Waste-to-Energy in the EU

Challenges and global perspectives on climate change, circular economy and waste management

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CONFEDERATION OF EUROPEAN
WASTE-TO-ENERGY PLANTS

Representing owners and operators of WtE plants (public & private) since 2002

CEWEP members:
83 M tonnes, 419 plants in 24 countries

Total in Europe: 100 M tonnes, 498 plants

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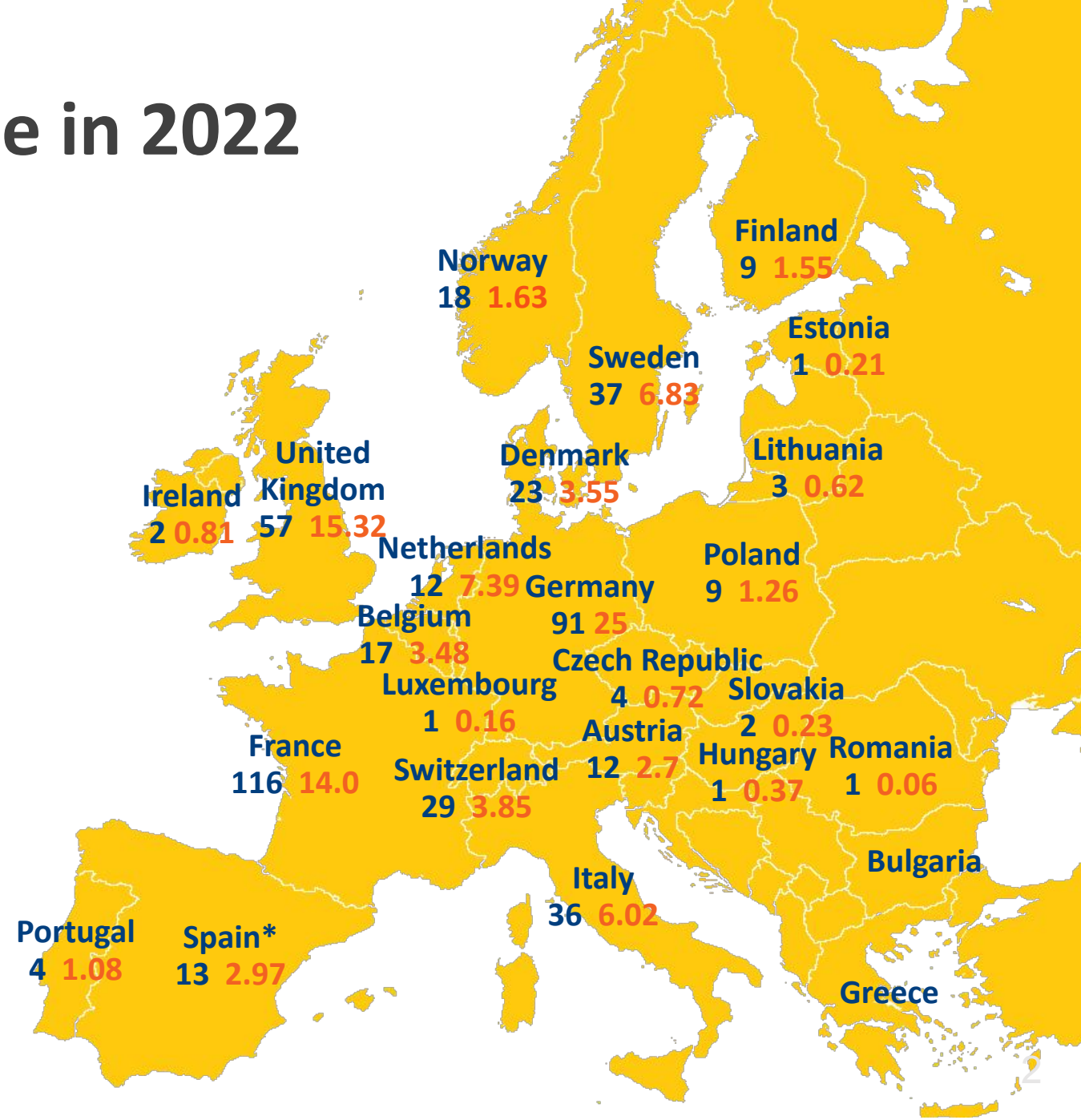
Waste-to-Energy in Europe in 2022

- **Number of WtE Plants operating in Europe** (not including hazardous waste incineration plants): **498**
- **Residual waste thermally treated: 100 Million tonnes**



Data supplied by CEWEP members and national sources

***: Includes plant in Andorra and SAICA plant**

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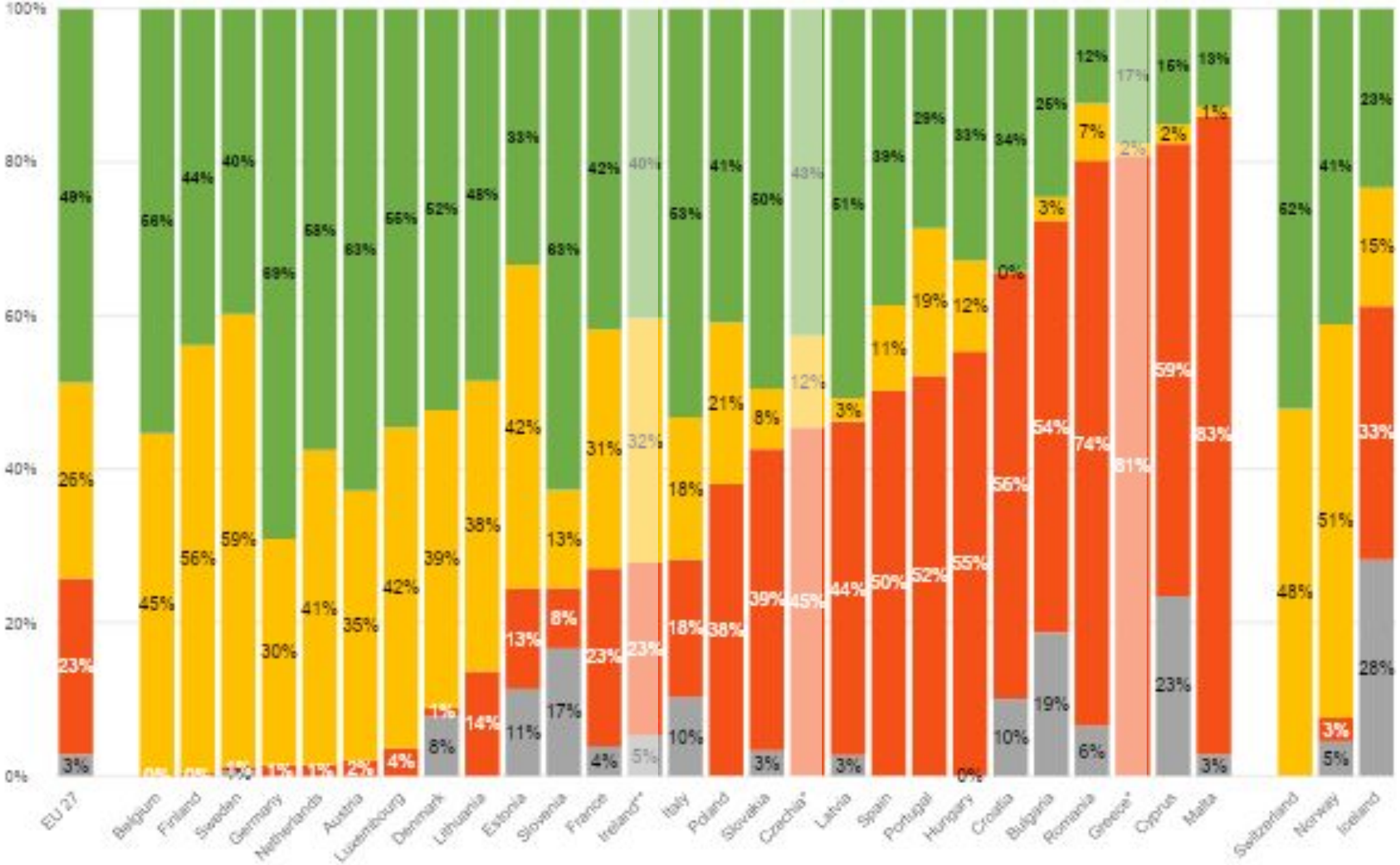
9 Member States landfill over half of their municipal waste



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

Source: Eurostat, Oct. 2024
*: last available data 2021
**: last available data 2020

WtE plays a role in

- **Waste management**

help divert waste from landfills; WtE complements recycling; hygienic task

- **Energy generation**

affordable + secure energy

- **Material recovery**

recovery of metals and minerals from bottom ash

- **Decarbonisation**

replace fossil fuels; CCUS where feasible

contributing to the EU targets

WtE: Aligned with the new Commission's key targets

Competitiveness

- Support industry in implementing Green Deal
- Energy security + low price + technology neutral
- Also through circularity (Draghi report)

Implementation

- Make it simple, regular checks with stakeholders
- Waste legislation: to keep resources in the EU

Decarbonisation

- Committed on the target
- Technology-neutral

Clean Industrial Deal

Strategy to support EU industry and defend EU competitiveness

- Central to the Commission's work until 2029

Six areas, including

- **Affordable energy** (Action Plan for Affordable Energy)
  - Mentions encouraging better use of process heat
  - Lowering energy costs, heating and cooling strategy, attracting investments, crisis readiness
- **Lead markets**
  - "*building a business case for permanent carbon removals*" and developing measures "*to acknowledge the use of captured carbon in a wider range of products, and* "prevent double counting of embodied carbon emissions, should waste incineration be included in the ETS"
- **Financing:** Clean Industry State Aid Framework
- **Circular economy**
  - Circular Economy Act Q4 2026

Circular Economy Act

Scheduled for Q4 2026

- Presented as central for decarbonisation and reducing dependencies
- Focus on the market for secondary raw materials and waste
  - Higher supply of high quality recyclates
  - Stimulate demand for secondary raw materials
  - Harmonising definitions of end-of-waste
  - Measures to incentivise diversion from landfill towards re-use and recycling through more effective separate collection

In practice

- Revision of Waste Framework Directive and Landfill Directive
- Focus on market = not a deep revision
- EP and Council can still propose amendments outside the scope proposed by the Commission

Revision(s) of the WFD and Landfill Directive

Latest WFD (small review): targeted on textiles and food waste

- Agreement reached on 19th February 2025
- Requires **evaluation of WFD + LD by 31 December 2029**
- Assesses "*the possibility of **introducing prior sorting of mixed municipal waste** to prevent waste which can be recovered for preparing for reuse or recycling **from being [sent] to waste incineration or landfilled**.*"

Indicative timing of revisions

Textiles and Food Waste
Publication Q2/Q3 2025
Transposition by Q2 2027

Circular Economy Act
Proposal in Q4 2026
Agreement 2028
Publication 2028/2029
Transposition 2031

Large WFD/LD revision
Proposal Q4 2029
Agreement 2032
Publication 2032
Transposition 2034

Waste & EU ETS

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EU ETS Timing set in revised ETS Directive

Monitoring, Reporting, Verifying
1st January 2024

Commission Impact Assessment
(+ legislative proposal)
31st July 2026

Inclusion of other sectors
(WtE+ others, e.g. landfills)
1st January 2028

End of opt out
31st December 2030

(Based on the results of the impact assessment)

WASTE & EU ETS - CEWEP'S MAIN CONSIDERATIONS

WtE sector taking its responsibility for CO2 emissions. What is the best way to do this?

A possible inclusion of the waste sector in EU ETS should incentivise high environmental performance (in line with the waste hierarchy) – Not the opposite

1. **Avoid waste leakage to unsustainable routes, like**:

a) Export to other countries outside the EU with lower costs but also lower climate/environmental/social standards
b) Illegal routes favouring the infiltration of criminal activities
c) Diversion of waste to treatment that is cheaper, but lower in the waste hierarchy than material and energy recovery

2. **Consider higher social costs for municipalities and the whole waste management chain, incl. Recycling.**

3. **No empirical evidence that the inclusion of WtE will foster recycling and separate collection.**

4. **The EU ETS may limit waste acceptance in WtE plants, especially of those streams containing plastic waste ("Blacklisting").** Where will these waste streams go to?

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POLICY BRIEF | RECOMMENDATIONS BEFORE PRICING CARBON IN WASTE MANAGEMENT

- **The Impact Assessment must be holistic for the waste sector as a whole**
- **The Impact Assessment must interlink Environmental & Climate legislation**: Landfill rates are still very high in some MS
- **Multiple Taxation of WtE in the EU should be avoided**
- **How to ensure Polluter-Pays-Principle? Plastic producer responsibility:** EPR Schemes
- **WtE offsets its fossil CO2 emissions and contributes to decarbonization targets already today:**
  CEWEP Climate Roadmap
- **CCUS is a concrete vision, but it is not a silver bullet for the WtE sector**:

  Limitations: **Need for space, Energy penalty, Time for implementation, Lack of business models, High Costs, Lack of CO2 infrastructure, Lack of a solid regulatory framework**

- **The elephant in the room:** Diverting recoverable waste from landfills to higher steps in the waste hierarchy such as recycling & WtE can significantly cut methane emissions and yield greater CO2 equivalent savings than carbon capture technologies or what a strong CO2 price can achieve. (study Prognos; CE Delft)

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Waste sector has huge potential for climate mitigation

- Study by **Prognos and CE Delft** (2022) examined the CO2eq reduction potential of the European waste management sector for EU27+UK.

- **Saving of 150 Mt CO2eq annually:** applying current EU waste laws and the same recycling and landfill targets as set for Municipal waste to Industrial and Commercial waste by 2035.

- **Saving of 296 Mt CO2eq annually:** With more ambitious recycling targets and **diverting waste that can be used for material or energy recovery from landfills.**

prognos

CE Delft
Committed to the Environment

Almost equal to the total GHG emissions of Spain for 2022

Let’s not waste our resources!

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