



Taking the lead  
at the  
Heringen 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 Heringen. 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.

Heringen is the heart of the potash mining industry in Germany. For more than 100 years, this "white gold" has been mined here. The corporation Kali+Salz (K+S) operates the Wintershall potash mine here, which requires a lot of energy in the form of steam and electricity. It was therefore obvious that waste from the region should be put to good use to meet these energy needs. This has been happening since 2009 in partnership with K+S at EEW's energy from waste plant in the neighborhood of the potash mine in Heringen. Currently, 918,000 megawatt hours of process steam are generated here to supply the potash mine. To generate this energy, up to 297,600 tonnes of municipal and commercial waste as well as refuse derived fuels are recovered each year in a safe low-emission process. We are proud to take the lead – for more energy and for environmental protection.

## An overview of how the EEW Heringen plant works.

1

Each week, up to 6,000 tonnes of waste are transported to the energy from waste plant.

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The fuel is collected and temporarily stored in the waste bunker, which has a capacity of around 7,500 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.

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The waste is mixed and continuously transferred to the feed hopper. From there, the waste enters the grates of the two combustion lines (boilers).

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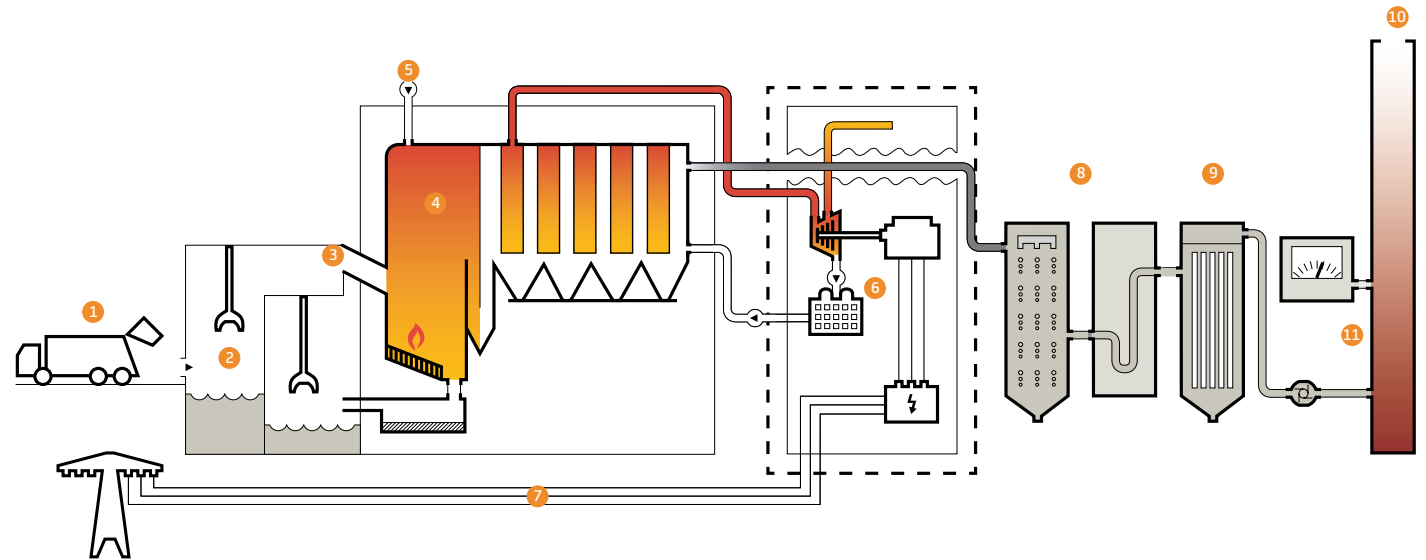
As waste self-combusts at the high temperatures in the boiler, no additional fossil fuels are required. Gas burners are only activated when the boiler is powered up or down in order to guarantee the minimum temperature of 850 °C. This high temperature is required by law. Pollutants are largely destroyed.

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Nitrogen oxides are converted into environmentally neutral nitrogen and water by adding ammonia solution.

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The two boilers produce nearly 160 tonnes of steam every hour with the thermal energy of the fuel. The temperature is increased to 520 °C for the potash mine. At that point, the steam is fed to the steam turbine in the Wintershall power station, where the heat is converted to electricity via combined heat and power technology and the required process steam is removed.



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Approximately 918,000 megawatt hours of process steam are generated in this way.

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After the boiler, the flue gases reach the three-stage cleaning system. The first stage is the spray absorber, where the acidic pollutants are treated with lime milk with which they react to form atomised lime salts. These salts are then transported further with the flue gas. In the second cleaning stage, the diversion reactor, hearth furnace coke is added in order to bind gaseous heavy metal compounds as well as dioxins and furans.

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In the third stage, the flue dust, lime salts and contaminated hearth furnace coke dust are captured in the fabric filter and these residues are continuously removed.

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The cleansed flue gases now reach a gas analysis section where continuous monitoring takes place to ensure that limits are being met, and then leave the plant via a 70 m high exhaust gas 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 by K+S as backfilling material in mines.

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The plant easily complies with the strict statutory emission limits and in most cases is substantially below them. Another interesting fact: EEW's Heringen site produces no wastewater. Dirty water is captured and used in the flue gas cleaning process. Rainwater at the site is also fed into the system.



Henry Kraus, Maintenance Metalworker, EEW Energy from Waste Heringen GmbH

### Technical data

Commissioning	2009
Total investment	€ 130 million
Capacity	297,600 tonnes/year
Number of combustion lines	2
Waste bunker capacity	15,000 cubic metres $\approx$ 7,500 tonnes
Calorific range of waste	8 - 18 megajoules/kilogram
Process steam generation	918,000 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 297,600 tonnes  
of waste recovered



918,000 megawatt hours of  
process steam 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

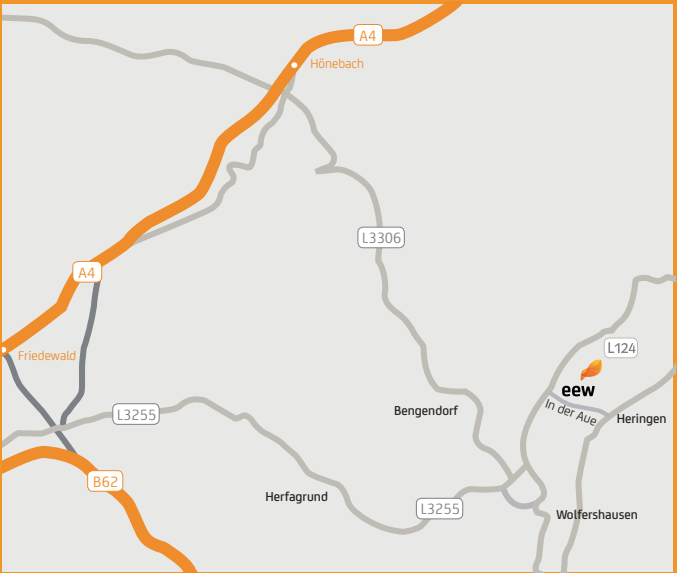
\*\* Assumed annual average consumption per household: 3,500 kWh



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 Heringen?

Please get in touch!

You can reach us at:

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