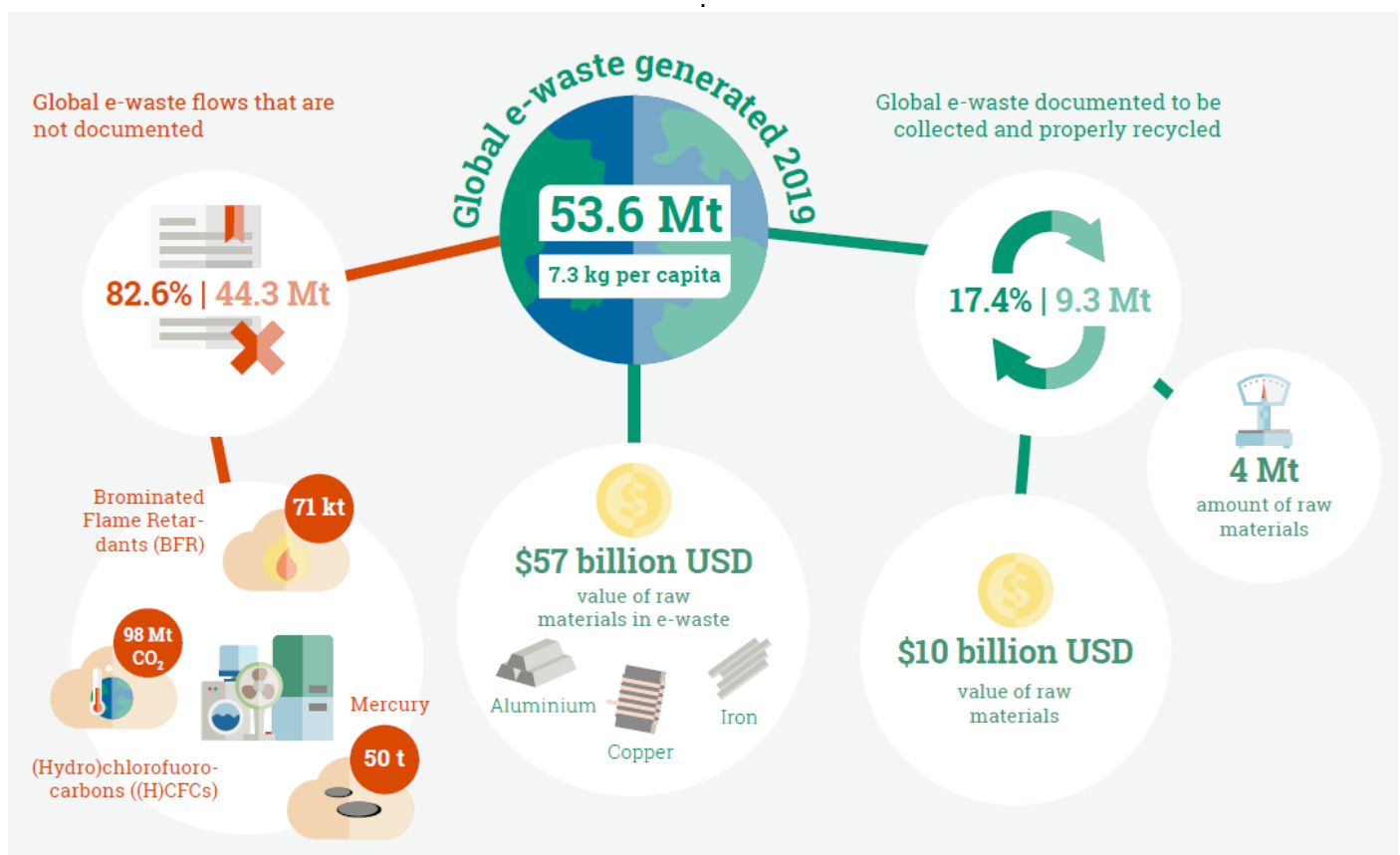


# e-Waste: a first step towards the end of the banana rhetoric?

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The consumption of Electrical and Electronic Equipment (EEE) is strongly linked to widespread global economic development. EEE has become indispensable in modern societies and is enhancing living standards, but its production and usage can be very **resource demanding** [1]. Higher levels of disposable incomes, growing urbanization and mobility, and further industrialization in some parts of the world are leading to growing amounts of EEE. On average, the total weight (**excluding photovoltaic panels**) of global EEE consumption increases annually by 2.5 million metric tons (Mt). After its use, EEE is disposed of, generating a waste stream that contains **hazardous** and **valuable** materials. This waste stream is referred to as e-waste, or Waste Electrical and Electronic Equipment (**WEEE**). In 2019, the world generated a striking **53.6 Mt** of e-waste, an average of 7.3 kg per capita. The global generation of e-waste grew by 9.2 Mt since 2014 and is projected to grow to 74.7 Mt by 2030 – almost **doubling** in only 16 years. The growing amount of e-waste is mainly fuelled by higher consumption rates of EEE, short life cycles, and few **repair, recycle, or reuse** options (find more options thanks to the **11Rs** list). The exponential growth associated with e-waste streams translates inevitably, in a linear economy, in ever increasing carbon emissions – reaffirming the need for emerging strategies [2] such as the **circular economy** or **urban mining**.



**Figure:** Among the 53.6 Mt of e-waste (generated worldwide in 2019). A large percentage (82.6%), in the linear economy paradigm, has a simple End-of-Life pattern [3]: landfilled or incinerated (8%), transnational movement (14%), undocumented (78%). The forthcoming business models to manage these streams will generate direct value from the proper collection of raw materials as well as obtaining subventions from the European Green Deal (as it directly addresses SDG 12).

(Note: the backbone of this paper is largely inspired from [4])

## References

- [1] L. Belkhir, et al., J. Clean. Prod. (2018), 177, 448–463.
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