

Presentation of key results

# CO<sub>2</sub> reduction potential in European waste management

Press Conference, 24 / 01 / 2022



## Key facts

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amounting to **505** Mt  
(~ 19 % of the total waste generated in 2018)

**10**

waste streams with high  
resource potential,

considering separate collected amounts **and** the potential within mixed waste streams

**27+1**

regional focus EU member  
states plus UK



**2**

projections until

**2035**

compared to a baseline plus **several sensitivities**

# Scenarios\*

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## Baseline - 2018

**“Status quo”**: CO<sub>2</sub>-emissions\* from current waste processing in the EU27 and the UK in 2018.

## Projection 1 - 2035

**“Implementation of current legislation”**: current waste regulation and recycling targets + municipal waste targets (mainly 65 % Output-based recycling target and max. 10 % landfill target extended to Commercial & Industrial waste

## Projection 2 - 2035

**“Potentials”**: more ambitious recycling performance + waste that can be recycled or recovered for energy purposes not allocated to landfills; improved energy recovery/other thermal treatment efficiencies considered

\* Net CO<sub>2eq</sub> emissions are calculated based on a 20-year global warming potential (GWP) perspective.

# Sensitivities

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## 20 vs 100-year time horizon

Time horizon for GHG effects highlights the huge impact of methane emissions from landfills - default time horizon in the study is 20-years, a sensitivity with a 100-years was applied

## Energy Substitution by energy recovery

Default assumption average electricity and heat mix of the European grid; sensitivity with a marginal approach has been developed (means that processes which recover energy from waste avoid the most carbon intensive conventional power generation technologies – fossil fuel sources)

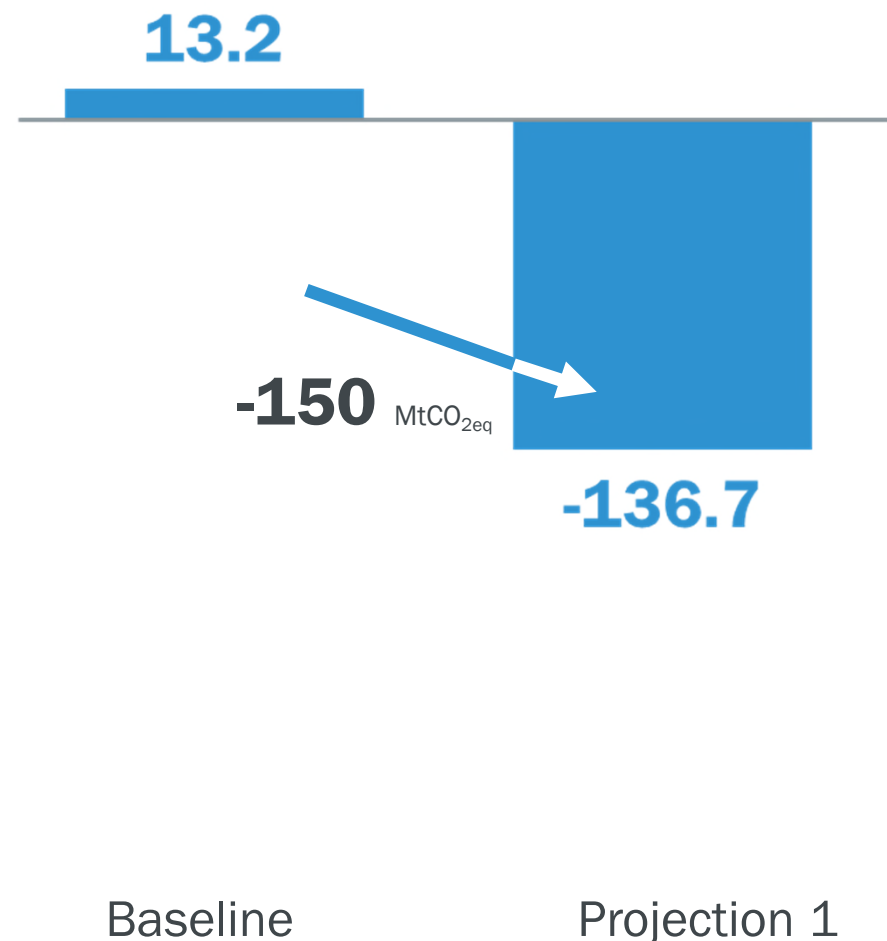
## Transport Sensitivity

Sensitivity analysis considering only residual waste/WDF, showing that energy recovery is preferable to landfilling even if the waste would be transported for a large distance (9000 km) in a medium-sized truck.

# Key results

## CO<sub>2eq</sub> Net Emissions

■ Total CO<sub>2eq</sub> Net Emissions per year (all figures in Mt CO<sub>2eq</sub>)



Results for the Combined total of Material waste streams and Residual wastes / WDF

Adopting a 20-year time horizon, the waste industry is for the selected waste streams with **13 Mt CO<sub>2eq</sub>** almost CO<sub>2</sub> net neutral in **2018**

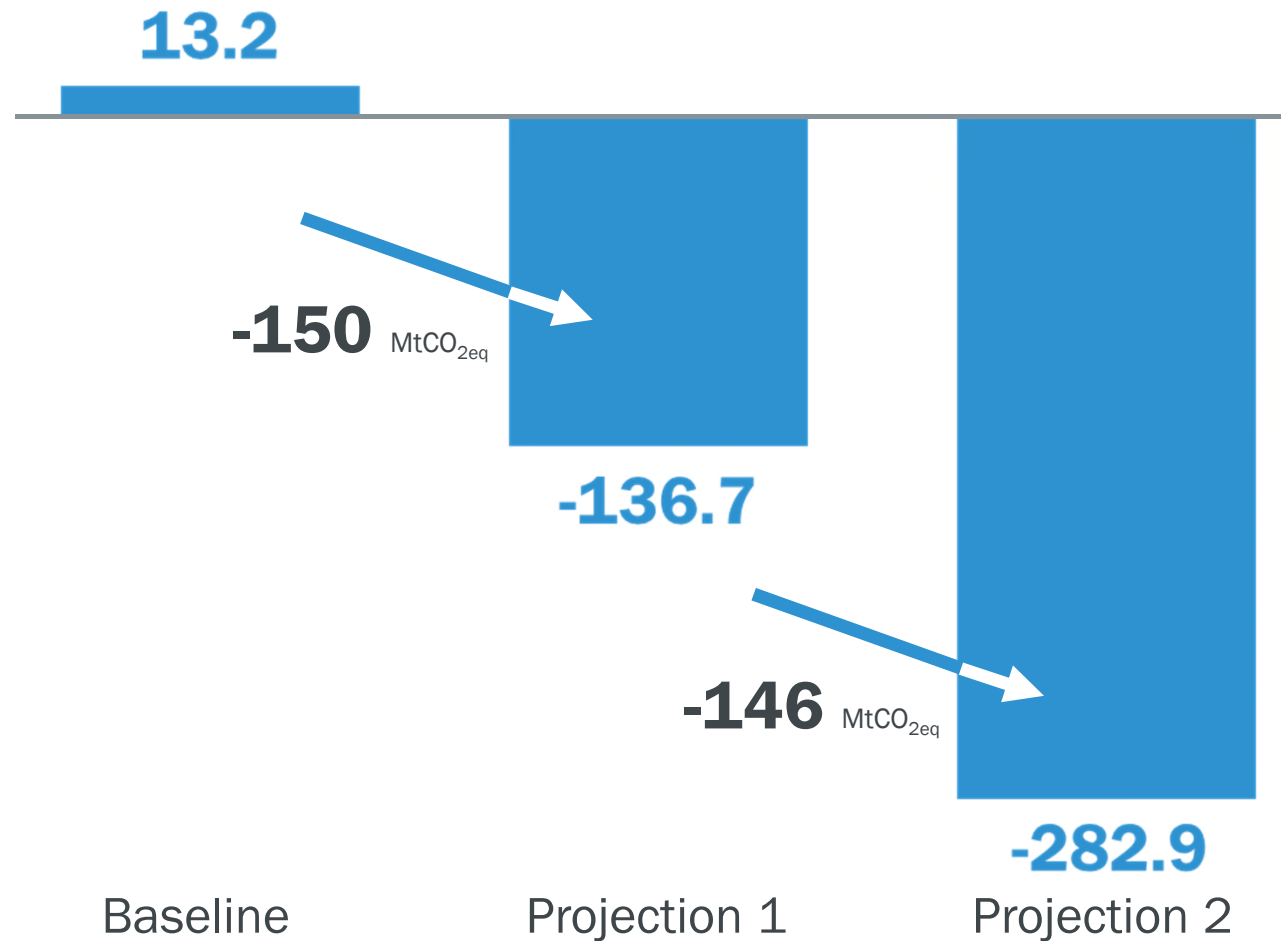
By successfully applying current waste legislation the CO<sub>2</sub> emission saving potential would significantly improve to

**- 137 Mt CO<sub>2eq</sub> / 2035**

# Key results

## CO<sub>2eq</sub> Net Emissions

■ Total CO<sub>2eq</sub> Net Emissions per year (all figures in Mt CO<sub>2eq</sub>)



Increasing efforts and reducing landfilling to a minimum the potential could almost double to savings by 2035 of

**- 296 Mt CO<sub>2eq</sub>**

## Key observation

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01

The waste management industry has cross-industrial interlinkages by making valuable waste derived content available to the whole economy as secondary resources for material and energy uses

02

For more ambitious projections, the municipal waste targets need to be extended to commercial and industrial wastes, and waste suitable for recycling and energy recovery should be diverted from landfills.

03

Additional potentials are beyond the current legislation. To achieve maximum CO<sub>2</sub> avoidance, policy makers are advised to make optimal use of all available capacity for recycling and waste to energy.

**We provide orientation.**

Prognos AG – European Centre  
for Economic Research and Strategy Advise

