



PowerCrop - Russi

Akuo Energy - CBN

JG Pears - Newark

Tilbury Green Power

Østkraft

Cofely - Biolacq Energies

Cofely - BES VSG

Cofely - SODC Orleans

Roths CoRDe

Zignago Power

Cofely - BCN

Verdo Production - Randers

Western Wood Energy Plant

FunderMax - Neudörfel

Linz-Mitte

Boehringer Ingelheim

Schneider - Biopower

Swiss Krono - Heiligengrabe

Pfleiderer - Neumarkt

Pfleiderer - Gütersloh

Egger - Pannovoges

EPR - Glanford

Aalborg Energie Teknik a/s Biomass CHP Plant

Zignago Power, Italy

Zignago Cogeneration Plant is a biomass-fired combined heat and power plant, which was built and is operated by Zignago Power S.r.l.

Zignago Power S.r.l. belongs to the family-owned company Zignago Holding SpA.

The biomass CHP plant utilises forestry wood, clean, uncontaminated wood residues and agricultural waste (e.g. straw, miscanthus, maize).

High Fuel Flexibility

The Zignago plant is quite unique because of its wide range of fuels:

- | Forestry sector: e.g. forestry wood, tree cuts, brash, trimming, residues from sawmill and maintenance from gardens
- | Agricultural sector residual: e.g. wheat straw, barley straw, maize straw, grain from maize, fruit stones, nut shells and vineyard residue
- | Agricultural sector – dedicated: e.g. miscanthus, sorghum, thistle, poplar and willow.

Performance Test

The biomass boiler plant was successfully commissioned and handed over in the beginning of 2012. The official performance test, carried out by FORCE, indicated the following performance:

- | Combustion efficiency: +99.9%
- | Boiler efficiency: 92.6%
- | In-house power consumption of only 2.3% of fuel heat input
- | Emissions below stringent Italian standards

All measured performances were better than the guaranteed performances by a good margin.

Upgraded in 2014

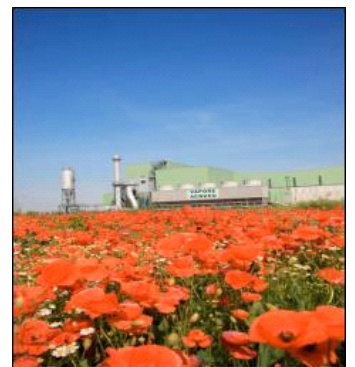
The plant was upgraded in 2014, with a tail end heat exchanger, condenser and district heating system to supply district heating to the nearby villages and to the Zignago industrial facilities.

AET Delivery

AET designed, supplied, constructed and commissioned the following scope of supply:

- | AET Fuel dosing system
- | [AET Combustion System](#) with AET Spreader Stoker and AET-Biograte
- | Oil burner
- | [AET Biomass boiler](#) with superheater and economiser
- | AET Combustion air system
- | [AET SNCR DeNOx System](#)
- | AET Steam air preheaters
- | Condensate preheaters
- | Feed water system
- | Ash handling system
- | Flue gas cleaning with absorbent injection system
- | Flue gas system and stack
- | Tail end heat exchanger
- | Steam condenser for district heating
- | Piping in boiler house and turbine hall
- | District heating pumps and piping at the plant
- | Ducting
- | Insulation

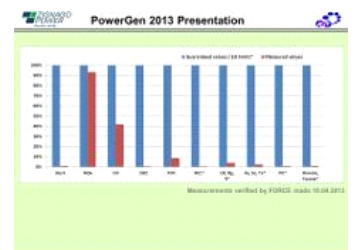
Boiler:	49 MW _{fuel heat input} 92 bara 522°C
Electrical:	17,9 MW _e
Process energy:	4,5 MW _{district heating}



The Zignago biomass-fired power plant in Italy - respecting nature.



3D illustration of the Zignago power plant.



Emission data from the AET Biomass Boiler, presented at PowerGen 2013.

- | Structural steel for boiler house and cladding
- | Platforms and stairs
- | Instrumentation
- | PLC control and SCADA system for the full plant

Besides the above scope, AET assisted in the engineering the of the steam turbine and condenser as well as heat balance optimisation.

Additional information:

- | A joint presentation between Zignago Power and AET was made at [PowerGen 2013](#) in Vienna concerning the unique performance, fuel flexibility and project management during the construction and commissioning.
- | [Please consult the Zignago Power Website for further information.](#)

Questions? Need detailed information?

To obtain more information about this biomass plant and/or generally about Aalborg Energie Teknik a/s:
[Contact AET sales here](#)

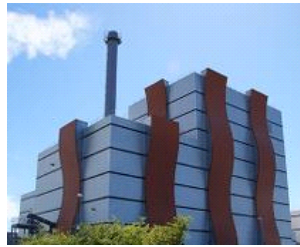
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Rothes CoRDe Ltd is a biomass-fired cogeneration plant in Scotland fuelled by a whisky by-product and clean wood.

[Read more about Rothes CoRDe.](#)



The SODC Orléans cogeneration plant supplies district heating to 15,000 homes, equivalent to 27% of the city of Orléans.

[Read more about SODC Orléans](#)



In Landes, France, a 50 MW biomass-fired plant was successfully 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, miscanthus and maize. [>Read more](#)

