



Taking the lead
at the
Göppingen site.



eew

Energy from Waste

Welcome to EEW Energy from Waste!

Energy is essential to everyday life. Since the availability of fossil fuels is limited, the use of energy from waste is becoming increasingly important. As Germany's leading company in the production of environmentally friendly energy from thermal waste recovery, it is our mission to take the lead: With ultra-modern energy from waste plants. With state-of-the-art technology that meets the latest environmental standards. With highly qualified, dedicated employees. With good and constructive relationships with citizens, municipalities and companies. And, of course, with environmentally friendly energy from waste.



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1 tonne of waste = 600 KWh of electricity

Electricity from waste is an important resource. The calorific value of the material is comparable to that of brown coal, making it virtually predestined for energy generation.

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EEW Energy from Waste Göppingen. Built to serve the region.

Energy from waste plants are a special kind of high-quality power plant. They not only have to comply with very strict emission limits, they must also satisfy the highest technical demands, and are therefore continuously monitored and optimised. For around 30 years, the EEW Energy from Waste Group has been planning, building and operating thermal waste recovery plants that set standards across Europe. In the vicinity of our plants, which stand out for their low emissions, high efficiency and excellent workplace safety, new companies and thus new jobs are being created. At the same time, consumers and nearby industrial firms benefit from using the environmentally friendly energy that EEW generates.

Göppingen, nestled in the wonderful countryside of the Swabian Alb, bears a particular responsibility towards this natural paradise. This makes it all the more important to sensibly utilise the waste generated locally to produce energy. With this aim in mind, EEW's energy from waste plant in Göppingen, which was fitted with a new boiler and ultra-modern flue gas cleaning system in 1998, produces 52,000 megawatt hours of district heat every year for the Klinik am Eichert hospital, the Bergfeld residential estate and the nearby riot-police station. Moreover, the plant produces 88,000 megawatt hours of electricity, corresponding to the power required by around 25,000 households in the region. To generate this energy, up to 168,000 tonnes of residual waste from the district of Göppingen and the state of Baden-Württemberg can be recovered in a safe, low-emission process. We are proud to take the lead – for energy in the region and for environmental protection.

An overview of how the EEW Göppingen plant works.

1

Every day, around 600 tonnes of waste from the district of Göppingen and the state of Baden-Württemberg are transported to the energy from waste plant.

2

The fuel is collected and temporarily stored in the waste bunker, which has a capacity of around 3,200 tonnes. The air pressure here is kept slightly negative so that no emissions or odours can escape. Environmental protection is therefore integral right from the start.

3

The waste is mixed and continuously transferred to the feed hopper. From there, the waste enters the grate of the combustion line (boiler).

4

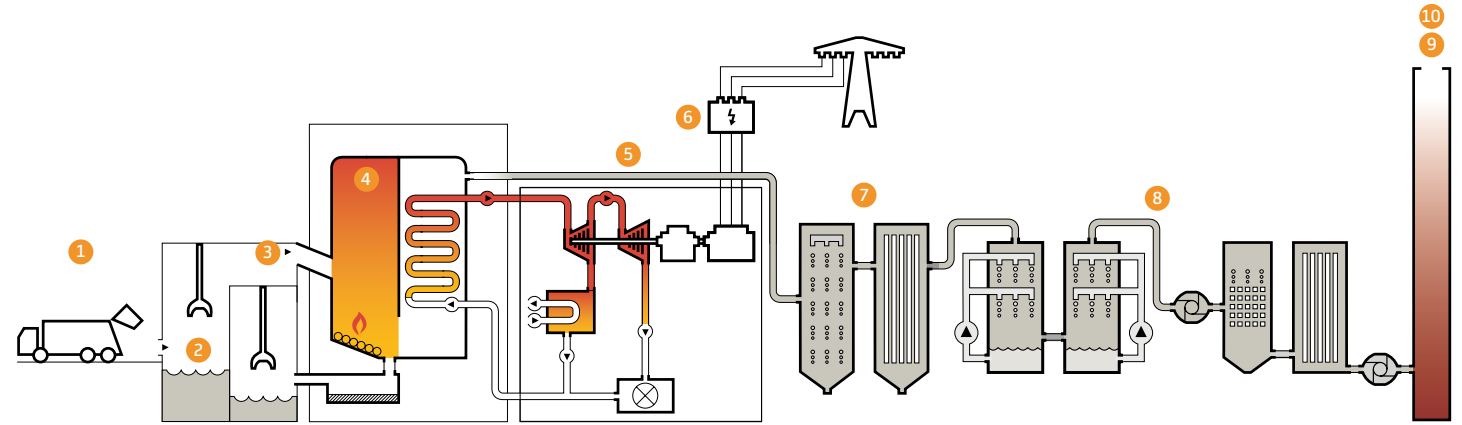
As waste self-combusts at the high temperatures in the boiler, no additional fossil fuels are required. Oil burners are only activated when the boiler is powered up or down in order to guarantee the minimum temperature of 850 °C. This high temperature is required by law. Pollutants are largely destroyed.

5

Nearly 64 tonnes of steam can be produced every hour from the thermal energy of the boiler. At a pressure of 41 bar and a temperature of 410 °C, the steam drives a turbine connected to a generator.

6

Approximately 88,000 megawatt hours of electricity and 52,000 megawatt hours of district heat are generated in this way every year.



7

The flue gases leave the boiler at a temperature of approximately 230 °C and directly undergo a six-stage flue gas cleaning process. The flue gases are cooled down to 180 °C in the spray dryer, and the crystalline salts precipitate. Dust is then removed from the flue gas via a fabric filter.

8

The two-stage wet scrub binds gaseous substances with lime hydrate and removes chlorine and hydrogen fluoride, sulphur dioxide and heavy metals. In the next step, nitrogen oxides are split into environmentally neutral nitrogen and water by adding ammonia solution in a catalytic converter. The filter layer adsorber, to which a mixture of lime and active carbon is applied, acts as a “police filter” to remove any residual pollutants.

9

The clean gas then leaves the nearly 100 m high stack. What remains is bottom ash, fly ash and filter dust. The bottom ash is recovered and used for the construction of roads and landfills. Fly ash and filter dust are used as backfilling material in mines.

10

The plant easily complies with the particularly strict statutory emission limits and in most cases is substantially below them. A measuring station prior to the stack continuously analyses and monitors the emissions. The results are transmitted directly to the responsible supervisory authority. Another interesting fact: The EEW Göppingen site produces no wastewater. The dirty water is captured and used for cooling purposes during flue gas cleaning. Rainwater at the site is also fed into the system.



Raoul Ammenhäuser, Senior Electrical Engineer,
EEW Energy from Waste Göppingen GmbH

Technical data

Commissioning	1975
Commissioning replacement line	1998
Total investment	€ 75 million
Capacity	168,000 tonnes/year
Number of combustion lines	1
Waste bunker capacity	6,400 cubic metres \approx 3,200 tonnes
Calorific range of waste	9 - 11 megajoules/kilogram
Electricity generation	88,000 megawatt hours/year \approx 25,000 households
District heating generation	52,000 megawatt hours/year



**Taking the lead
to ensure
clean air.**

We shrink the carbon footprint.

A benefit for the environment.

As waste contains 50 per cent biogenic substances on average, it is recognised that energy from waste plants produce energy from renewable sources pursuant to the Germany's Renewable Energy Sources Act (EEG) and thus contribute to reaching the climate targets in Germany and Europe.

Another area where we take the lead: The emissions from our waste recovery plant reliably comply with – and are sometimes substantially below – the strict limits established by the German Federal Immission Control Act.

This is documented by constant emissions monitoring and controlled by the supervisory authority.

Ideally, come and see for yourself during a tour of our plant. You will discover that at EEW Energy from Waste, we put waste to work for climate protection.



Our annual contribution to environmental protection:



Up to 168,000 tonnes
of waste recovered



88,000 megawatt hours of
electricity generated in an
environmentally friendly manner



Electricity produced in an
environmentally friendly manner
for 25,000 households



52,000 megawatt hours of
district heating produced with
resource-conserving technology



We tackle the future. And assume responsibility.

For more than 145 years, our expertise has been built on progress. Founded in 1873 as the coal mining firm Braunschweigische Kohlen-Bergwerke (BKB), the company soon also became an electricity producer and has evolved steadily to the present day. Having entered the waste treatment business in 1990, EEW Energy from Waste now has a great wealth of experience and expertise in environmentally friendly energy generation from thermal waste recovery. As the market leader in Germany, with our 18 plants here and in neighbouring countries we make a substantial contribution to conserving resources and reducing greenhouse gas emissions.

Our figures speak for themselves:

Our plants have an annual energy recovery capacity of more than 5 million tonnes of waste. We can thus produce around 2.5 million megawatt hours of electricity, more than 2.6 million megawatt hours of process steam and around 800,000 megawatt hours of district heating. EEW's electricity output alone corresponds to the power required by around 700,000 households.**

Our team of around 1,150 highly qualified, dedicated employees takes the lead by producing energy that benefits not only numerous companies but also hundreds of thousands of households and, most importantly, the environment.

References:

* Electricity, district heating and steam volume produced by our 18 EEW Energy from Waste plants in 2018

** Assumed annual average consumption per household: 3,500 kWh



Rather than resting on our laurels, we continuously improve the processes and efficiency of our plants. Ultimately, we offer municipalities and companies pioneering waste recovery services that encompass everything from customised waste management concepts to waste acceptance and compliance with the statutory waste transfer documentation. We deliver outstanding performance and achieve a high level of acceptance among the general population and local residents.

This is how we take the lead. Together. For our future.



Would you like to find out more,
or visit the EEW site in Göppingen?
Please get in touch!
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