ecoprog

CEWEP Waste-to-Energy Congress 2025

Overview of WtE Markets

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About

ecoprog is a leading management consulting firm specialized in the European waste & bio business based in Cologne, Germany. As a recognized industry insider, ecoprog advises international clients on management decisions with a political-, technical- or economic-environmental background. ecoprog combines experience and network in the industry with a unique database, on the basis of which it analyses the global waste & bio industry.

Main activities of ecoprog include

- Potential and economic analysis for new waste infrastructure,
- Waste flow analyses, modelling and prognosis of future waste amount developments,
- Strategy consulting,
- Market and competition analyses.

Among the clients of ecoprog are leading players of the energy and waste business, utilities, infrastructure operators, associations and political decision makers.

Since its foundation in 2005 as a private limited company, ecoprog has been independent and owner-managed; currently ecoprog employs about 12 specialists in the waste and bio business.

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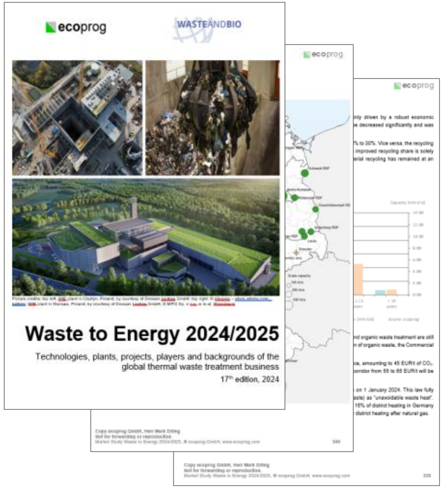

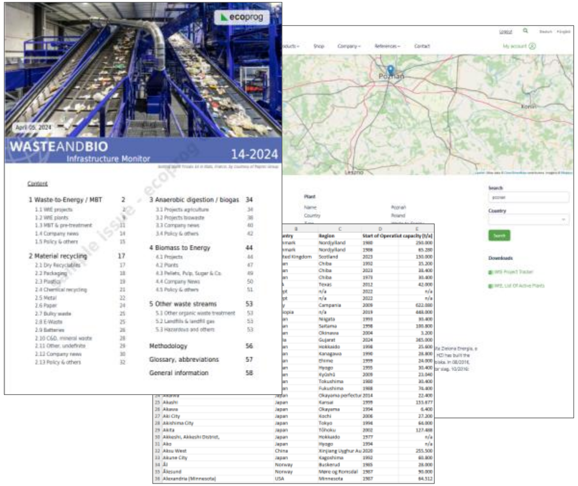

Waste-to-Energy

The Waste-to-Energy (WtE) market has been a core focus of ecoprog's business activities since its foundation more than 20 years ago. As part of its market intelligence product line, ecoprog annually provides analysis and outlooks of the global WtE market. In addition, ecoprog tracks news and updates on WtE asset and new projects worldwide on a weekly basis.

As a consulting firm, ecoprog has carried out various analyses of the European and global WtE markets for many years. These have included market analyses of selected segments and regions of the WtE market, waste modelling for new WtE projects as well as Due Dilligence of WtE plant operators.

As result of its long-term engagement in the WtE sector, ecoprog possesses exclusive data, in-depth expertise, and a strong, sustainable network with the WtE business both in Europe and globally.

This data has also served as the foundation for this presentation.

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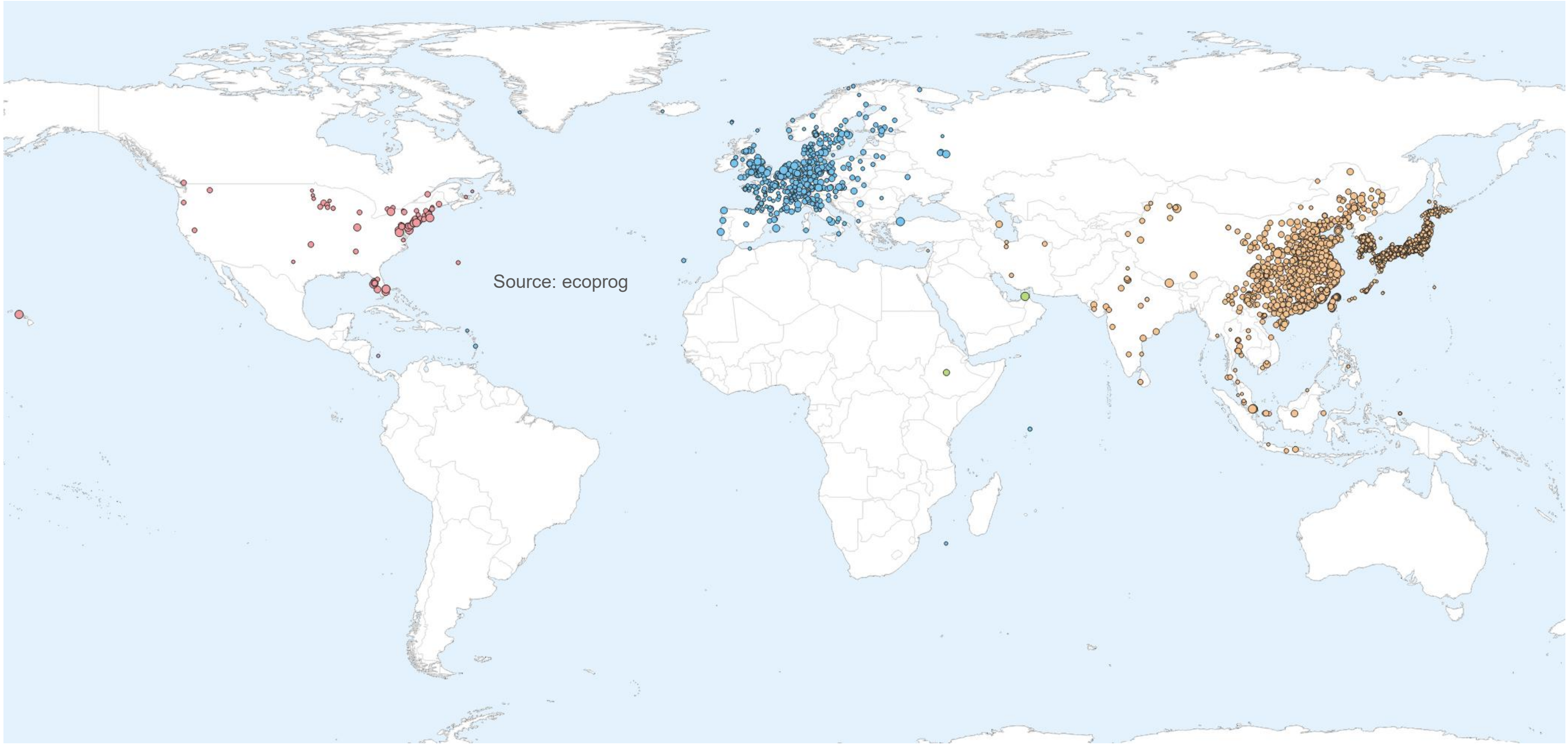
Active WtE plants worldwide



As of today, still, dumping/landfilling remains the dominant type of waste treatment worldwide.

On a global scale, landfill diversion remains the main growth driver of the WtE market.

This applies especially for non-recyclable waste.

Market drivers worldwide

Growth of population

More people produce more waste. As of today, the number of living people worldwide is estimated at just below 8 billion. By 2050, the UNO assumes 9.7 billion.

Economic growth

In recent years, economic growth - especially in emerging countries - has led to more industrial waste and more consumption, and therefore more household waste.

At the same time, it has enabled increased funding for waste management.

Urbanisation

Urbanisation typically results in higher waste per capita - particularly from packaging - due to urban lifestyles. Large waste volumes in limited space lead to a shortage of dumping/landfilling, increasing the pressure to introduce more ambitious types of waste treatment.

Waste characteristics

Especially in poorer countries, waste has traditionally been almost entirely organic. However, in recent years, the share of plastic and composites has been steadily increasing. As a result, traditional waste treatment methods such as dumping or composting are no longer sufficient.

Climate change

The waste sector is a significant source for greenhouse gases, particularly methane emissions from landfills which are about 25 times more harmful to the climate than CO_2. As a result, waste management has been identified as a major segment to fight climate change.

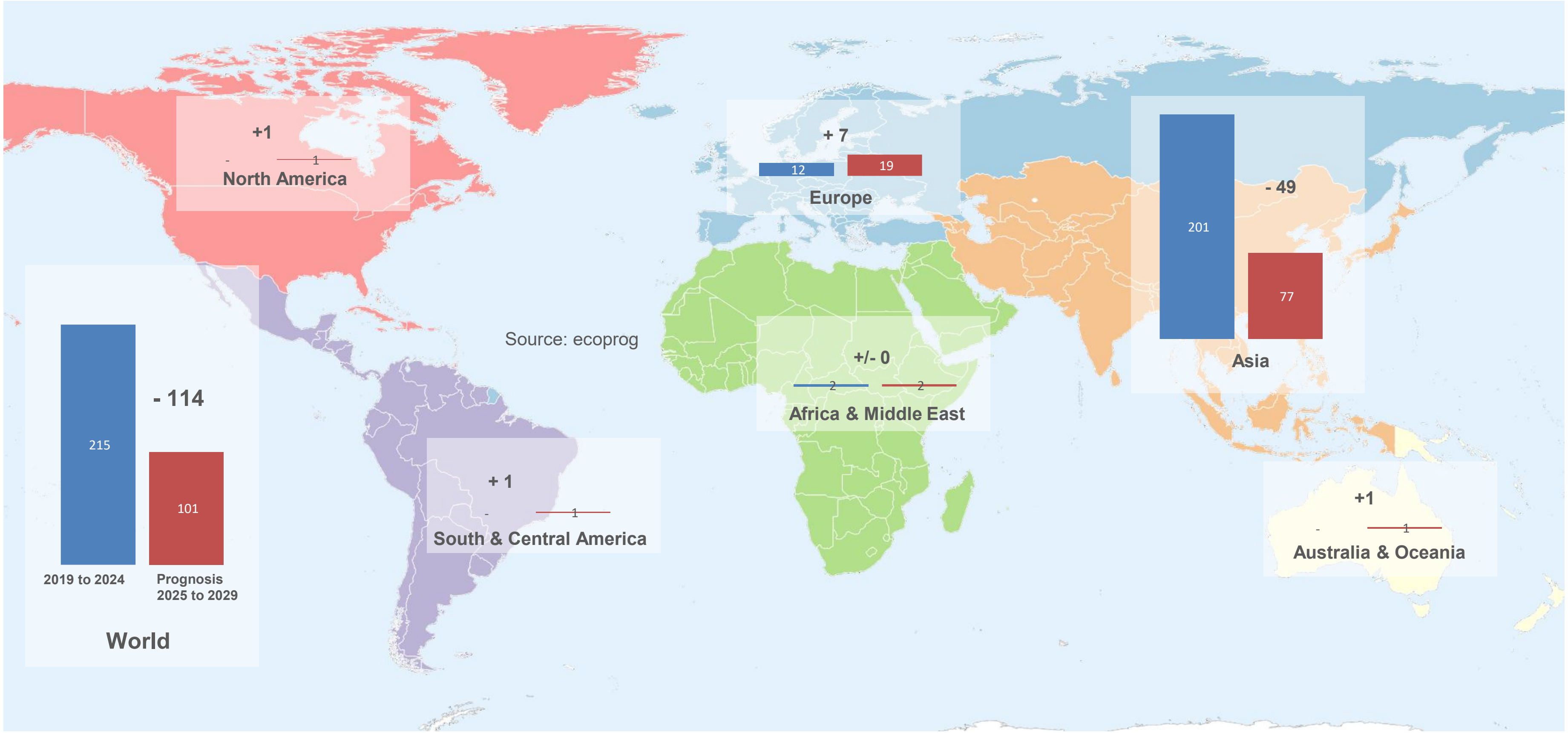
Public awareness

Public awareness is a key driver in more progressive countries. However, in emerging countries, awareness is often focused on health risks caused by poor waste management.

Organisation

Especially in emerging markets, the level of organisation in the waste sector is increasing, e. g. by introducing waste fees for private households or technical standards.

Prognosis of WtE capacity commissioned worldwide



Newly installed capacity in million tonnes, source: ecoprog

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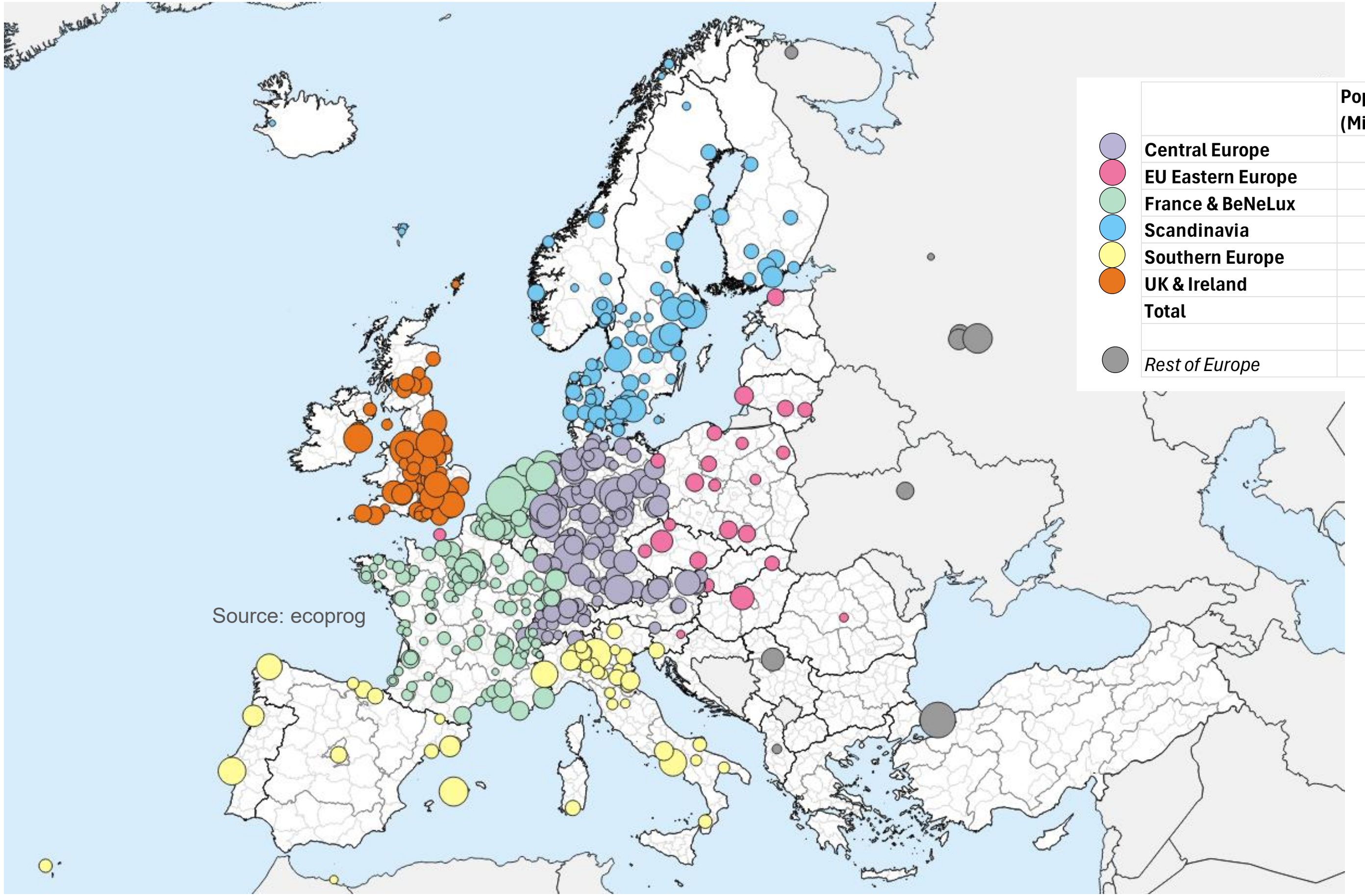
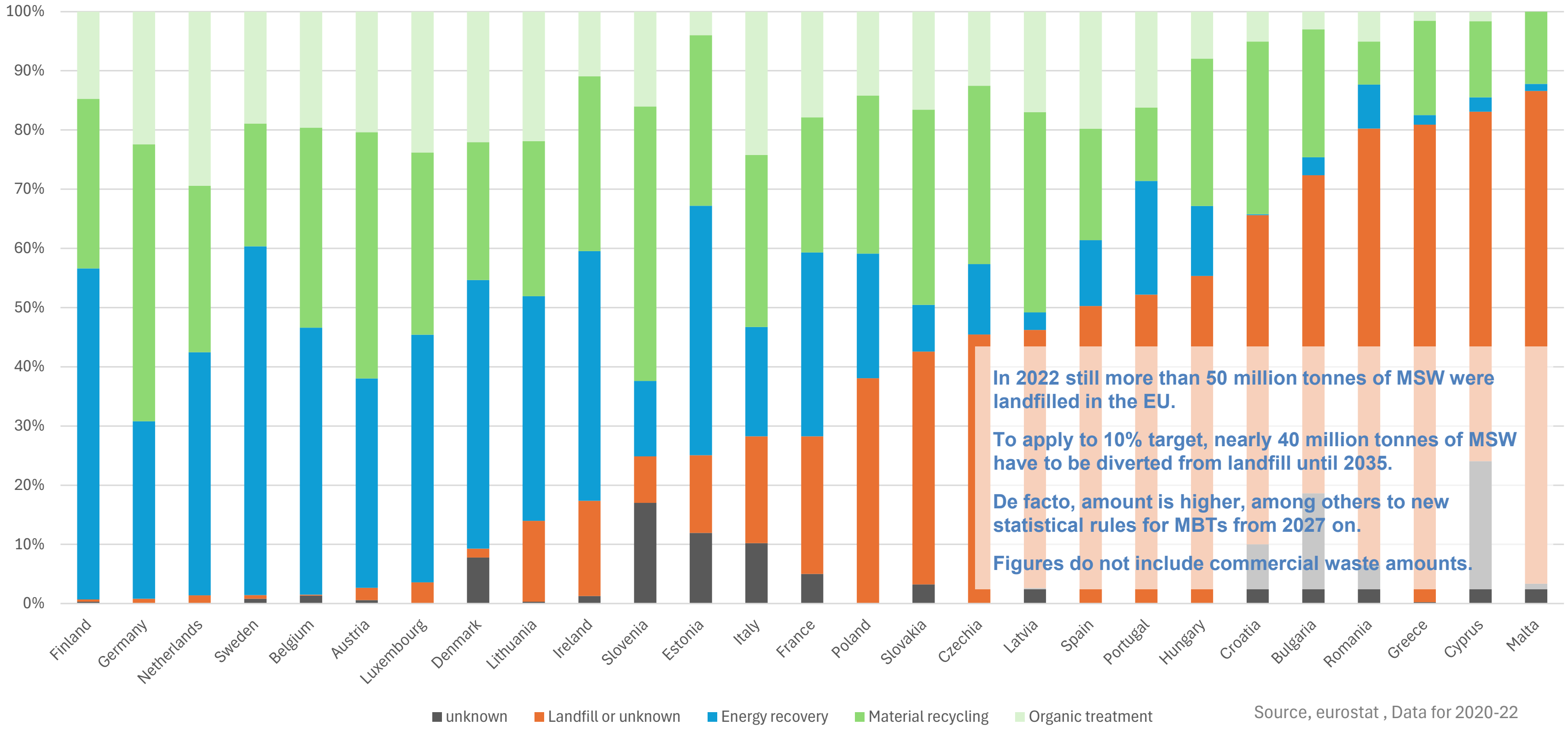
Active WtE plants in Europe



	Population (Mio.)	WtE plants	WtE Cap. (mln t/a)	WtE Cap. (% of MSW)
Central Europe	101	139	34	53%
EU Eastern Europe	101	24	4	10%
France & BeNeLux	99	163	29	54%
Scandinavia	28	89	14	87%
Southern Europe	128	52	11	17%
UK & Ireland	73	68	20	68%
Total	**530**	**547**	**111**	**42%**
Rest of Europe	*292*	*12*	*3*	*< 3%*

MSW treatment in the EU



In 2022 still more than 50 million tonnes of MSW were landfilled in the EU.

To apply to 10% target, nearly 40 million tonnes of MSW have to be diverted from landfill until 2035.

De facto, amount is higher, among others to new statistical rules for MBTs from 2027 on.

Figures do not include commercial waste amounts.

Source, eurostat , Data for 2020-22

Drivers of EU legislation

2000 · 2005 · 2010 · 2015 · 2020 · 2025 · 2030

1999
EU landfill directive

2006 - 2020
Amount of biodegradable municipal waste (BMW) sent to landfills (in regard to1995) : 75%

2009
Landfills not applying to the new standards have to close.

2009 - 2013
Amount of biodegradable municipal waste (BMW) sent to landfills (in regard to1995) : 50%

2016 - 2020
Amount of biodegradable municipal waste (BMW) sent to landfills (in regard to1995) : 35%

2018
EU circular economy package

2020
EU Taxonomy Regulation

2020
Introduction of output criteria
MSW recycling rate: 50%

2025
MSW recycling rate: 55%

2027
MBT loose recycling status for organic input

2028
EU ETS integration (together with landfilling?)

2030
MSW recycling rate: 60%

2030?
BREF for landfilling

2035
MSW recycling rate: 65%
MSW landfilling rate: 10%

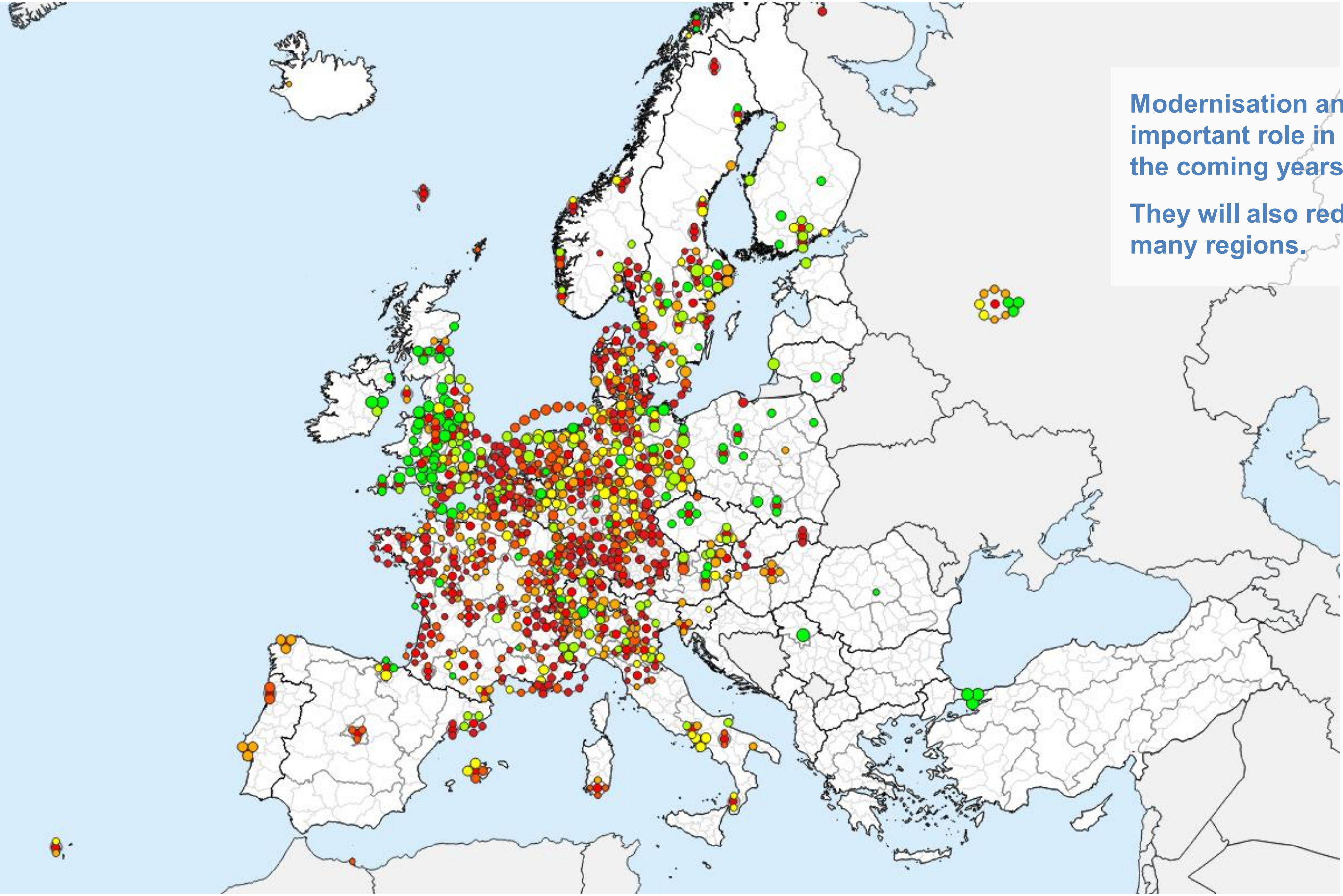
Slovenia: In November 2024, the CJEU ordered Slovenia to pay a lump sum of €1.2 million for failing to rehabilitate an illegal landfill in Teharje (Bukovžlak), despite a 2015 judgment requiring action.

Romania: In 2023, Romania was fined €1.5 million and a daily penalty of €600 per landfill for not closing 31 unauthorized landfill sites, as mandated by a 2018 judgment.

(…)

The current market dynamic reflects the legislation of the past at least as much as the one of the future.

WtE units in Europe by age



Modernisation and renewals will play an important role in many European markets in the coming years.

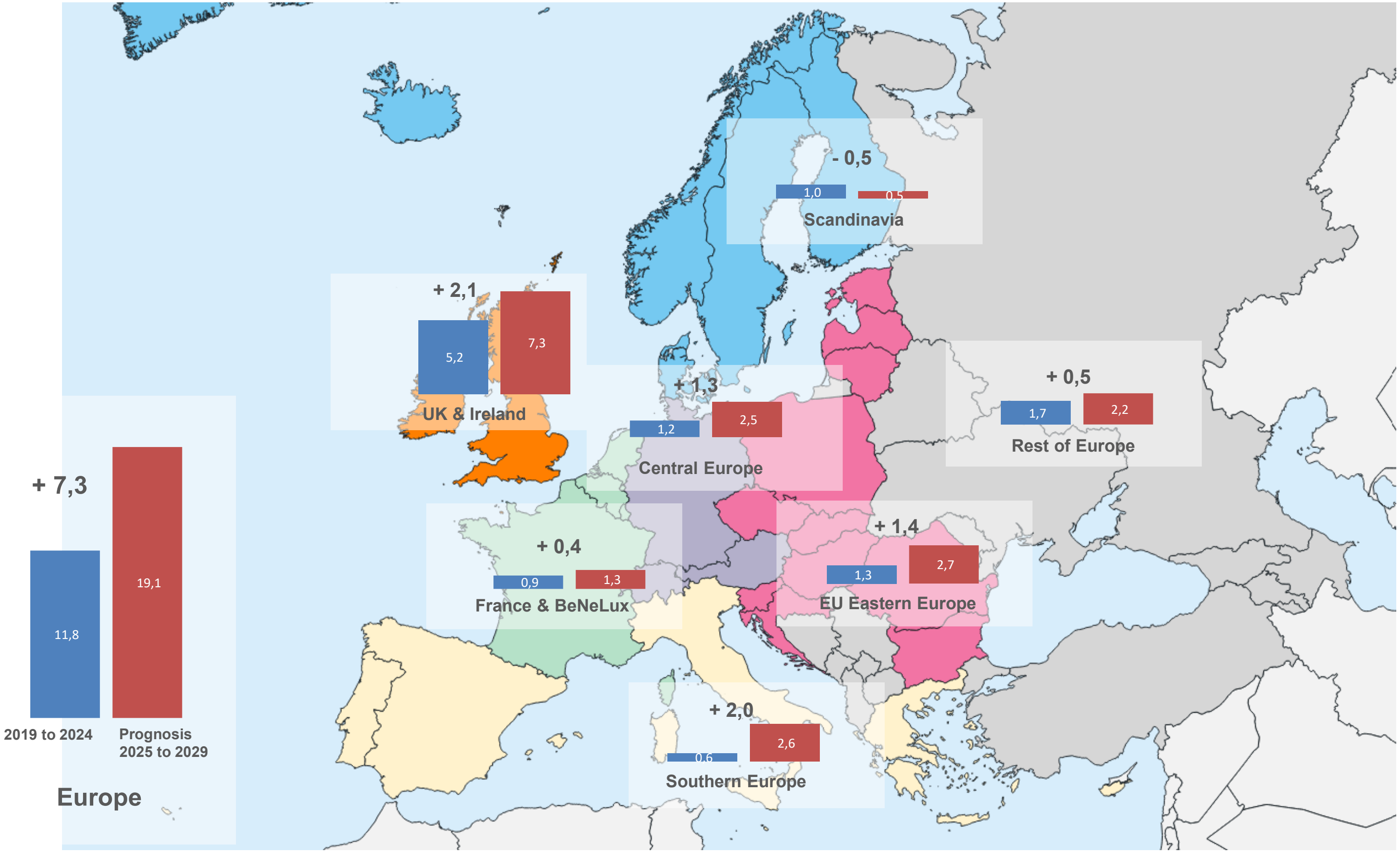
They will also reduce the available capacity in many regions.

Age of WtE units

- < 10 years
- < 15 years
- < 20 years
- < 25 years
- < 30 years
- 30 years or more

Analysis of 1,032 firing units in Europe, source: ecoprog

Prognosis of WtE capacity commissioned in Europe



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