

### Key points

- Waste-to-Energy (WtE) capacity should be evaluated on a European level.
- Municipal Waste is not the only waste treated in WtE plants. There is also commercial and industrial waste input.
- The residues resulting from increasing recycling activities need recovery treatment in order to avoid landfilling.

### What is the current situation regarding Waste-to-Energy capacity?

In 2014, EU-28 produced 240.9 million tonnes of municipal waste of which 44% were recycled and 28% (more than 67 million tonnes) went to landfills. Waste-to-Energy plants treated 27% of this waste stream. This corresponds to 65 million tonnes.

However, municipal waste is only a small part (about 10%) of the total waste generation.

WtE plants<sup>1</sup> already help dealing with other wastes – such as commercial and industrial waste and residues from recycling.

This demonstrates that in order to properly assess the WtE capacity, one should take into account that other waste streams than municipal waste are also relevant inputs for WtE facilities.

In total, in EU-28, 435 WtE plants treated 83 million tonnes in 2014.

WtE capacity in Europe is spread unevenly and should therefore be evaluated not only on the national, but also on the European level.

As it can be seen in the histogram below, the best performing countries in terms of recycling demonstrate that recycling goes hand in hand with both, the need for complementary energy recovery of the residual waste and the progressive diversion from landfilling.

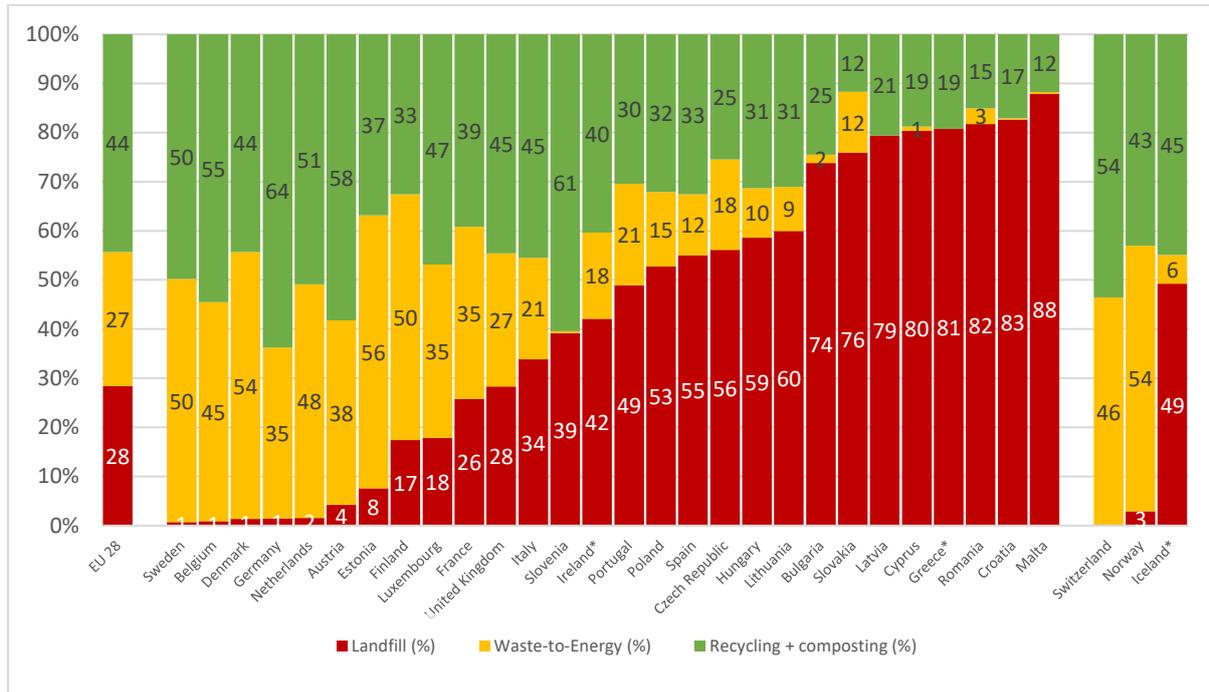
13 EU countries still landfill more than 50% of their municipal waste. They have no or very little WtE capacity. These countries need responsible capacity planning, considering efforts of waste prevention and recycling and the need to treat rejects from recycling activities by WtE. Complementary, they can cooperate with countries with more WtE capacity to move up the waste hierarchy by recovering energy from waste which would otherwise be landfilled.

If waste is not suitable for recycling because it is too dirty, degraded or contains substances of high concern, WtE fulfils a hygienic task to prevent this waste from being spread into the environment and from harming human health. This is how WtE helps to achieve a clean circular economy.

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<sup>1</sup> The terminology WtE plants in this context refers to plants treating municipal and similar commercial and industrial waste. It does not cover hazardous waste installations nor industrial plants like cement kilns or power plants that co-incinerate waste.

## Municipal Waste treatment in Europe (data from Eurostat 2014)



### What is to be expected with the new Circular Economy targets for municipal waste for 2030?

The Circular Economy targets proposed by the European Commission would

- reduce landfilling to 10% (taking into account that some countries are already below 10% landfilling the average would be 7% (= 17 million tonnes landfilled)<sup>2</sup>
- increase re-use and recycling to 65% (= 157 million tonnes), thereby increasing rejects from recycling activities going to WtE to about 13 million tonnes<sup>3</sup>

**In order to fulfil the targets proposed for municipal waste, WtE capacity for 80 million tonnes would be necessary to treat the residual municipal waste and rejects from recycling processes (240.9<sup>4</sup> - 17 - 157 + 13 million tonnes).**

<sup>2</sup> Some Member States will get extensions on landfill targets beyond 2030, but as this will also be the case for recycling, the final projections would not change.

<sup>3</sup> This is a conservative estimation considering that ca. 10% rejects from recycling activities of which 2% will still be landfilled and 8% will go to WtE. In reality we expect more than 10% rejects from recycling facilities assuming that quality of recycled substances has a role to play.

<sup>4</sup> As it is difficult to forecast the amount of municipal waste that will be generated in 2030 (depends on population growth, urbanisation factor and efforts to prevent waste), the amount from 2014 was taken. The Commission's Impact Assessment SWD(2014) 207 final PART 1/6 does not provide estimated figures for waste generation in 2030. It mentions waste stabilisation during the last years and states inter alia: "Waste generation is expected to increase in the coming years in several MS (albeit not necessarily coupled to GDP increases) particularly in those MS with lower levels of per capita income (past experience shows that stabilisation of waste per capita may be expected after a certain level of GDP/capita has been attained);"

In 2014 the EU-28 WtE capacity was 83 million tonnes, so one could conclude that there is sufficient capacity to fulfil the municipal waste targets in line with the Circular Economy Package. However, the input into WtE plants is not only municipal waste, but also industrial and commercial waste. In industrialised countries, the ratio is often 50/50.

With missing reliable EU-wide comparable data on how much commercial and industrial waste is landfilled and recycled it is difficult to estimate how many sorting residues and rejects from recycling facilities will go to WtE in the future as the targets set in the Circular Economy Package focus mainly on municipal waste.

However, it can be assumed that a significant part of sorting residues (75.5 million tonnes in the EU in 2014 according to Eurostat), which are not suitable for recycling will be diverted from landfills and used for energy recovery – treating the waste higher up the hierarchy and supplying citizens and neighbouring industries with sustainable and affordable energy. At the same time metals are recycled from the bottom ash<sup>5</sup> and the mineral part of bottom ash can be used for construction purposes, replacing the use of gravel and sand<sup>6</sup>.

**Conclusion:** The current amount of WtE capacity in EU28 is just sufficient for the implementation of the *municipal* waste targets suggested by the Commission in the Circular Economy Package.

However, thermal treatment capacity is also needed for residual *commercial and industrial* waste. Although the EU does not (yet) have a solid data base for the treatment of commercial and industrial waste, it can be assumed that a considerable amount of the rejects from the recycling of these waste streams need sustainable treatment in WtE plants in order to avoid landfilling.

Therefore, we do not expect WtE overcapacities in Europe as a whole.

Note: Figures are based on Eurostat 2016, reference year 2014

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**For more information, please contact:**



**Confederation of European Waste-to-Energy Plants**

[www.cewep.eu](http://www.cewep.eu)

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<sup>5</sup> [Bottom Ash Fact Sheet](#)

<sup>6</sup> United Nations Environment Programme, “Sand, rarer than one thinks”, report, March 2014.