

**WASTE IS MORE**



**YOUR WASTE IS GREEN GOLD**





Energy produced from waste is 80% CO<sub>2</sub>-neutral because most of the waste consists of organic material. In addition, the waste-based energy replaces power and heating produced by burning coal or oil.

Every day things are thrown away because they are no longer of any use; things such as dinner leftovers, broken electrical appliances, cardboard or paper packaging, glass or metal containers. All of it represents useful raw materials that Amagerforbrænding strives to utilise as effectively as possible.

At Amagerforbrænding we understand waste and realise that optimal treatment provides benefits to the environment.

Many of the items that are discarded can be recycled and used again to produce new items. For example, 1,000 aluminium cans can be turned into a new bike, and 50 plastic bottles can be reborn as a new fleece sweater.

By sorting and bringing their waste to the recycling stations, everyone can play a part in making the best possible use of things that would otherwise end up in the wastebin.

Some parts of the waste cannot be used to produce new items. This goes for the leftovers from yesterday's supper, milk cartons, packaging materials etc. Even so, they still contain resources that we can utilise.

This type of waste is incinerated in Amagerforbrænding's waste-to-energy plant, and heat from the incineration process is used to generate eco-friendly electricity and heating. One bag of household waste can be converted into three and a half hours of green electricity and almost four hours of district heating.

Around six per cent of the waste in Denmark cannot be recycled or incinerated, which means it has to be deposited in an environmental safe landfill or be specially treated. In comparison, more than half of the waste generated in the US is deposited in landfills.

Amagerforbrænding is involved in all stages of the handling of Copenhagen's waste. Thus, we play an active part in developing which allows us to continually improve our ability to derive economical, as well as environmental benefits from the waste.

#### **A SELF-FINANCING OPERATION**

**Because Amagerforbrænding is a public company, our income and expenses need to balance in the long term. Therefore we can spend our profits from efficient and effective operation of the waste-to-energy plant on developing new treatment methods and on keeping down waste treatment fees.**



Part of the heat generated by the waste-to-energy-plant is used to heat the water circulating in Copenhagen's district heating grid. That way, many of the city's inhabitants, around 70,000 homes, get their waste back in the form of district heating.

## THE MANAGING DIRECTOR'S STORY - INNO-WHAT DID YOU SAY?

To me, innovation is about finding new ways of doing things; new methods that create value to Amagerforbrænding, to society and the environment. This goes for our day-to-day efforts to make an old power plant and recycling stations run efficiently, as well as for the important research projects that will, hopefully, challenge and develop the entire industry.

In my view, innovation is when we at Amagerforbrænding carry out our jobs in new and creative ways that generates value. When I look at our staff I feel that we have something that are quite unique. We are very open to new initiatives and often think out of the box in our everyday activities in order to find the best waste solutions, for now as well as for the future.

We take responsibility for the environment. At our recycling stations we save the world's natural resources and CO<sub>2</sub> emission by reusing the same materials over and over again. We constantly seek to find new ways of using the waste to make sure that as much material as possible is recycled.

In the waste-to-energy-plant, non-recyclable waste is turned into electricity and heating. Here, innovation consists of the good ideas, large and small, that continuously develop the plant and ensure higher efficiency and better environmental results. For example, recent years we have seen the development of more efficient flue gas cleaning, and we have achieved a significant reduction in waste water.

We also have an ongoing cooperation with the waste experts of the future, PhD students at the Technical University of Denmark, who conduct their research with us. We give them access to the knowledge and know-how that Denmark is renowned for around the world, and they help us remain at the cutting edge of development. That is where we at Amagerforbrænding want to be, and that is why our gates are always open to good ideas that may help us develop and derive even more sustainable value from the waste.

### HEALTHY BODIES IN A HEALTHY COMPANY

**Amagerforbrænding's most important resource is our employees. That is why we make strong efforts to make sure that they are as comfortable as possible in their workplace - and in their spare time. Every day, employees can get free, fresh, organic fruit and a healthy buffet in the canteen, before borrowing a company bike to go to a meeting downtown. Several times a week employees have the possibility of taking part in various physical activities with their colleagues, either in the gym or with the company's running team.**



Ulla Röttger, managing director



The materials found in the waste can be recycled again and again, which saves the world's raw materials such as metals. Every year, Danes throw away aluminium in a quantity large enough to produce 5 million new, recycled bicycles.

## HIGHLIGHTS FROM AMAGERFORBRÆNDING - MORE RECYCLING - LESS CO<sub>2</sub>

By handing in waste such as iron and metal at the recycling stations, CO<sub>2</sub> emissions are reduced. Every year, customers at Amagerforbrænding's recycling stations help save the climate from several tonnes of CO<sub>2</sub>.

Amagerforbrænding receives more than 5,000 tonnes of dented frying pans, old filing cabinets and dilapidated radiators in our recycling stations every year. This means that the climate is saved from more than 10,000 tonnes of CO<sub>2</sub> emission just from the iron and metal container.

We save CO<sub>2</sub> because manufacturing of new items from used iron and metal requires less energy than manufacturing from new iron and metal.

At the same time, everybody who hands in used iron and metal to the recycling stations contributes to saving the world's natural resources, as it reduces the need for mining in different parts of the world.

Amagerforbrænding calculates CO<sub>2</sub> accounts for different categories of material collected at the recycling stations. This provides useful knowledge that we can use to convince people to remember to hand in their waste for recycling.

### **MORE WASTE IN EACH CONTAINER = LESS LORRIES IN THE STREETS**

**At the recycling stations Amagerforbrænding continually strives to improve the environmental factors. One of our important responsibilities is to load as much waste as possible in the containers before taking the waste for further treatment. Our environmental requirements to the vehicles that carry the containers are also very high in order to ensure as limited and clean exhaust fumes as possible.**



The heat produced by waste incineration is transformed into green electricity in Amagerforbrænding's turbine. The waste-to-energy plant generates enough electricity to supply around 70,000 households in the Greater Copenhagen area.

## **HIGHLIGHTS FROM AMAGERFORBRÆNDING - FOOD LEFTOVERS ARE TURNED INTO GREEN ELECTRICITY**

Dinner leftovers, empty milk cartons and greasy sandwich wrappers may not be very appetising. Nevertheless, the contents of your waste bin are an important part of Amagerforbrændings business foundation, and they are returned to households in a new and valuable form.

Every day around 150,000 waste bags arrive at the waste-to-energy-plant, which transforms them into eco-friendly energy. At the same time, a similar quantity of waste arrives from various types of companies. In total, Amagerforbrænding receives somewhere between 1,300 and 1,500 tonnes a day; the daily volume would fill up more than three public swimming pools.

When the waste is received at the waste-to-energy-plant it is converted into energy that is returned to families and companies in the form of green electricity and district heating. The energy is climate friendly, because it replaces energy that would otherwise have been generated by burning e.g. coal or oil. It is also eco-friendly because the flue gases from the incineration are cleaned before they are emitted through the chimney.

Electricity and heat generated from waste is 80 per cent CO<sub>2</sub> neutral, as most of the waste consists of organic materials such as food leftovers.

In our waste-to-energy plant the waste is incinerated in four large furnaces, where the temperature reaches 950 °C. The heat produced in the furnaces turns water into steam, which is fed into two turbines that generate enough electricity to power around 70,000 homes. When the steam has passed through the turbines, its residual heat is used to heat the water in the district heating network which runs in underground pipes beneath most of the Copenhagen area. It is used to heat the homes of 70,000 families, which amounts to ten per cent of the total district heating capacity in the area.

**DON'T WASTE IT – USE IT!**



The residue from waste incineration is called slag. Slag can replace gravel as a construction material, which means that it can be used in for example large road construction works.

## DON'T WASTE IT – USE IT!

Amagerforbrænding is a green waste treatment and energy company working to utilize the values in waste. The company is owned by the local municipalities of Dragør, Frederiksberg, Hvidovre, Copenhagen and Tårnby.

At our recycling stations private citizens can deposit discarded items that can be recycled and utilized in the production of new products.

We operate an waste-to-energy-plant centrally placed in Copenhagen, where waste from the city's waste bins are transformed into green energy.

We also handle waste that cannot be recycled or incinerated.

Part of the waste is deposited at a secure waste deposit AV Miljø, which Amagerforbrænding co-owns. Also, we administrate the company SMOKA, which handles hazardous waste, mainly waste products from mineral oils and chemicals.

**Read more on: [www.amfor.dk](http://www.amfor.dk)**

**Amagerforbrænding · Kraftværksvej 31 · 2300 København S · +45 3268 9300 · [amfor@amfor.dk](mailto:amfor@amfor.dk)**





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