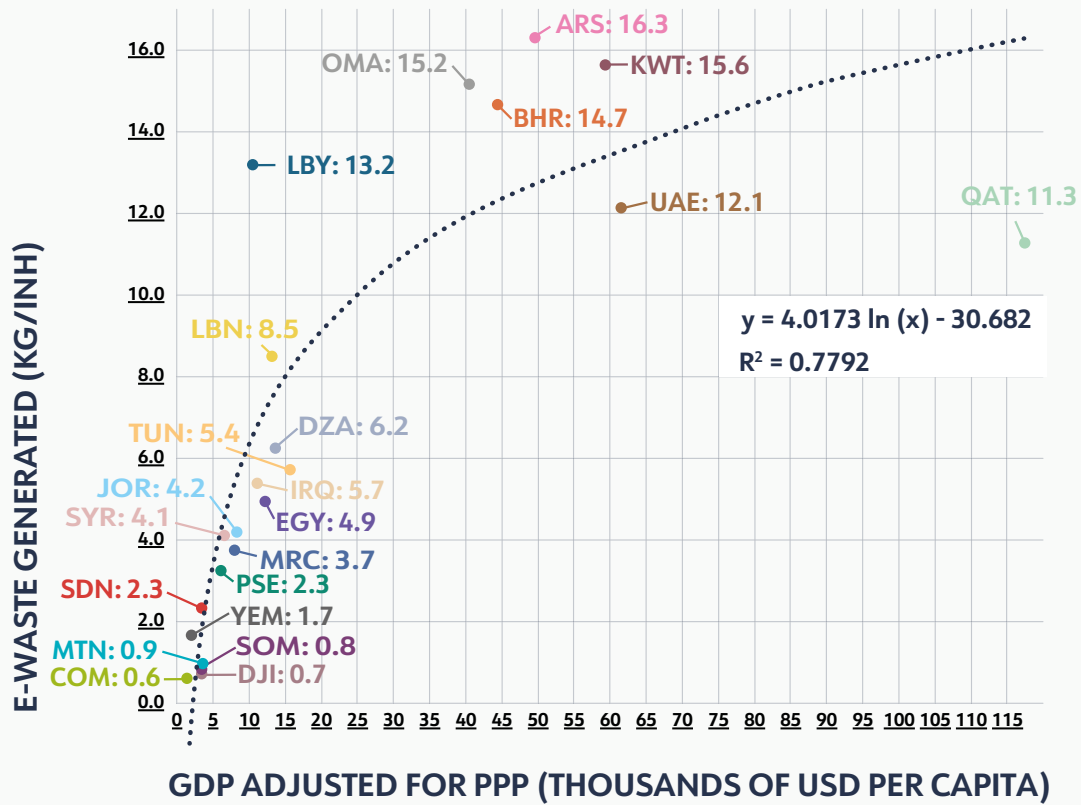


Figure 9. Amount of e-waste generated (in kilograms per inhabitant) compared with GDP adjusted for PPP (in thousands of United States dollars per capita), 2019



## B. E-waste categories

**Small equipment (category 5 in the WEEE Directive), temperature exchange equipment (category 1) and large equipment (category 4) represent the greatest proportion (by weight) of e-waste generated in the region, at 76 per cent. The annual growth rate is positive for all categories, except for screens and monitors, which shows negative growth rates.**

When disaggregating the quantities of e-waste generated into the six e-waste categories, the largest category is small equipment (e.g. microwaves) with 34 per cent, followed by large equipment (e.g. washing machines) (21 per cent) and temperature exchange equipment (e.g. refrigerators) (21 per cent) (see Figure 11). Large equipment and temperature exchange equipment are large and bulky appliances which have a relatively high unit weight and long lifespans and are characterized by a possession rate of no more than two appliances per household in low and middle income economies in the region. Small equipment, on the contrary, has a relatively lower unit weight. Small equipment is purchased more frequently and has a shorter lifespan, meaning that it is more often discarded. The smallest category in terms of e-waste generated are lamps (e.g. LED lamps), representing 2 per cent of all e-waste generated by weight; these items are used in every household but have a very small unit weight.

Year-to-year growth rates for all categories of EEE are positive, with the exception of screens and monitors (e.g. LED televisions), the amount of which was placed on the market decreased in mass. This is because, over the past decade, a technological change in computer and television screens has been witnessed, with virtually all cathode ray tube screens having been replaced with flat panel displays. The decrease in the proportion by weight of small IT equipment (e.g. mobile telephones) can be understood to be a result of miniaturization. Although most growth rates are positive, a declining trend has been observed, meaning that the pace of increase is slowing down over time for most products. (See Figure 10.)

Figure 10. Year-to-year growth rates for e-waste generated, 2011-2019

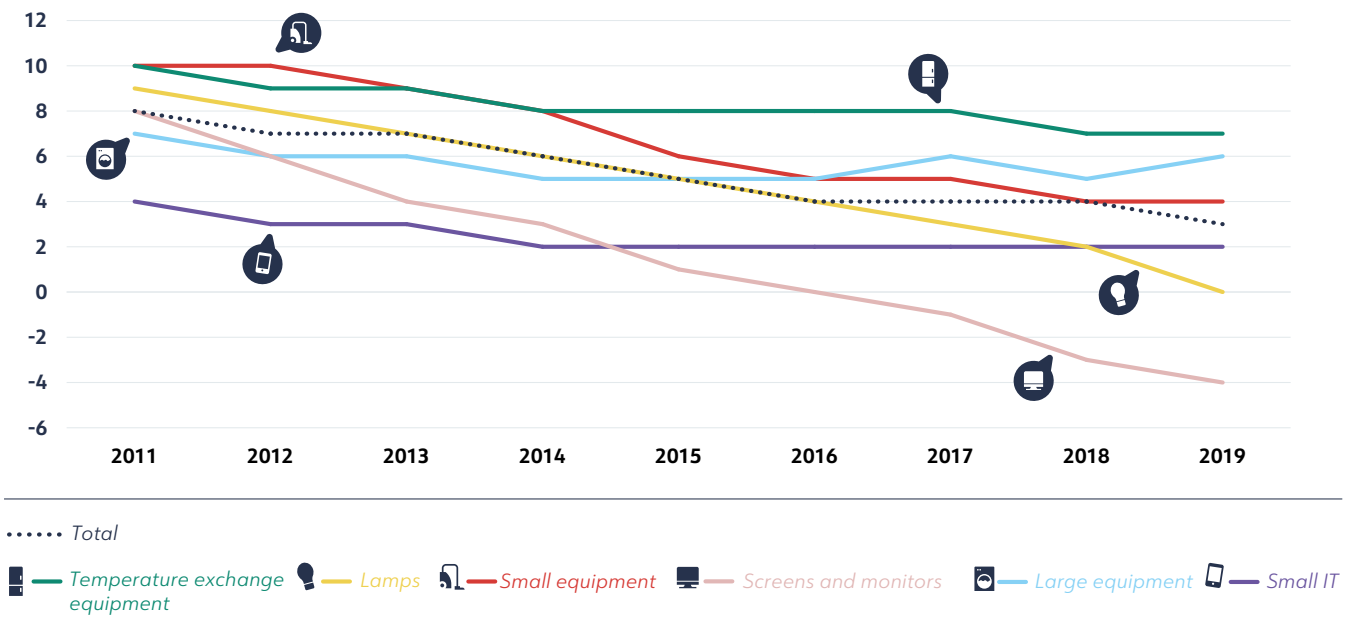
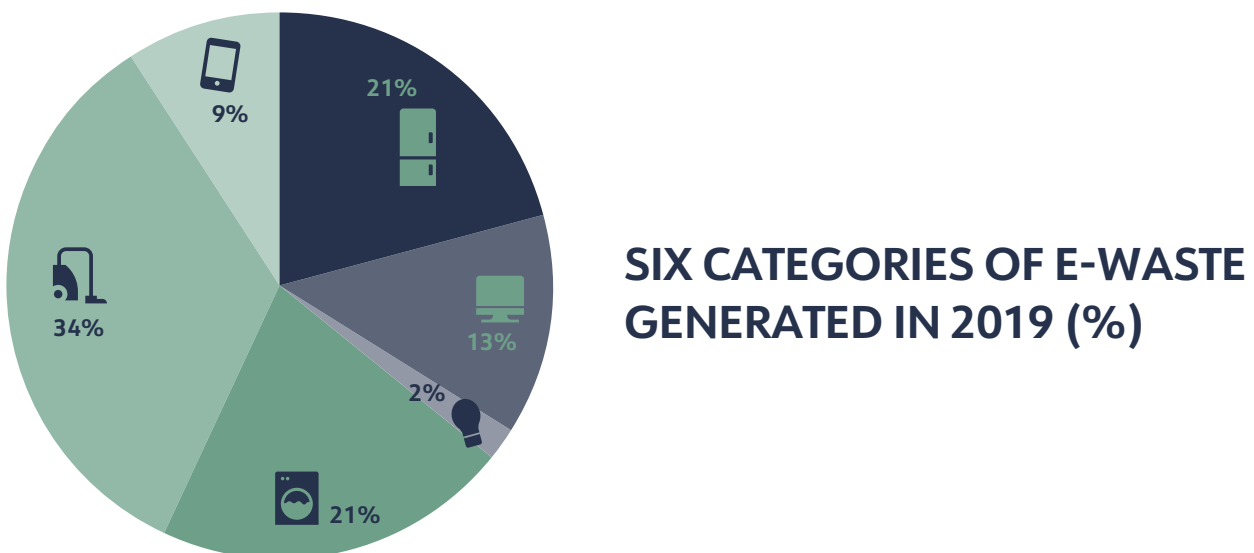


Figure 11. E-waste generated disaggregated by category, 2019



## C. Environmentally sound management of e-waste

A total of 2.2 kt (0.01 kg/inh) of e-waste was collected for environmentally sound treatment in 2019 across four Arab States, representing a collection rate of 0.1 per cent of all e-waste generated in the Arab States region. Jordan had the highest e-waste collection rate (2.6 per cent; 0.1 kg/inh), followed by Qatar (0.5 per cent; 0.07 kg/inh). No e-waste collection information was available for 18 of the participating economies owing to a lack of organized, separate collection infrastructure for e-waste and/or an absence of official data.

Data on e-waste collected and ESM were available for only four economies (Jordan, the State of Palestine, Qatar and the United Arab Emirates). The total e-waste collected for ESM in these four economies was 2.2 kt (0.01 kg/inh). (See Figure 12.) They all collect low volumes of e-waste: in 2019, Jordan collected 1.3 kt, the United Arab Emirates 0.7 kt, Qatar 0.2 kt and the State of Palestine 0.08 kt.

With regard to the proportion of e-waste generated in the State or territory that is collected, known as the e-waste collection rate, Jordan achieved the highest rate in the region according to the data received, having collected 2.6 percent of all e-waste for ESM. Jordan also had the highest e-waste collection rate per inhabitant, at 0.1 kg/inh. According to the preliminary results of a survey conducted by the Jordanian Department of Statistics in 2019, 4 per cent of a study sample of e-waste generated by municipalities was delivered to specialist recycling companies. This percentage is lower for the medical sector, where only 1 per cent of the e-waste sampled was sent for recycling. The remaining waste was mostly sent to landfill.

Qatar collected 0.5 per cent of its e-waste, while the State of Palestine and the United Arab Emirates each collected 0.4 per cent. This suggests that, while those economies have the necessary infrastructure, it does not cover the entire population and there is limited access to the e-waste generated.

Other participating countries had very limited e-waste collection in place and could not provide data on e-waste collection owing to the incompatibility of classifications or the absence of official data. There was no statistically relevant correlation observed between GDP adjusted for PPP and e-waste collection in the region. The average amount of e-waste collected per inhabitant in the Arab States region was equivalent to 0.01 kg/inh, giving a collection rate of 0.1 per cent. The Arab States that are not shown in Figures 12 and 13, do not collect data on these areas and likely do not perform e-waste collection for ESM, therefore they are set to 0.

Figure 12. E-waste collected for ESM, in kilograms per inhabitant, 2019

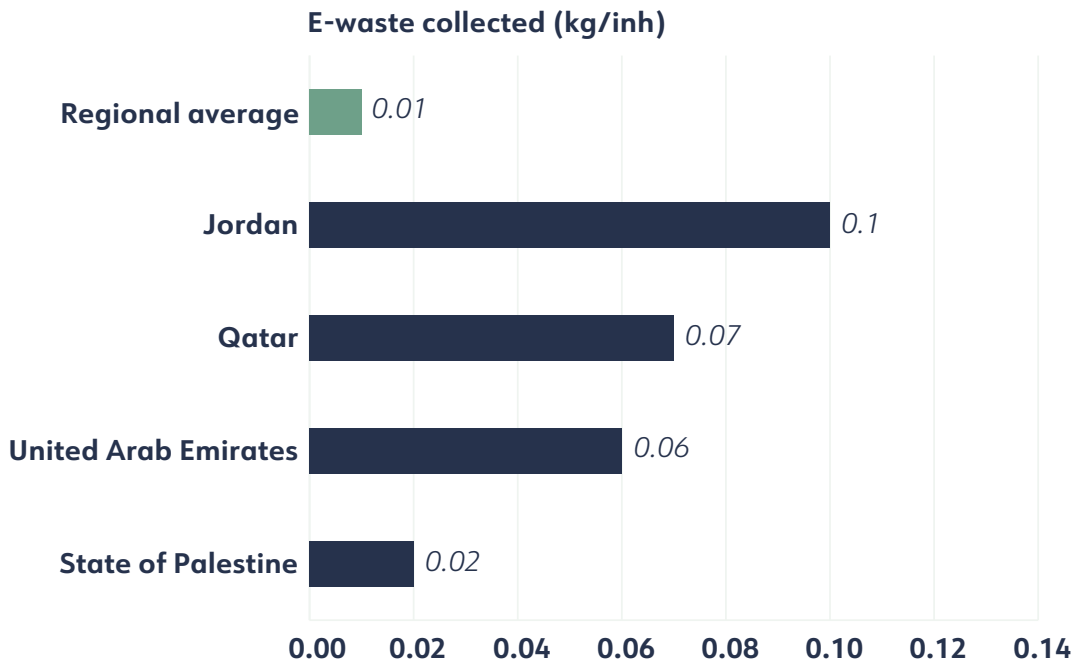
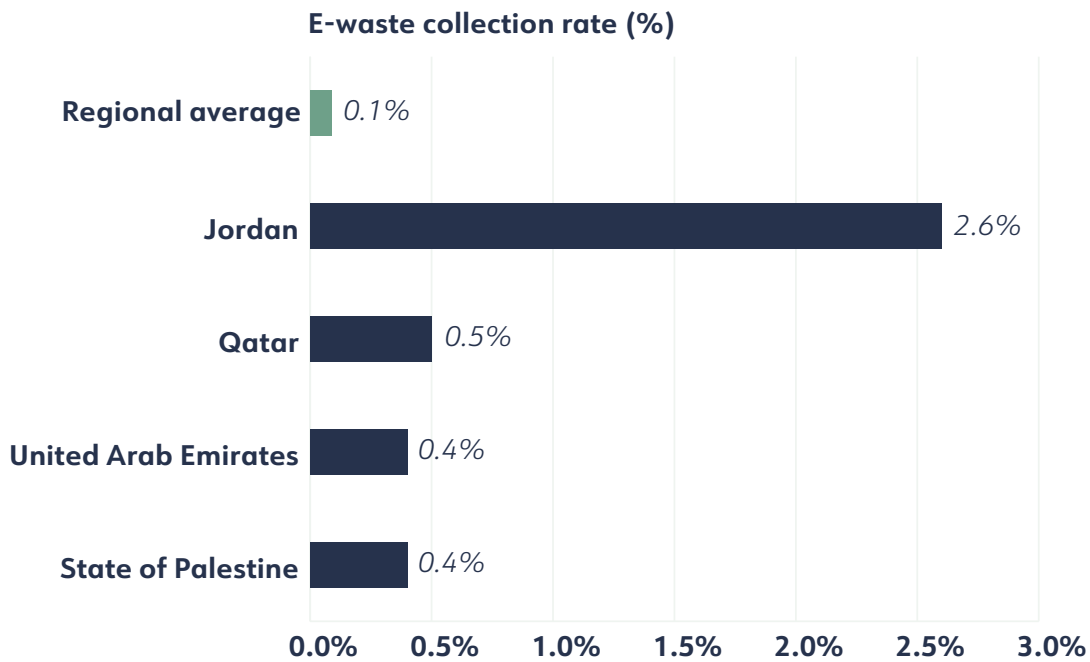


Figure 13. E-waste collection rate, as a percentage, 2019





## 4. TRANSBOUNDARY MOVEMENT OF E-WASTE

Several regulations at national, regional and international levels have been developed to monitor and control the transboundary movement of e-waste. The Basel Convention is the only global treaty on hazardous waste and other wastes, which encompasses e-waste. It was adopted on 22 March 1989 and entered into force on 5 May 1992. The Parties to the Convention adopted the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste in 2006 and the Cartagena Declaration on the Prevention, Minimization and Recovery of Hazardous Wastes and Other Wastes in 2011 in order to promote ESM of hazardous waste, including e-waste.

The Basel Convention defines the “hazardousness” of waste on the basis of the substances present in the waste materials, and it classifies the waste as either hazardous or non-hazardous depending on its chemical properties. The Basel Convention sets out a detailed prior informed consent procedure with strict requirements for the transboundary movement of hazardous wastes. The transboundary movement of hazardous waste and e-waste is subject to that procedure when an importing party and/or an exporting party deems the e-waste concerned to be hazardous, as determined under the provisions of its national law. The following waste subject to transboundary movement are deemed “hazardous wastes” for the purpose of the Basel Convention:

- Wastes that belong to any category contained in Annex I of the Convention, unless they do not possess any of the characteristics contained in Annex III of the Convention.
- Wastes that are not covered under the previous group but are considered to be hazardous waste by the domestic legislation of the party of export, import or transit.

It is important to note that national guidelines concerning the definition of waste may differ, and a material that is regarded as waste in one country may be considered non-waste in another country. In addition to the provisions of the Basel Convention, some parties set national threshold values to distinguish between hazardous and non-hazardous waste, including e-waste.

### A. Overview of e-waste import and export legislation and policies

**All Arab States are parties to the Basel Convention, which controls the transboundary movement of e-waste, among other kinds of waste.**

So far, the regulation of the import and export of e-waste in the Arab States region mostly relies on the provisions of the Basel Convention, to which all Arab States reviewed are signatories<sup>(9)</sup>. Nonetheless, some Arab States, including Algeria, Egypt, Kuwait, Lebanon, the State of Palestine, Qatar and the United Arab Emirates have also issued national laws on the import and export of hazardous waste, including e-waste. In particular, Egypt has legislation that restricts the import of EEE equipment older than five years from the year of production, with the exception of some EEE in good condition, and completely prohibits the importation of e-waste. In addition, article 46 of Egypt’s Telecommunication Regulation Act (No. 10/2003) prohibits the import of used telecommunication equipment for the purpose of trading (GIZ 2014a).