



## CAN YOU REDUCE YOUR FUEL COSTS BY UP TO 80%?

STRAW | WOOD CHIPS | WOOD PELLETS









We have delivered more than 3,500 fully automated plants to customers worldwide, within sectors such as agriculture, industry, institutions and heating plants.

## ... YES, YOU CAN IF YOU SWITCH TO A LIN-KA BIOFUEL PLANT

A LIN-KA biofuel plant is **made in Denmark** and can be adapted to fit your needs. LIN-KA has installed fully automated plants since 1978, helping our customers to achieve substantial CO<sub>2</sub> emission reductions. Plant sizes range from 70 kW to as much as 10,000 kW and are fuelled by straw, wood chips and wood pellets.

With over 30 years of experience and know-how of biomass combustion, LIN-KA is one of the world's leading companies in its field, consistently offering our customers extensive experience and a high level of quality.

We have delivered more than 3,500 fully automated plants to customers worldwide, within sectors such as agriculture, industry, institutions and heating plants. The plants are delivered as hot-water or steam plants. All plants are designed to ensure maximum fuel utilisation, high operational reliability and minimal maintenance costs.

Our biofuel plants are automatically controlled using PLC, which also monitors that the plants are always running optimally. The plants can, of course, also be controlled and monitored via the Internet. All boilers are certified according to AT (Denmark), SA (Sweden), TÜV (Germany), RHI (UK) and ASME (USA). The boilers are manufactured in cooperation with Danstoker using only high-grade steel from Europe's leading steelworks.

### PATENTED COMBUSTION SYSTEM

Our LIN-KA H biofuel boiler is a cylindrical, highly efficient three-pass stay bolt boilers designed for burning biomass (straw, wood chips and wood pellets). It features a smooth flame channel, water-cooled rotation chambers and is dimensioned to achieve full combustion and efficient utilisation of radiated heat in the flame channel, while convection heat is utilised to the maximum in the two subsequent flue gas sections.

A moveable step grate is mounted at the end of the boiler combustion chamber, avoiding slag formation. Using LIN-KA's worldwide patented system, air is added from the feed end by means of the parallel flow principle, thereby drawing the flue gas into the boiler and effectively burning it off. This ensures maximum efficiency and lower emissions.

The combustion system has an efficiency of as much as 94.7% - one of the highest in the EU.





Primary and secondary air control ensures efficient combustion, avoiding slag formation and guaranteeing an efficiency up to 94.7%.

## LIN-KA STRAW-FIRED PLANTS - OPTIMUM FUEL UTILISATION

A LIN-KA straw heating plant is a biofuel plant which ensures optimum fuel utilisation and high efficiency. The straw is converted into heat at extremely high combustion temperatures (800-1200°C). Primary and secondary air control ensures efficient combustion, avoiding slag formation and guaranteeing an efficiency up to 94.7%.

Individual straw heating plants have undergone rapid development, since the first plants came onto the market in the late 1970s. Efficiency has doubled, and emissions of harmful substances have been significantly reduced. More customers are now choosing to invest in the slightly larger boilers, not least because straw is an easily accessible resource for most customers.











If the fuel is moist, it may be advantageous to install a flue gas cleaning system and an absorption heat pump to achieve efficiencies of up to 120% and to remove particles from the flue gas (emission).







## **LIN-KA WOOD CHIP-FIRED PLANTS - IDEAL FOR ALL TYPES OF FOREST AND INDUSTRIAL WOOD CHIPS AND RESIDUAL PRODUCTS FROM THE WOOD INDUSTRY**

Wood chips with a moisture content of up to 60% can provide an efficiency of up to 120%. If the fuel is moist, it may be advantageous to install a flue gas cleaning system and an absorption heat pump to achieve efficiencies of up to 120% and to remove particles from the flue gas (emission).

A Wood chip-fired LIN-KA plant may be designed with the following fuel flow:

1. Wood chip container
2. Walking floor system
3. Crane transport

The same combustion performance is achieved, regardless of fuel flow, because the boiler is fitted with a moveable step grate in which every second step is moveable, keeping the fuel in constant movement. The step grate is divided into three zones in order to achieve complete combustion:

- Zone 1 is the dry zone for the wet fuel
- Zone 2 is the gasification zone where fuel gasification occurs
- Zone 3 is the combustion zone

Heat radiation impact in case of wet fuel with a 30-60% water content is achieved by fitting the boiler with heat-resistant tiles, allowing the water to evaporate.





# **LIN-KA WOOD PELLET-FIRED PLANTS - IF YOU WANT MAXIMUM OUTPUT WITH MINIMUM EFFORT AND TO CUT YOUR HEATING COSTS BY MORE THAN HALF**



The plant can be supplied with both an indoor and outdoor silo in various sizes. One of the advantages is that wood pellet-fired plants require a minimum of space and can often be installed in an existing boiler house.

The boiler's design and patented combustion system ensure optimum combustion without slag formation.

Choosing this type of fuel makes it possible to switch to other biofuels, if price changes occur in the market which make other fuel types more favourable.

The wood pellets are produced all around Europe and are normally delivered from one day to the next. This allows for flexible planning of your storage capacity, in partnership with LIN-KA, depending on your needs, plant size etc.







The boiler's design and patented combustion system ensure optimum combustion without slag formation.





Since 1983, LIN-KA has installed more than 60 energy-efficient and eco-friendly plants across Europe, making LIN-KA a trusted and experienced choice for your turnkey projects.

## DISTRICT HEATING PLANTS - MINIMUM SUPERVISION AND HIGH OPERATIONAL RELIABILITY REGARDLESS OF FUEL TYPE

This type of plant is used in small and large cities where a common heating supply is to be established or an existing one is to be expanded. Generally, there is no standard size, but boiler sizes typically range from 500 kW to 10,000 kW.

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What makes LIN-KA heating plants so successful?

- Low energy consumption during operation (5.5 kWh per 1000 kWh produced)
- Minimal maintenance costs
- Maximum fuel utilisation
- High operational reliability
- High reliability of delivery and commissioning

Information about reference projects can be provided upon request. These include the turnkey project Øster Hurup Power Station, which received an award for being the best and cheapest district heating plant in 2014.







## MOBILE HEATING PLANTS - A FLEXIBLE SOLUTION



Suitable for supplying heat anywhere in Europe, in hard to reach areas or satellite towns where no main supply is available. They can also be used in industry where no building structure is desired.

We can install a complete plant with boiler, heat exchanger, multicyclone, plumbing and electrical installations etc. The plant is installed in an insulated steel container or boiler room. It is delivered and erected by crane on a prepared concrete foundation.



We can install a complete plant with boiler, heat exchanger, multicyclone, plumbing and electrical installations etc.



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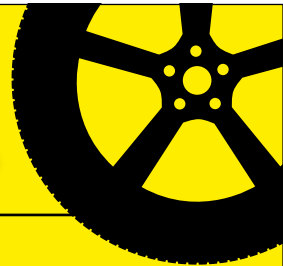
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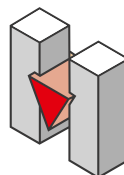


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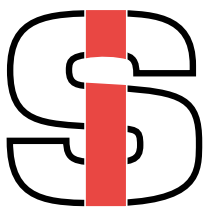
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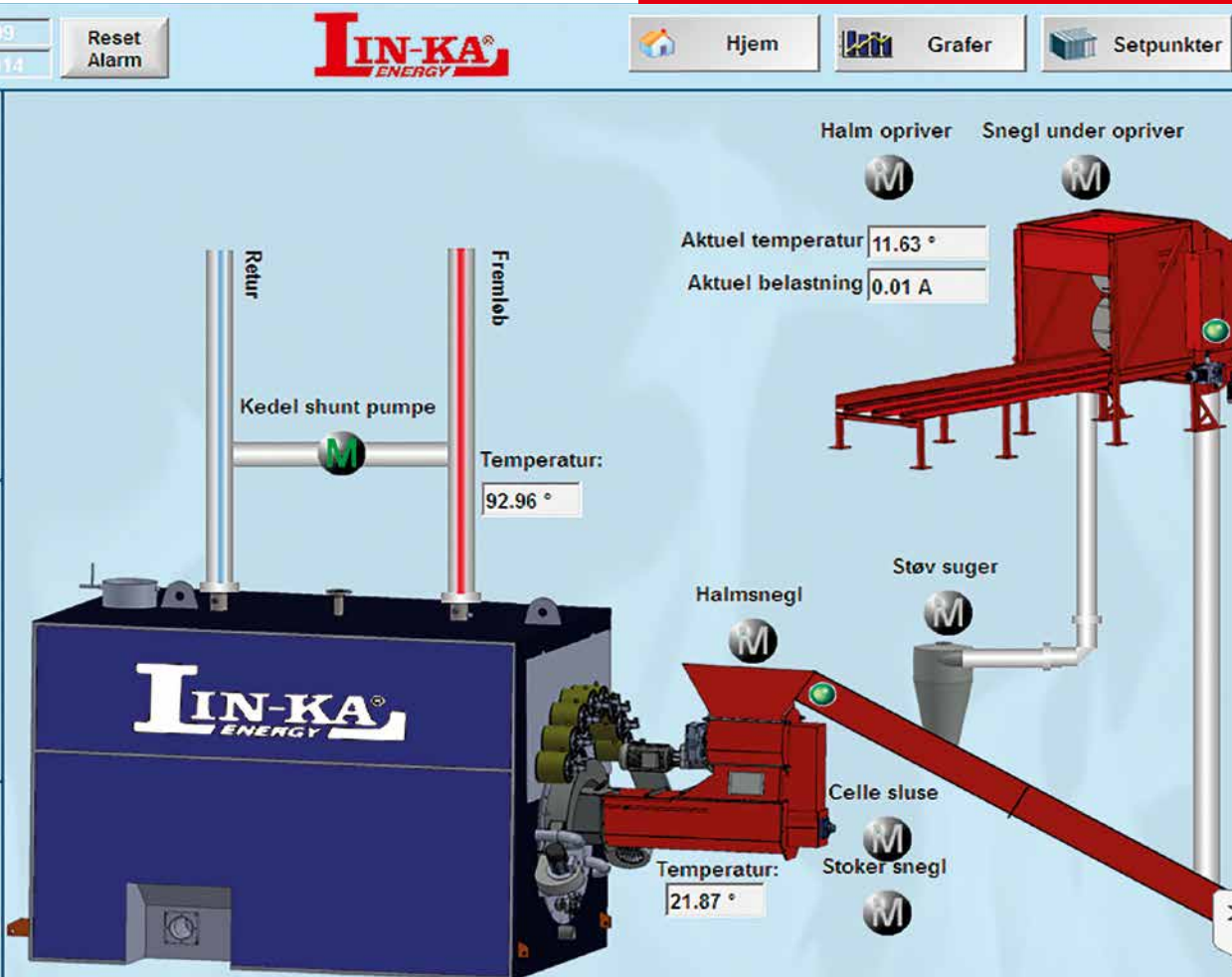
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