
Taking the lead
at the
Delfzijl site.
eew
Energy from Waste

Welcome to EEW Energy from Waste!

Energy is the basis of our life. As fossil fuels are only available in limited quantities, using energy from waste as a resource is becoming increasingly important. As Germany's leading company in the production of environmentally friendly energy from the thermal utilisation of waste, it is our task to take the lead. With highly modern energy from waste plants that are state of the art technically and ecologically. With superbly qualified, dedicated employees. With good and effective relationships with citizens, municipalities and companies. And of course with environmentally friendly energy from waste.

1 tonne of waste = 600 KWh of power

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

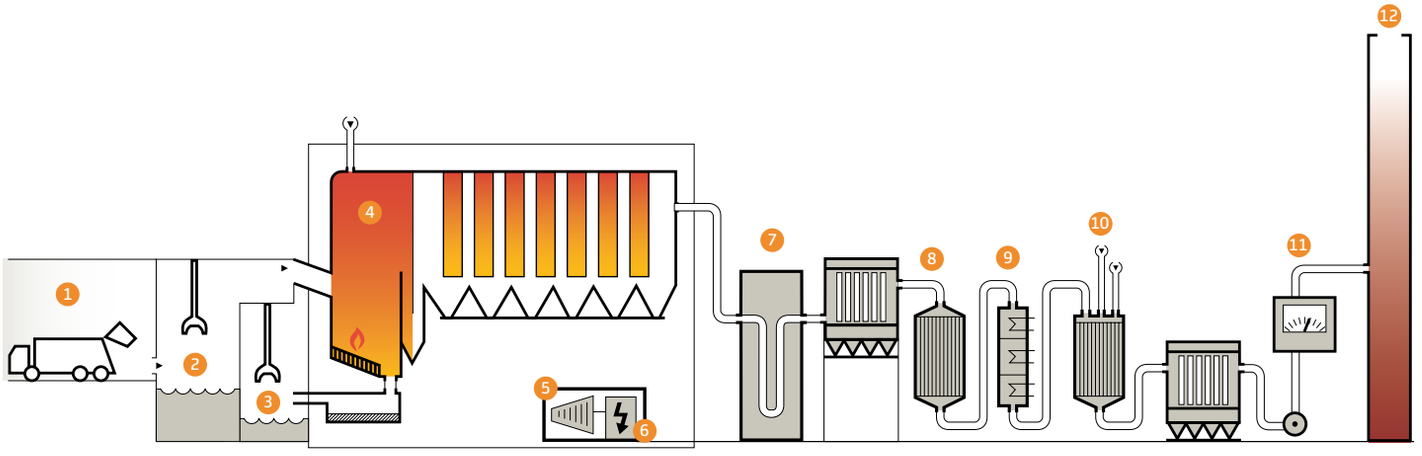
EEW Energy from Waste Delfzijl.

Built out of responsibility for the region.

Energy from waste plants are a special kind of high-quality power plant. They not only have to meet the strictest requirements with regard to emission limits but also to satisfy the highest technical demands and are therefore continuously checked and optimised. For about 30 years, the EEW Energy from Waste Group has been planning, building and operating thermal waste recycling plants that set standards throughout Europe. New companies are being established and thus new jobs created near to the plants, which are characterised by low emissions, high efficiency and an exemplary health and safety record. At the same time, consumers and surrounding industrial companies are benefiting from the use of the energy generated in an environmentally friendly manner.

The Wadden Sea nature park is a habitat deserving of special protection. It is important, therefore, to ensure that the factories located in the Dutch province of Groningen in the industrial park of Delfzijl procure their power in a way that makes sense in energy terms and protects the environment. EEW's energy from waste plant has been performing this task since 2010. Today, it generates 166,000 megawatt hours of power and 482,000 megawatt hours of process steam, thereby securing the requirements of neighbouring companies over very short distances. 384,000 tonnes of industrial and domestic waste as well as refuse derived fuels are delivered by sea, rail or road through the existing infrastructure. In this way, our facility provides reliable disposal for the surrounding areas and converts the waste safely to energy with low emissions. For even more energy in the Oosterhorn industrial park of Delfzijl and for the protection of the environment. That is something we are proud of.

An overview of how an EEW plant works.



1

During the week, up to 8,000 tonnes of waste are transported to the energy from waste plant.

2

The fuel is collected and placed in interim storage in the waste bunker which has a capacity of around 13,500 tonnes. A slight underpressure is maintained to ensure that no emissions or odours can escape. Environmental protection starts right there.

3

The crane driver mixes the waste and transfers it continuously to the feed hopper from where it reaches the combustion grates for the two lines (boilers).

4

As waste self-combusts at the high temperatures in the boiler, no additional fossil fuels are required. Only when the boiler is powered up and powered down are oil burners switched on in order to guarantee the minimum temperature of 850 °C. This high temperature is required to ensure that pollutants are largely destroyed.

5

Up to 148 tonnes of steam are generated every hour from the thermal energy of the two boilers. With a pressure of 40 bar and a temperature of 400 °C the steam drives a turbine connected to a generator.

6

Approx. 166,000 megawatt hours of electrical energy and 482,000 megawatt hours of process steam are generated in this way at the same time.

7

With a temperature of approx. 230 °C the flue gases leave the furnace and then undergo several stages of flue-gas cleansing. The sodium bicarbonate initially injected binds the acids present in the flue gas. The resulting salts are deposited in the bag filter.

8

The addition of ammonia water ensures that nitrogen oxides are converted to environmentally neutral nitrogen and water through a chemical reaction in the catalytic converter.

9

Hydrated lime and carbon are then used to bind further heavy metals and gaseous substances and dust in the downstream entrained flow reactor. The deposits collect in the second bag filter.

10

The cleansed flue gas then leaves the 70 m chimney. What remains is slag, flue ash and filtration dust. The slag is recovered and used for road-building and landfill. Flue ash and filtration dust are used as backfilling material in mines.

11

The plant easily complies with the strict statutory emission limits and in most cases is substantially below them. A measuring station at the chimney determines and monitors the emissions on a continuous basis. The results are transmitted to the responsible supervisory authorities.

Jan Henze, E&I Engineer, EEW Energy from Waste Delfzijl B.V.

Technical data

Commissioning	2010
Total investment	160 million euros
Capacity	384,000 tonnes/year
Number of combustion lines	2
Waste bunker capacity	15,000 cubic metres ≈ 13,500 tonnes
Calorific range of waste	8 - 16 megajoules/kilograms
Combustion temperature	> 850 °C
Power generation	166,000 megawatt hours/year ≈ 48,000 households
Process steam generation	482,000 megawatt hours/year

We're improving the CO_2 balance.
A benefit for the environment.

Energy generation from waste is active environmental protection. With an averageshare of 50% biogenic substances in waste , it is recognised that energy from waste plants produce energy from renewable sources pursuant to the Renewable Energies Act (EEG) and thus help to achieve the climate goals in Germany and Europe.

Also exemplary: the emissions of our waste recycling plant easily comply with the strict statutory regulations of the Federal Immissions Control Act (Bundesimmissionsschutzverordnung) and are substantially below them in some cases. This is documented by the seamless emissions control by the supervisory authority.
Ideally, come and see for yourself and take a look in person by visiting our plant. You will discover that at EEW Energy from Waste, we give waste a job in climate protection.

Our annual environmental contribution.

Up to 384,000 tonnes
of recycled waste

166,000 megawatt hours of power
produced in an environmentally
friendly manner

Power produced in an
environmentally friendly manner
for 48,000 households

482,000 megawatt hours
of steam produced with
energy-saving technology

We tackle the future.
And assume responsibility.

More than 145 years – that is how long our expertise has been built on progress. Founded in 1873 as Braunschweigische Kohlen-Bergwerke (BKB), the company was soon also operating as a power generator and has grown steadily to the present day. EEW Energy from Waste entered the waste combustion sector as early as 1990 and today is the most experienced company with the greatest expertise in the environmentally friendly generation of power from thermal waste recycling. As the market leader in Germany, we make a substantial contribution with 18 plants here and in neighbouring countries to resource management and to a reduction in greenhouse gas emissions.

Our figures speak for themselves:
Our plants have a yearly energy recycling capacity of around 4.7 million tonnes of waste. This means that we generate approx. 2.4 million megawatt hours of power and 2.6 million megawatt hours of process steam and 900,000 million megawatt hours of district heating.* The power volume produced by EEW alone corresponds to the electricity requirements of around 700,000 households.**
Around 1,150 highly qualified, dedicated employees are sending a clear signal with energy which provides a benefit not only to numerous companies, but also hundreds of thousands of households and particularly the environment.

References:
* Power, district heating and steam volume produced by our currently 18 EEW Energy from Waste plants in 2017
** Assumed annual average requirements per household: 3,450 kWh

We are not resting on our laurels; instead, we are continuously improving the processes and the efficiency of our plants. Ultimately we offer municipalities and companies pioneering waste management that keeps an eye on every aspect: we offer customised waste disposal concepts, accept the waste and also take care of the statutory documentation procedure. With outstanding performance and equal 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 Delfzijl?
You are very welcome! Simply contact us at:

EEW Energy from Waste Delfzijl B.V.
Oosterhorn 38
9936 HD Farmsum
Netherlands

T +31 596 674-000
F +31 596 674-394

delfzijl@eew-energyfromwaste.com
www.eew-energyfromwaste.com

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