



Confederation of European
Waste-to-Energy Plants

9th CEWEP Waste-to-Energy Congress 2018

Waste-to-Energy - Making Circular Economy Happen

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20th September 2018, Bilbao

Torino WtE plant, Italy



The Circular Economy

‘Circular’ = sustainable, environmentally friendly

‘Economy’ = value creation



Waste management in the Circular Economy

The waste concept remains important, also within the CE

-  Residues, used goods, objects without any (subjective) value for the holder should be taken care of
-  Waste regulation needs to assure that those materials will not be spread in the environment and will be recovered/reused as much as possible

=> waste will also exist within the CE

The role of waste companies within the CE

-  a logistic role (collect small amounts at different locations and deliver the necessary quantities to the production/treatment sites)
-  pretreatment in order to remove unwanted and/or hazardous components:
 -  inorganic (Hg, As, Cd,...) => treatment and safe sink
 -  organics => WtE

KEEP THE MATERIAL CYCLES CLEAN AND SAFE



The role of Waste-to-Energy in the CE

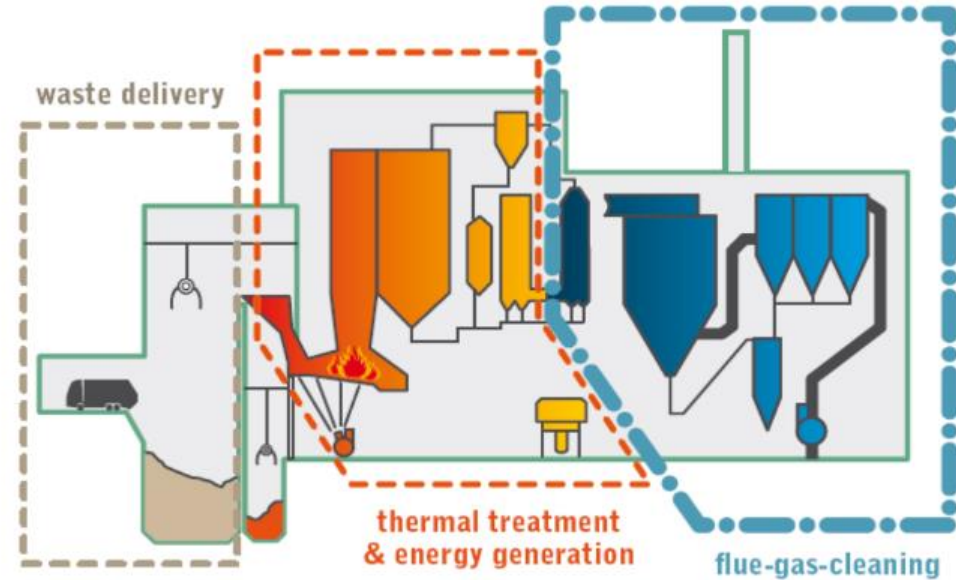
-  Turns non-recyclable waste in an environmentally safe way into secure energy and valuable raw materials;
-  Keeps the circle clean by dealing with unwanted organic components in the material cycles (act as a pollutant sink, fulfilling a hygienic task for the society).



WtE acts as a
pollutant sink
preventing
pollutants from re-
entering the cycle

Sophisticated flue
gas cleaning systems
guarantee low
emissions

Waste-to-Energy Plant

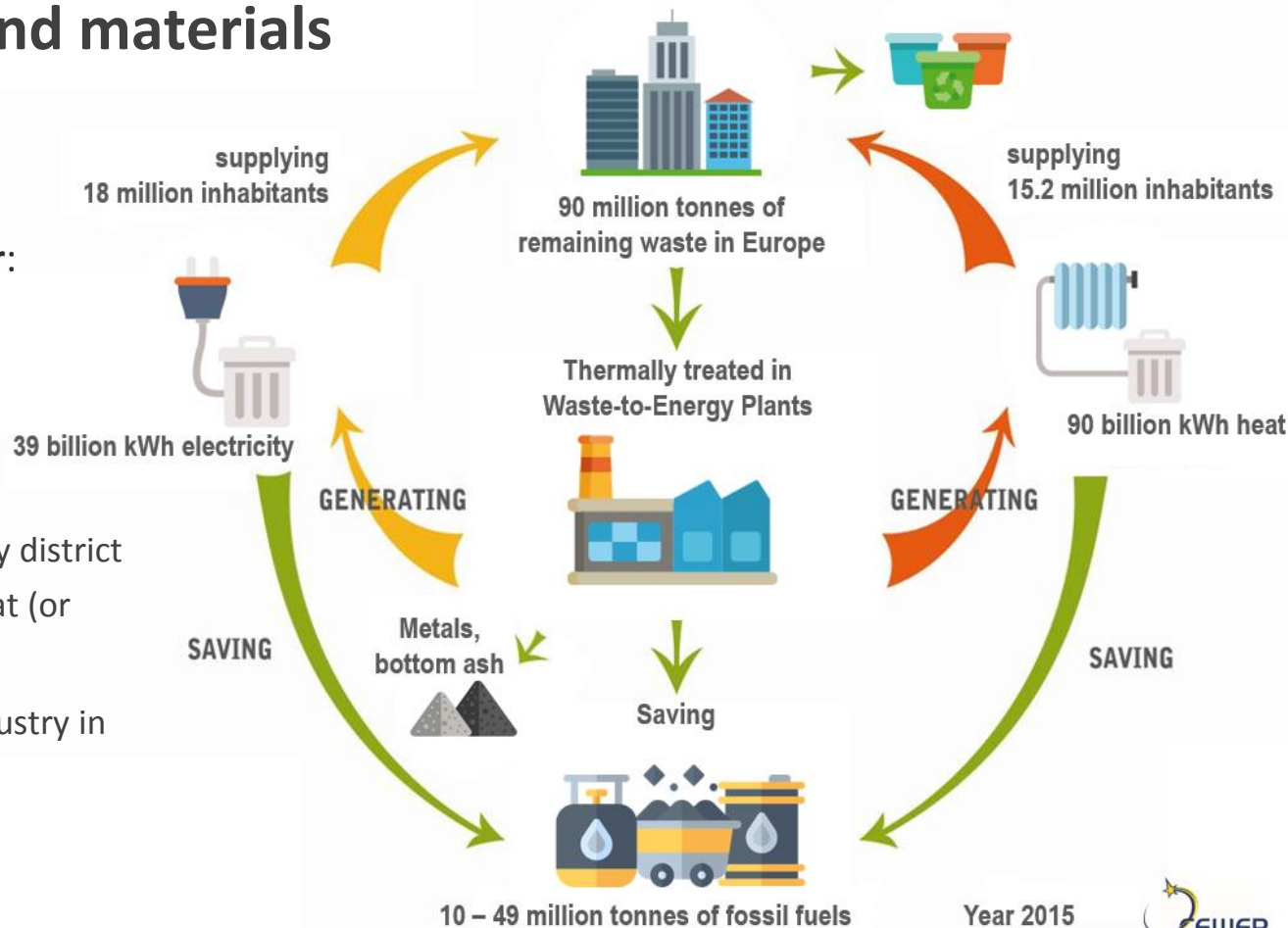




More energy and materials from our waste

This energy can be in the form of **steam, electricity or hot water**:

- ▶ **Electricity** is fed into the grid and distributed to the end-users.
- ▶ **Hot water** can be sent to a nearby district heating (or cooling) network to heat (or cool) homes, hospitals, offices etc.
- ▶ **Steam** can be used by nearby industry in production processes.





CEWEP – Confederation of European WtE Plants

Under one umbrella

CEWEP is the umbrella association of the operators of Waste-to-Energy (WtE) Plants across Europe.

They thermally treat household and similar commercial & industrial waste that remains after waste prevention, reuse and recycling and generate energy out of it.



Krakow WtE plant, Poland



2016 - CEWEP Members: 80 M tonnes; 410 plants
- Europe: 94 M tonnes; 521 plants





CEWEP – Confederation of European WtE Plants

Reducing dependence on landfills

Recycling and energy recovery are complementary options in order to divert waste from landfilling.

Supporting Quality Recycling

WtE prevents dirty or contaminated waste from entering the recycling chain and adversely impacting quality.

Generating value from Waste-to-Energy bottom ash

Recycling the metals and using the mineral parts in construction works to replace use of virgin materials.

Generating sustainable and reliable energy - Boosting Energy Efficiency

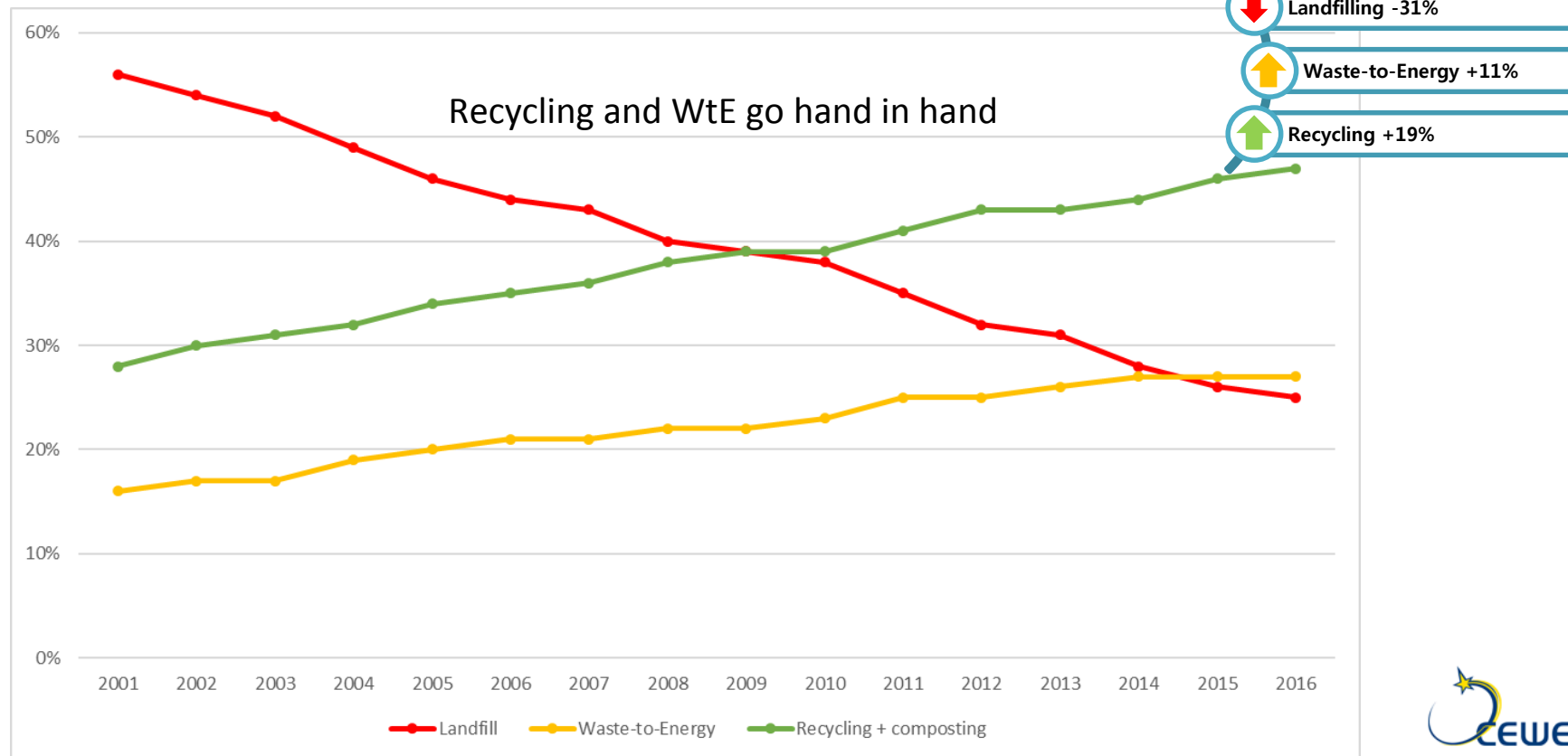
Use even more energy from waste in the form of heat, if the appropriate linking of heat (or process steam) customers to WtE Plants would be encouraged. The energy gains from WtE can be increased by improving access to power grids for WtE Plants.





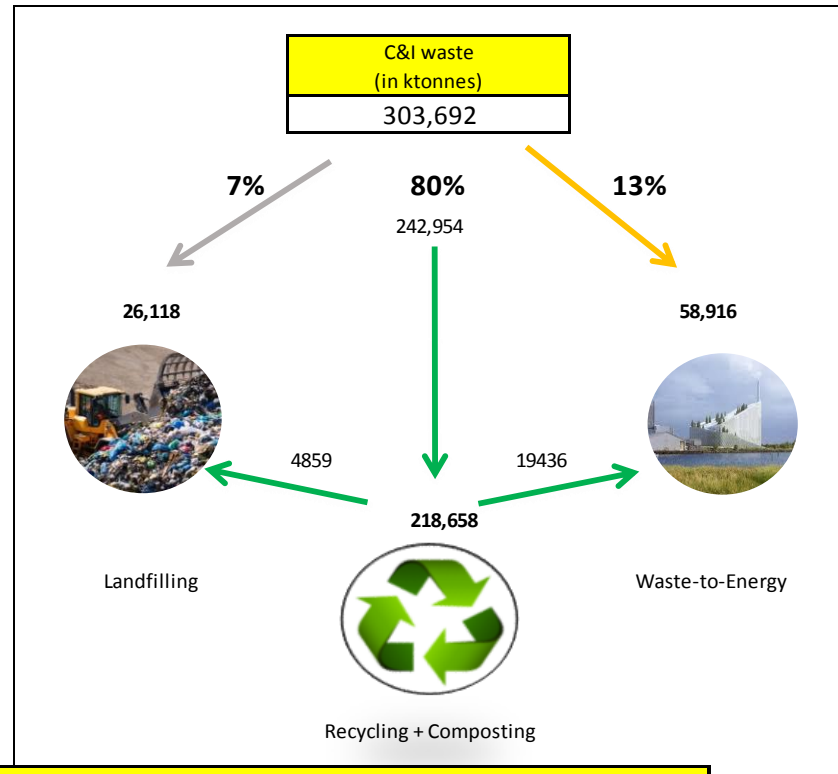
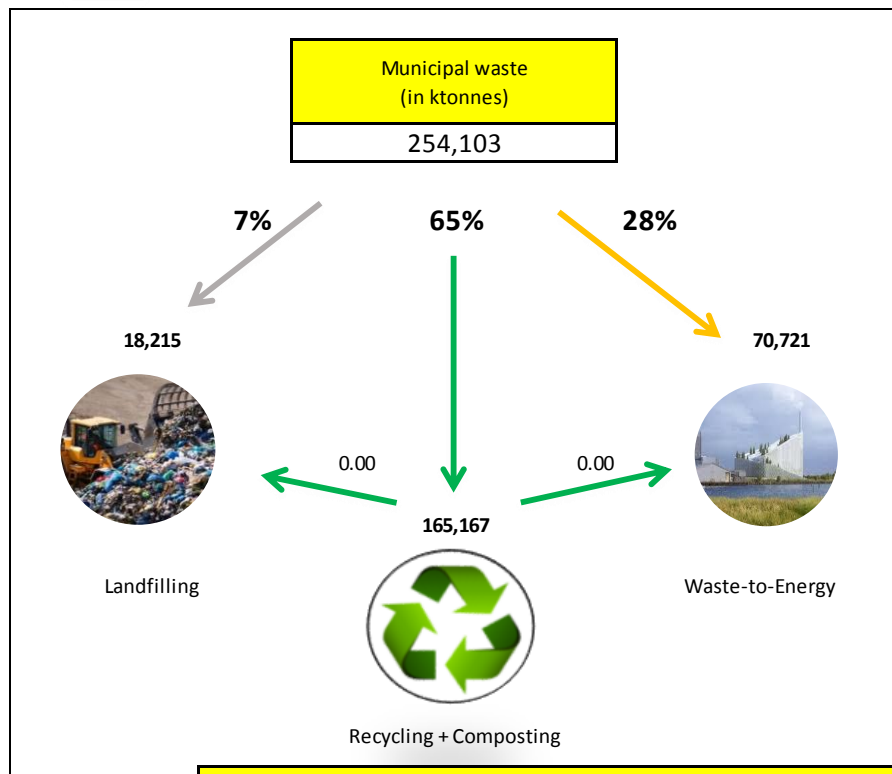
Municipal waste treatment 2001-2016 EU 28

EU 28





The CE package scenario with ambitious targets for commercial waste 1/2



Estimation of Total input available for Waste-to-Energy in EU28 in 2035

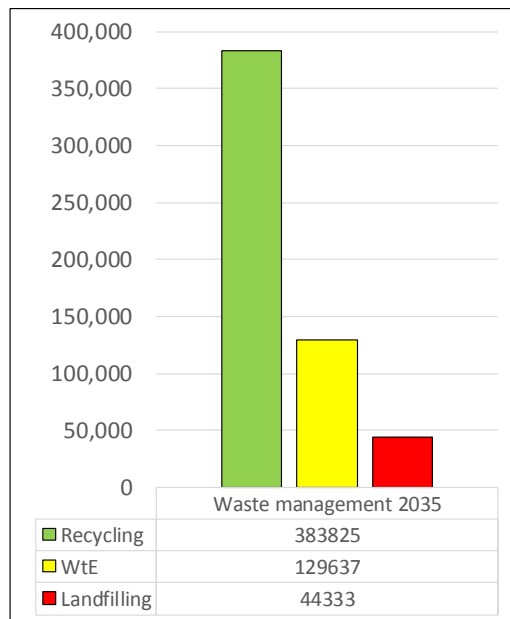
129'637 ktonnes



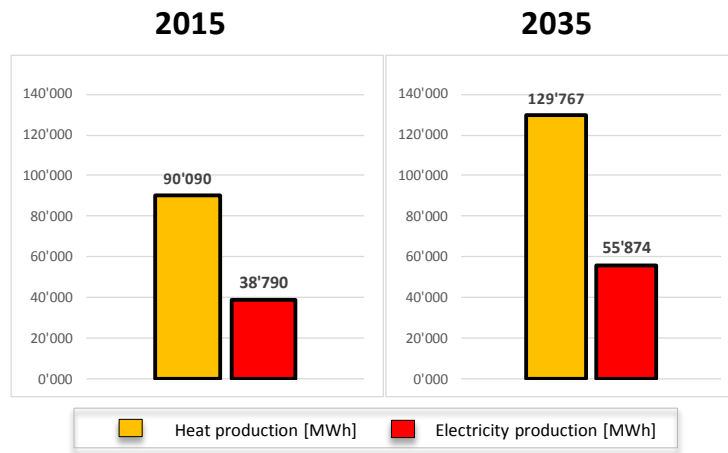
The CE package scenario with ambitious targets for commercial waste 2/2

Energy production and CO₂ savings

+ 84'235
ktonnes waste recycled



Energy Production scenario 2035



Total potential CO₂ saving in 2035

113'821'358 tonnes CO₂eq



117%
of the belgian CO₂
emissions from fossil
fuels

2035



Supplying heat for:
21'881'090
inhabitants



Supplying power for:
27'498'775
inhabitants



[Belgium in 2015](#)
[emitted 97'002'000](#)
[tonnes of CO₂ from](#)
[fossil fuels \(wikipedia\)](#)



The Waste-to-Energy roadmap



■ Making the circular economy happen

Recycling and energy recovery are complementary options in order to divert waste from landfilling.

■ Contributing to climate protection

Diverting waste from landfill and replacing fossil fuels for energy production helps to reduce greenhouse gas emissions.



Thank you for your attention



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