

# Enna Power Plant

## Air preheater for biomass boiler



The APH is installed in the air/flue gas duct system and is used to preheat the combustion air prior to entering the boiler by exchanging heat with the hot flue gases.

The APH is of the rotary regenerative type with a matrix of heating elements which transfer the heat by alternately being heated by the flue gases and cooled by the air for the combustion.

The APH is a bi-sector type with one sector for the flue gas and one sector for the air. The heater is provided with BWSC's advanced Active Leakage Control system in order to minimize the leakage of air to flue gas.

BWSC (then:BWE) has been awarded contract for the supply of an Air Preheater (APH) to be installed at the first biomass cogeneration plant in the Sicilian region of Enna, Italy. The owner of the plant is RWE Innogy Italia together with its joint venture partner Fri-El Green Power and the Roman company Infrastrutture e Gestioni S.p.A. Commissioning is due in late 2012.

The biomass plant has a capacity of 18.7 megawatts and is designed for a power generation output of 128,000 megawatt-hours. This is enough to supply about 30,000 residential households with electricity per year. The biomass fuel will come from the regional eucalyptus tree plantations.

### Performance Data:

#### Air side:

Flow, outlet 36 kg/s  
 Temperature, inlet 35 °C  
 Temperature, outlet 161 °C

#### Flue gas side:

Flow, inlet 39 kg/s  
 Temperature, inlet 180 °C  
 Temperature, outlet 72 °C

### Dimensions:

Type: VI 21.0 / 2250

Rotor diameter 5.20 m  
 Rotor height 2.55 m  
 Rotor speed 1.0 min<sup>-1</sup>  
 Hot end elements DU  
 Height 850 mm  
 Intermediate layer DU  
 Height 850 mm  
 Cold end elements DU  
 Height 550 mm  
 Heating surface 6,900 m<sup>2</sup>

Total weight 75 tons

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