

Circular Economy meets Energy Union

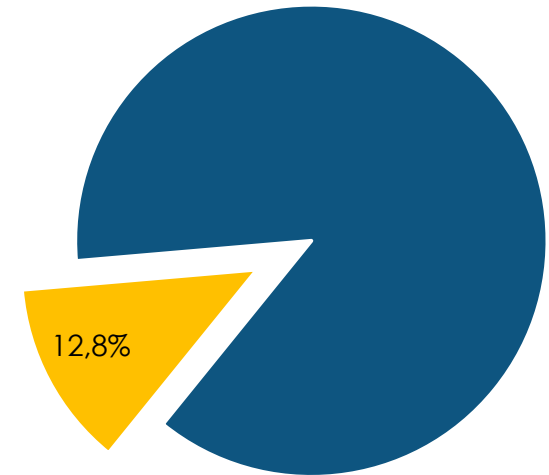
JRC study 2016: Towards a better exploitation of the technical potential of waste-to-energy

Table 3.64: Summary of WtE technical potential

Scenario	Energy recovered - Average (PJ)	Improvement potential (PJ)	Energy recovered - Optimised (PJ)
WI power	110	71	181
WI heat	275	65	340
CL plants	176	12	188
AD electricity	70	-38	32
AD heat	33	0	33
AD fuel	12	86	98
Total	676	173	872

- ▶ Waste Incineration (WtE plants): energy recovered and potential for technical improvement

Source: JRC, 2016



- ▶ EU landfills 1,409 PJ of energy embedded in the waste (in 2012, JRC 2016)
- ▶ It is the equivalent to 12.8% of the total energy consumption of households in the EU

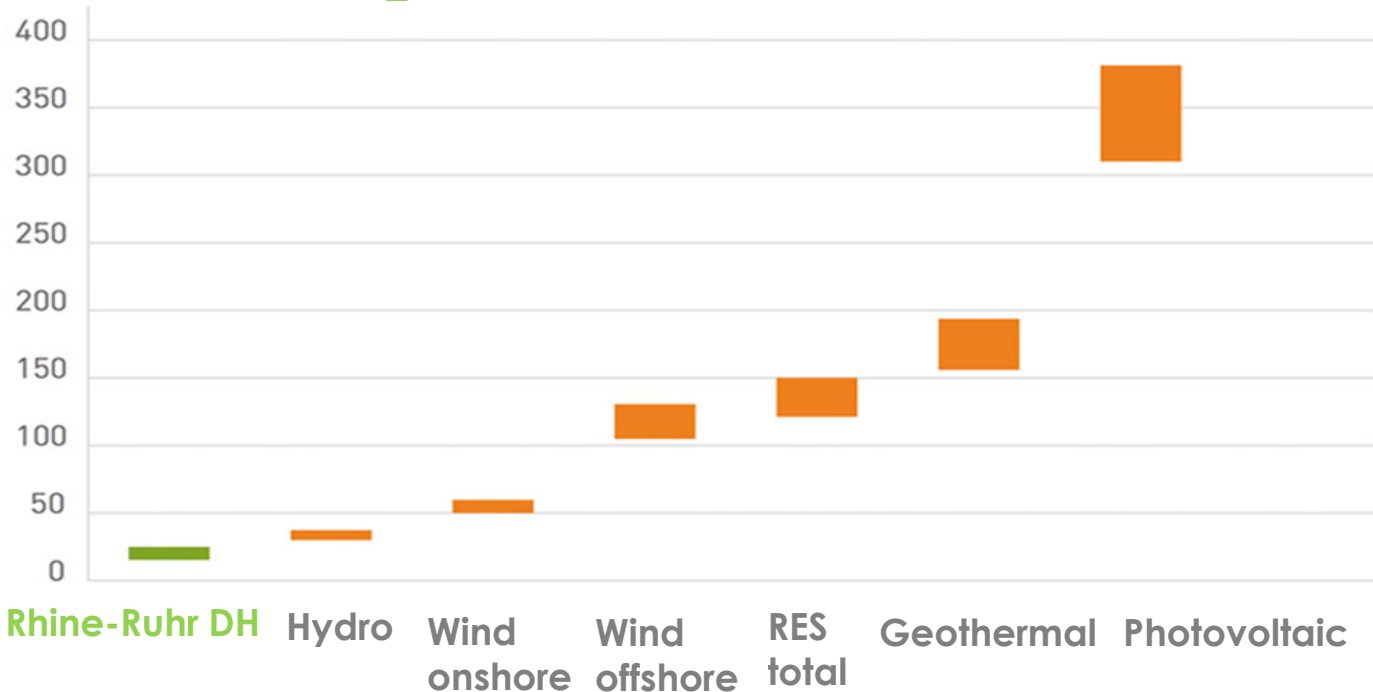
EC communication 2017: The role of WtE in the Circular Economy and Energy Union



- ▶ Expectations:
 - ▶ call for landfill diversion
 - ▶ fact-based projections for energy recovery
 - ▶ exploit synergies between WtE and District Heating/Cooling networks
 - ▶ linking Circular Economy and Energy Union

Rhine-Ruhr District Heating (FWSRR)

CO₂ avoidance cost in €/t




- ▶ Connection of regional heat sources: power plants, **WtE**, industry
- ▶ Sustainable & price-stable heat supply
- ▶ Leading project for North Rhine-Westphalia climate protection policy: CO₂ & CHP targets

Port of Antwerp industrial steam network (ECLUSE)



- ▶ Energy cluster: steam from **WtE** to chemical companies
- ▶ Sustainable and reliable energy supply for industry
- ▶ Important pillar in energy and competitiveness policy of the Flemish government

Olsztyn – integrated management of energy and waste



EMISSION REDUCTION
SO₂ → **92%**
dust → **71%**

- ▶ Industrial source supplying around 50% heat to the District Heating network will be decommissioned by 2020
- ▶ **WtE** plant will divert residual waste from landfill and supply heat
- ▶ Local authority made integrated assessment for energy and waste management

Policy Recommendations



Higher Energy Efficiency

Synergies between existing networks (District Heating / Cooling, industrial heat) and further exploitation of potential for WtE



Better waste management

Diverting waste from landfills to quality recycling and WtE



Uniting Circular Economy and Energy Union goals

WtE has a double role in the waste management and energy systems

Waste-to-Energy

Maximum recycling. Minimum landfill

CEWEP

Confederation of European Waste-to-Energy Plants

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