Akuo Energy - CBN
Østkraft
Tilbury Green Power
Cofely - Biolacq Energies
Cofely - BES VSG
Cofely - SODC Orleans
Rothes CoRDe
Zignago Power
Cofely - BCN
Verdo - Randers
Western Wood Energy Plant
FunderMax - Neudörfl
Linz-Mitte
Schneider - Biopower
Boehringer Ingelheim
Swiss Krono - Heiligengrabe
Pfleiderer - Neumarkt
Pfleiderer - Gütersloh
Egger - Pannovoges
EPR - Glanford

Aalborg Energie Technik a/s - Biomass Cogeneration Plant

Verdo, Randers, Denmark

After two retrofits, carried out by AET, the district heating plant in Denmark's sixth largest city, Randers, was reborn as a biomass cogeneration plant. It can now be fired by 100% biomass fuel or 100% coal - and any combination of these.

The original CHP plant was built in 1982 and has provided Randers city with electricity and district heating for more than 20 years. The plant was originally commissioned as a spreader stoker coal-fired plant by Aalborg Industries.

In 2002-2003 and 2007-2009, two retrofits were carried out by AET:

First Retrofit: Co-firing of Coal and Biomass
In 2002-2003, AET retrofitted the cogeneration plant with an AET biomass dust-firing system. The plant was then able to operate in co-firing mode with min. 50% coal and max. 50% biomass fuel or 100% coal in single mode - and any combination in between.

The biomass fuel system was designed for a variety of granulated biomass products such as meat and bone meal (MBM), olive stones, shea nuts, sunflower pellets, biopellets and others.

Second Retrofit: 100% Biomass or 100% Coal
In 2007-2009 a substantial retrofit was carried out by AET enabling the plant to fire 100% biomass or 100% coal or any combination in between e.g. 70% biomass and 30% coal. This is possible with the AET Combi Spreader Stoker.

A redesign of the two boilers was caried out, taking into account the narrow available space. The CHP plant is now able to burn uncontaminated wood chips as well as dusty fuels.

AET Supply
AET handled the retrofitting of the two boilers as a delivery consisting of:

- Feasibility study
- Fuel handling
- AET fuel dosing and transport system
- AET Combi Spreaders (coal and/or biomass)
- Boiler refurbish of furnace, superheater and economiser
- AET Dust firing system
- AET Combustion air system
- Ash handling system
- Erection of equipment
- Design of electrical system
- Instrumentation
- Engineering of control system
- Commissioning.

Note that Verdo was previously Energi Randers.

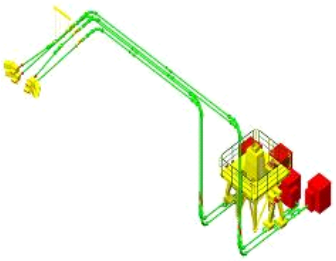
Additional Information

- A presentation about the fuel conversion from coal to biomass was held at Hot & Cool in Paris. Please contact sales for further information.

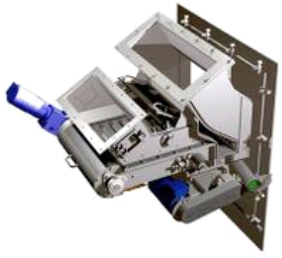
Questions? Need detailed information?
To obtain more information about this biomass plant and/or generally about AET:

Boiler:	2x95 $MW_{fuel\ heat\ input}$
	111 bara
	525°C
Electrical:	52 MW_e
Process energy:	110 $MW_{district\ heating}$

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.

Contact AET sales here

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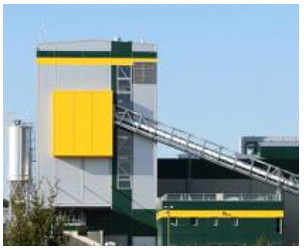
Rothes CoRDe Ltd is a biomass-fired cogeneration plant in Scotland fuelled by a whisky by-product and clean wood.

Read more about Rothes CoRDe.

The SODC Orléans cogeneration plant supplies district heating to15,000 homes, equivalent to 27% of the city of Orléans.

Read more about SODC Orléans



In Landes, France, a 50 MW biomass-fired plant was succesfully delivered to Cofely Engie (former GDF SUEZ) in May 2015.

Read more about BES VSG.

The Biolacq 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 Biolacq

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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, mischantus and maize. >Read more

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