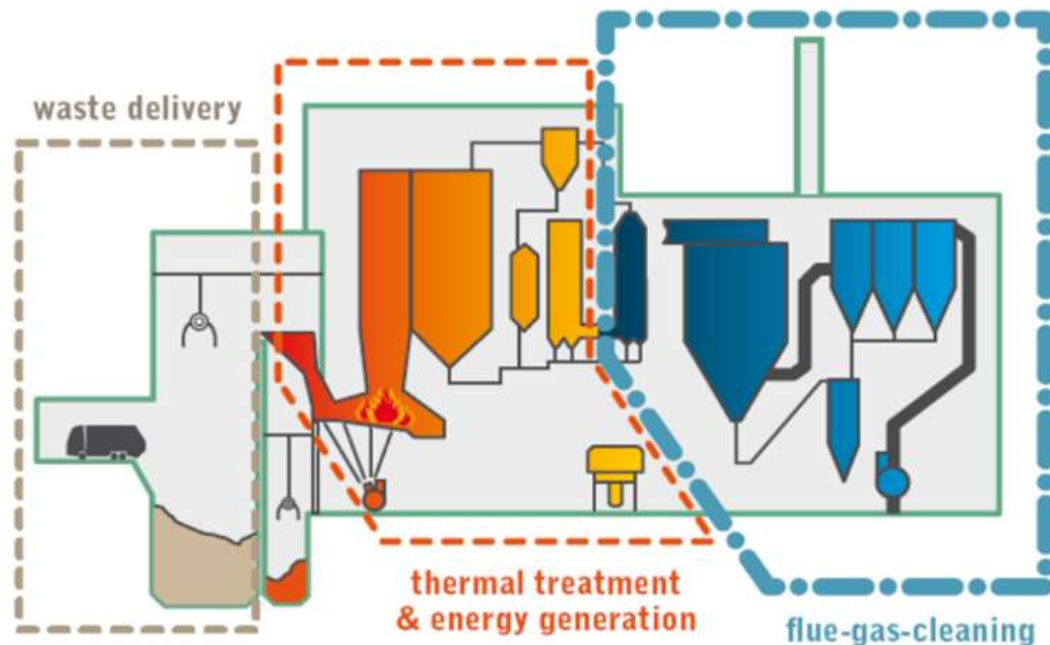


cewep

Confederation of European  
Waste-to-Energy Plants

## Waste-to-Energy Plant



European  
Waste-to-Energy  
industry

Marta Gurin  
REVIVE workshop  
Lommel, 6<sup>th</sup> December 2019



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

**Umbrella association of the operators of Waste-to-Energy Plants across Europe.**

Thermal treatment (incineration) of household and similar commercial & industrial waste not suitable for recycling.

Low level of emissions.

Recovery of energy.

Recycling of metals & secondary aggregates.



## CEWEP's focus

- ■ Close and permanent contact to the European Institutions
- ■ Proactively contributing to future legislation
- ■ Observing/contributing to on-going studies
- ■ Undertaking our own studies





## CEWEP's main message

### Waste-to-Energy - enabler of Circular Economy:

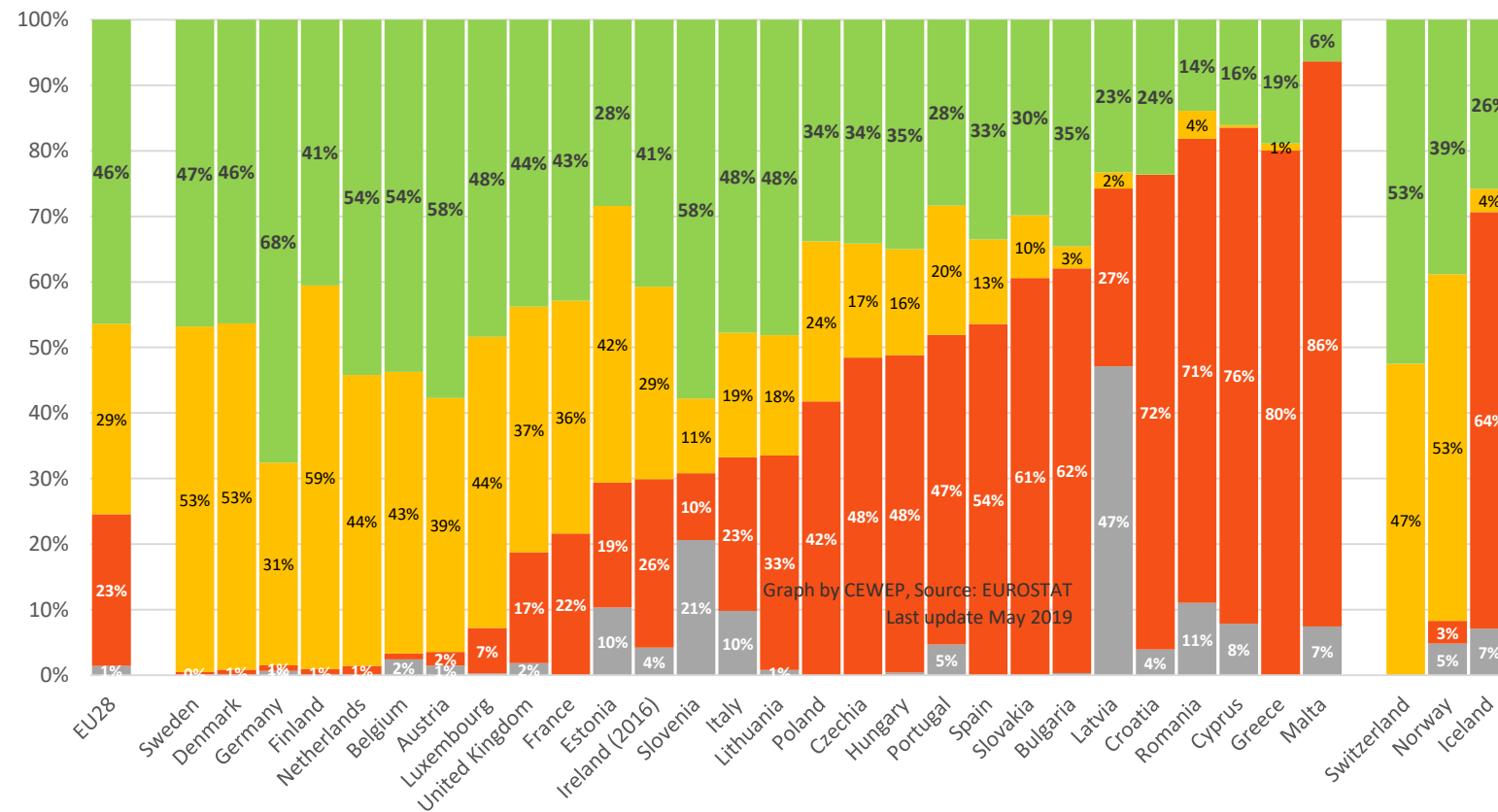
- ■ WtE helps, together with recycling, to minimize landfilling;
- ■ WtE turns non-recyclable waste in an environmentally safe way into secure energy and valuable raw materials;
- ■ Keeps the circle clean by dealing with unwanted organic components in the material cycles (act as a pollutant sink, fulfilling a hygienic task for the society).





# Municipal waste treatment in 2017

EU 28 + Switzerland, Norway and Iceland



Graph by CEWEP, Source: EUROSTAT  
Last update May 2019

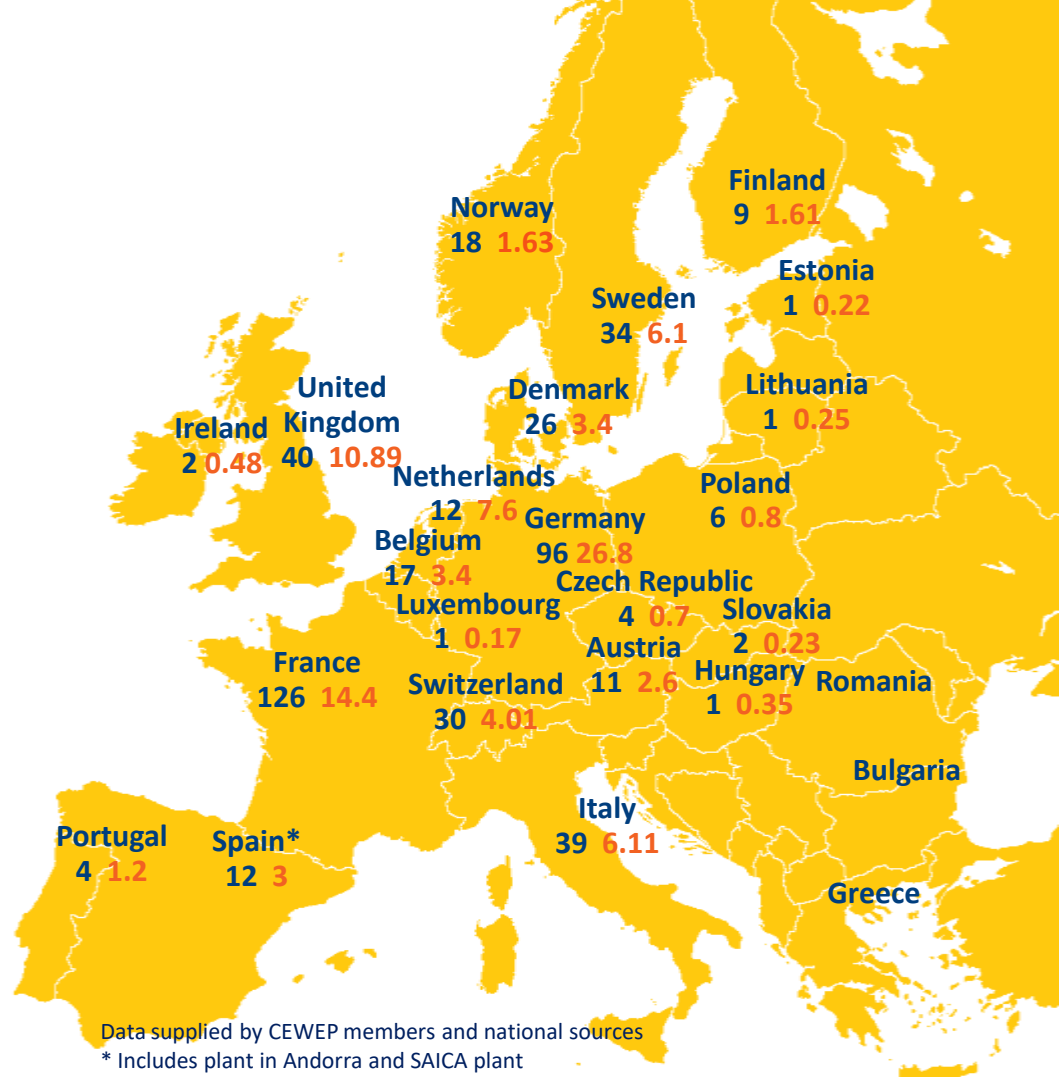
- Landfill
- Waste-to-Energy
- Recycling + Composting
- Missing data



Percentages are calculated based on the municipal waste reported as generated in the country

## WtE across Europe in 2017

- WtE Plants operating in Europe  
(not including hazardous waste incineration  
plants) : **492**
- Waste thermally treated in WtE plants  
(in million tonnes): **96**



Data supplied by CEWEP members and national sources

\* Includes plant in Andorra and SAICA plant



## WtE plants in brief – average parameters

- ■ Grate furnace (more than 90%)
- ■ Capacity: 200,000 t/a (range from 25-30 kt/a to 1.4 mt/a)
- ■ Typical steam parameters: 400°C, 40 bar
- ■ Input: household waste + similar commercial & industrial waste
- ■ LHV: 10 MJ/kg
- ■ Bottom ash: 20 – 25% in mass; 10% in volume





## WtE plants in brief – average parameters

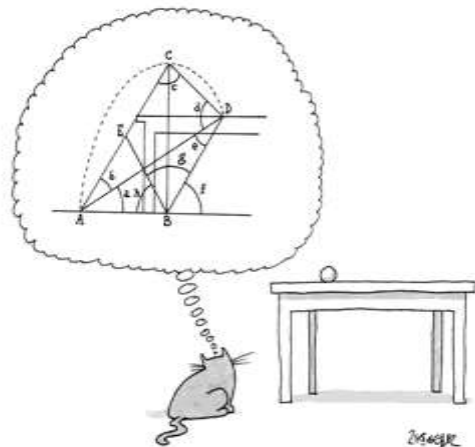


- ■ Production mode: CHP (~60% plants), electricity only (~25% plants), heat only (~15% plants)
- ■ Energy efficiency: CHP 85-90% , electricity only 20-25%, heat only 90%
- ■ Nominal electricity output: 20MWe
- ■ Energy output: 50% energy RES (RED biomass definition)
- ■ Age: 20 years
- ■ Availability: 7,800 h/a – 8,000 h/a (main cause of unplanned stoppage: boiler issues)



## What's on the EU policy table?

- ■ European Green Deal
- ■ EU Funds & Sustainable finance (Taxonomy)
- ■ Implementation of Circular economy targets by 2035: 65% recycling, 10% landfill
- ■ Implementation of BREF Waste Incineration
- ■ Implementation of RED
- ■ Plastics strategy
- ■ Interface between Chemicals, Products and Waste





## What is possible?

WtE plant operators focus on:

- ■ Sector coupling
- ■ Maximising heat delivery
- ■ Recycling metals and minerals from bottom ash
- ■ CO<sub>2</sub> capture and utilisation or storage
- ■ Hydrogen production





## WtE and H<sub>2</sub> production

- RES: electricity prices and premiums, access to the grid
- CO<sub>2</sub> reduction potential
- Market for H<sub>2</sub>
- High costs – need for support
- Air quality in the cities – decarbonisation of transport
- Small amount of projects so far

**Thank you for your attention!**



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