



Central de Biomassa de Viseu. Portugal

Biomass Boiler

Design / Fabrication

Design ENSO Global Energy Solutions

Design Code ASME
CE marked Acc.to 97/23/EC
European Directive

Built in Spain

Grate Detroit Stoker (U.S.A)

Delivery schedule 24 months from Notice to Proceed

Design Fuel: Forest residue
Size: P63. Chipped

(1) If necessary (MSW boilers) we can provide the boiler with the needed gas cleaning system (SCR, SNCR, etc.) in order to fulfil the legal emissions levels.



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Technical Data

Pressure 62 bar (a)

Temperature 440°C

Steam Production 60 t/h

Thermal power 49.99 MWt

Gas Cleaning System Multicyclon + Bag Filter

Emission expected values¹ With 11% O₂

Particles 10 mg/Nm³

NOx 300 mg/Nm³

Type of Boiler Water tube Boiler
Natural circulation

Type of Grate Vibrating Air Cooling

Support Bottom Supported

Feed in system Spreaders

Ash extraction Wet Redler

Flue gas 76,250 Nm³/h

Availability 8,000 h

Efficiency 89.5%



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Power Plant

Project Description

Biomass Power Plant is located in Viseu, Portugal.

The Project was initially developed by ENSO Energy Environment & Sustainability together with FPT Energia, Marguerite, a Fund based in Luxemburg, acquired 90% of the Project company in 2017.

The Plant will use forest residue from Portuguese forests, helping preventing forest fires.

Biomass will be sourced in the form of chips, round wood and stumps to be chipped in site.

In order to minimize water consumption Air coolers were chosen in the design of the Plant.

The Boiler has been provided by ENSO Global Energy Solutions, its flexibility will allow to burn a wide range of low grade biomass with different moisture contents.

Operation and Maintenance will be provided by Magestop Lda. a Portuguese subsidiary of ENSO Energy Environment & Sustainability.

Project Data

Developer	ENSO EE&S / FPT
Ownership	FPT Energia / Marguerite
Financing	BPI, ICO and BCP
Construction	Elecnor
Construction Management	ENSO EE&S
Boiler supplier	ENSO Global Energy Solutions
Construction time	24 months
Commissioning date	Summer 2019
Operation & Maintenance	Magestop
Power installed	15 MWe
Thermal Power	49.9 MWt
Cooling	Air cooling
Grid connection	60 kV
Applicable Regulation	DL226/2005 - RRD
Electricity Production	120,000 MWh/y
Biomass supply	134,400 t/y
Biomass Moisture	25-50%
Turbine supplier	SIEMENS