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Aalborg Energie Teknik a/s - Biomass Cogeneration Plant

## Verdo Produktion, Randers, Denmark

### The Task

The cogeneration plant in Randers originally consisted of two coal-fired CHP boilers, commissioned in 1982. The plant produces power to the national grid and district heating for the city of Randers, the 6<sup>th</sup> largest city in Denmark.

In the early 00's, an idea was developed to re-use some of the industrial waste in the surrounding areas like meat and bone meal, olive stones, shea nuts, sunflower and bio - pellets in combination with coal. In 2008, Verdo Produktion decided to focus 100% on biomass and changed its name to Verdo to reflect the new green footprint. In both cases, AET was the supplier of choice for Verdo.

### The Solutions

#### The first retrofit:

The 100% coal-fired boilers were converted to use up to 50% biomass pellets. AET re-designed the boiler plants to burn pellets with particles up to 5 - 10 mm.

AET converted the CHP plant by installing the AET Dust Firing System, the AET Fuel Handling System, the mechanical, instrumentation and electrical systems and by re-engineering the control systems and commissioning the plant.

#### The second retrofit:

By extending the furnace by 5 metres and lowering the grate, AET made it possible to utilise 100% biomass, 100% coal or any combination in between. AET supplied, installed and commissioned the full scope by including: AET Fuel Dosing Bins, AET Biomass Chutes, biomass fuel handling and AET Combi Spreaders for both biomass and coal. The economiser sections were refurbished and the AET Combustion Air System, ash handling system, key instrumentations and electrical systems were installed. A successful commissioning followed the re-engineering of the DCS control systems.

The AET Dust Firing System can utilise dusty and small particles up to 5 - 10 mm, while the AET Combi Spreader System utilises coal and biomass chips from separate fuel feeding systems.

Note that Verdo Produktion was previously Energi Randers.

### Customer Statement

Henrik Bøgh Nielsen (Division Director), Verdo:

"The two retrofits have given us a large fuel flexibility to utilise what fuel is available on the market at a low price. The re-build of our boilers in 2008 - 2009 made by AET has been functioning to our full satisfaction and especially the long-term experience with AET Combi Spreaders."

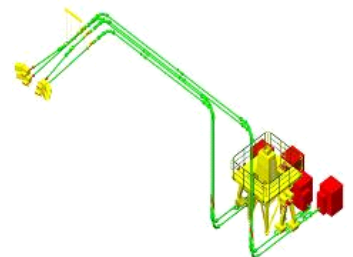
### Additional Information

- A presentation about the fuel conversion from coal to biomass was held at Hot & Cool in Paris: [Please contact sales for further information.](#)
- To obtain more information about this biomass-fired plant and about AET: [Contact AET sales.](#)

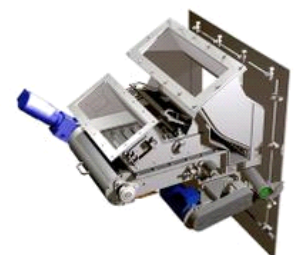
Boiler: 2x95 MW<sub>th</sub>  
111 bara  
525 °C  
Electrical power: ≤52 MW<sub>e</sub>  
Process energy: ≤110 MW<sub>th</sub>



The CHP plant in Randers changed name from Randers Energi to Verdo in order to signalise that they are now using renewable energy.



The AET dust firing system.



The AET Combi Spreader Stoker.



The Biolaq Energies project, in Lacq, is a biomass-fired CHP plant of 54 MW, that utilises forestry wood, and clean, uncontaminated residues from wood processing.

[Read more about Biolaq](#)



Tilbury Green Power is a 125 MW waste wood-fired plant, which commenced operations in 2017.

[Read more about Tilbury Green Power](#)



JG Pears – Newark is a 42 MW MBM-fired cogeneration plant, which commenced operations in 2018.

[Read more about JG Pears - Newark](#)



Akuo Energy - CBN is a 63 MW wood-fired cogeneration plant, which commenced operations in early 2019.

[Read more about Akuo Energy - CBN](#)

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### Zignago Power s.r.l.–successfully producing Green Energy in Italy

The 49 MW Zignago Biomass power plant in Italy, owned and managed by Zignago Power s.r.l., belonging to the Marzotto family empire, has since its installation in 2013 been running with a very high availability (98,8%). The plant utilises wood residues and agricultural waste such as straw, miscanthus and maize. [>Read more](#)



[www.aet-biomass.com](http://www.aet-biomass.com) // [Home](#) // [References](#) // [Biomass-fired Plants](#) // [Verdo Produktion - Randers](#)

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