HEAT FROM WASTE-TO-ENERGY

A HOT TOPIC FOR A REASON

Photo: the Schwandorf WtE plant in Germany. ©Silke Reents

Waste-to-Energy (WtE) refers to the incineration of non-recyclable waste which is then turned into different energy sources, including heat. Heat from Waste-to-Energy is then redistributed to homes, offices, shopping malls, schools, hospitals, museums, and factories.

In Europe, WtE plants provide heat to approximately 17 million people each year. In some urban areas, WtE plants cover more than 50% of residential heat demand and in general, 10% of Europe's district heating energy comes from the WtE process.

Source: CEWEP – Confederation of European Waste-to-Energy Plants, "WtE Climate Roadmap", 2022

Heat from Waste-to-Energy contributes to:

1. ENERGY SECURITY

Heat from waste reduces Europe's reliance on imported fuels such as natural gas and oil for heating. This makes Europe's energy supply more stable and secure as it is less affected by disruptions in fuel imports.

2. CLIMATE MITIGATION

Using heat from waste instead of burning fossil fuels reduces greenhouse gas emissions. It also helps to combat climate change by lowering the overall energy production's carbon footprint.

3. ENERGY EFFICIENCY

WtE plants get more useful energy from the same amount of waste compared to electricity produced from waste. This way, WtE plants help to meet energy demand and increase overall energy efficiency.

4. CIRCULAR ECONOMY

Heat from waste promotes the circular economy because it saves a significant amount of heat that would otherwise be lost, and redistributes it into district heating networks and other applications.

5. CONSUMER PROTECTION

Heat from waste protects consumers and reduces the risk of energy poverty by providing an energy source that is stable, reliable, and not affected by market fluctuations the same way as fuels.

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CUTTING EDGE WASTE-TO-ENERGY PLANTS IN EUROPE

Photo:©Andreas Offesson

Sweden is a pioneer in the WtE sector with 34 WtE plants on its soil.

The **SYSAV plant** in Malmö is one of the most efficient in the country – it burns about 630,000 tonnes of waste per year and recovers approximately 1,5 terawatt-hour (TWh) of district heating.

In **Italy**'s Bergamo, the innovative **Rea Dalmine plant** is one of Europe's best examples of waste management.

With an annual capacity of 150,000 tonnes, the plant meets the yearly domestic energy needs of over 110,000 people, providing them with 90,000 megawatt-hour (MW/h) in thermal energy.

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In **Switzerland**, the modern **Giubiasco plant** collects waste from the entire Cantonnes Ticino territory, and supplies heat to the surrounding areas.

The plant converts around 160,000 tonnes of waste per year – in the future, the Giubiasco facility is expected to save some 5 million litres of heating oil per year.

The Integrated Resource Recovery Facilities are next-generation WtE plants that can produce hydrogen, synthetic fuels, or capture their CO2 emissions. Click here to learn more.