



Taking the lead
at the Eschbach
(Breisgau) 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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TREA Breisgau. 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.

In order to best utilise the energy potential of waste where it is generated, Abfallwirtschaft Breisgau mbH decided to build the TREA Breisgau plant. The TREA plant for thermal residual waste treatment and energy generation started operations in 2005. The plant generates 123,000 megawatt hours of electricity per year, equivalent to the energy needed by approximately 35,000 households in the region. To generate this power, 175,000 tonnes of residual waste from the districts of Breisgau-Hochschwarzwald, Emmendingen, Ortenaukreis and the City of Freiburg are transported – mostly by train – to Eschbach im Breisgau each year, where the waste is 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 TREA Breisgau plant works.

1

Every week, around 3,300 tonnes of waste from the region are transported to the thermal residual waste treatment and energy generation plant (TREA) in the Breisgau region.

2

The fuel is collected and temporarily stored in the waste bunker, which has a capacity of around 10,000 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

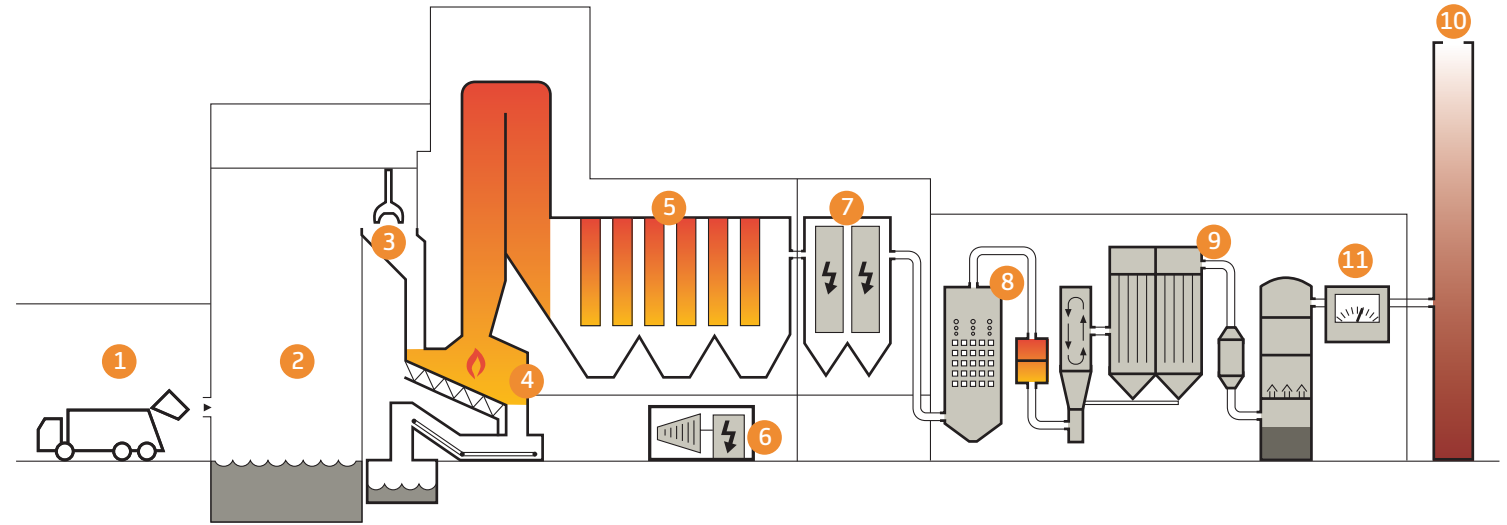
As waste self-combusts at the high temperatures in the boiler, no additional fossil fuels are required. Oil burners are only activated when the boiler is powered up or down in order to guarantee the minimum temperature of 850 °C. This high temperature is required by law. Pollutants are largely destroyed.

5

The thermal energy released by the combustion generates around 71 tonnes of steam in the boiler every hour. At a pressure of 40 bar and a temperature of around 400 °C, the steam drives a turbine connected to a generator.

6

Approximately 123,000 megawatt hours of electrical energy are generated in this way every year.



7

The flue gases leave the boiler at a temperature of approximately 250 °C and then undergo four stages of flue gas cleaning. The electrofilter removes approximately 99 per cent of the dust from the flue gas.

8

In the catalytic converter, nitrogen oxides are converted into environmentally neutral nitrogen and water by adding ammonia solution.

9

Acidic flue gas components such as HCl and SO₂ are removed in the back circulator with a fabric filter by adding hearth furnace coke, hydrated lime and water. The fabric filter also captures dust and gaseous substances. Residual substances are then washed out in the subsequent two-stage flue scrubber.

10

The clean gas then leaves the 50 m stack with the aid of a fan. 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.

11

The plant easily complies with the particularly strict statutory emission limits and in most cases is substantially below them. A measuring station at the stack continuously analyses and monitors the emissions. The results are transmitted directly to the responsible supervisory authority. Another interesting fact: The EEW Breisgau site produces no wastewater. Dirty water is captured, returned to the process and injected in the back circulator.



Michael Lickert, Maintenance
 EEW Energy from Waste Saarbrücken GmbH, TREA Breisgau

Technical data

Commissioning	2005
Total investment	€ 83 million
Capacity	175,000 tonnes/year
Number of combustion lines	1
Waste bunker capacity	20,000 cubic metres ≈ 10,000 tonnes
Calorific range of waste	7 - 16 megajoules/kilogram
Electricity generation	123,000 megawatt hours/year ≈ 35,000 households
District heating generation	12,000 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 175,000 tonnes
of waste recovered



123,000 megawatt hours
of environmentally friendly
electricity



Electricity produced in an
environmentally friendly manner
for 35,000 households



12,000 megawatt hours of district
heat produced with resource-con-
serving 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 Breisgau?

Please get in touch!

You can reach us at:

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