

Centre Hospitalier Sud Francilien

Health

Main CHP plant indicators

Heat capacity (total)	kW _{th}	2,194
Electrical capacity (total)	kW _{el}	528
Technology	Turbodren ORC	
Number of units	1	
Manufacturer	Turbodren	
Type of fuel	Biomass	
Heat: yearly generation	MWh	17,600
Electricity: yearly generation	MWh	3,200
Year of construction	2011	
Total investment costs	EUR	n. a.
Financing	Other public found	
State support	Other	
Location	Evry, France	

Picture



General description of the case

The CHSF (Centre Hospitalier Sud Francilien) developed the project in a context of sustainability: using wood as main source of energy, energy efficiency; Reference in the HQE for tertiary building program.

This hospital is the first certified HQE «établissements de santé» (conception phase) mainly using renewable energies.

The main constraints in the project were:

- Multiplication of energy sources (and use of renewable ones),

- Reduction of the energy needs.

Centre Hospitalier Sud Francilien – main data:

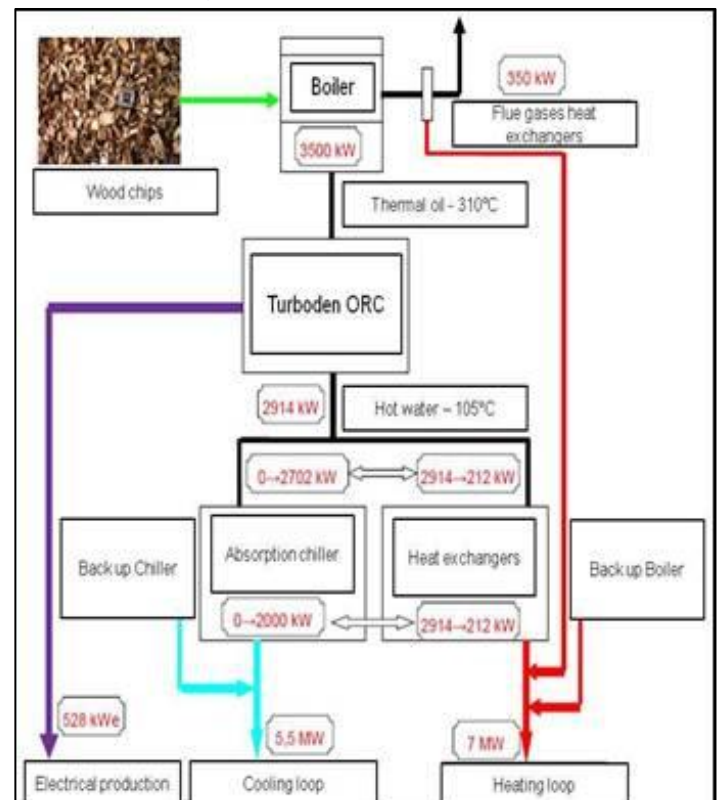
- 1st HQE certified hospital using renewable energies,
- 110,000 m² – 4,500 rooms,
- More than 1000 beds,
- 130 consulting rooms,
- 23 surgical units.

Energy characteristics (energy needs):

- 7 MW_{th} hot energy,
- 5,5 MW_{th} cold energy,
- 6,6 MW electric.

Energy characteristics (energy supply):

- Biomass boiler: 3,500kW_{th},
- Cogeneration through ORC: 2,900kW_{th} and 528 kW_e,
- Cold energy produced by chiller: 2,000kW_{th},
- Chiller supplier: York (Johnson Control's Group),
- Cooling towers supplier: Baltimore («trillium towers»).



Success factors

The main goal was to develop a sustainable building certified:

- Système de management d'opération (SMO),
- Qualité environnemental du bâtiment (QEB).

The CHSF: is a pilot project for NF* certification of tertiary building with approach HQE for sanitary plants.

ORC was appreciated for the possibility to produce both electric and thermal energy (heat and cooling) in a safe way and easy going plant.

* Norme Française

Conclusions

France has a great biomass potential.

Electricity from renewable sources is promoted through a feed-in-tariff scheme.

Currently in order to be eligible for the feed-in-tariff biomass-fired CHP plants shall have a capacity of at least 2 MW, with a maximum of 12 MW.

<http://www.turboden.eu/it/references/references.php?country=FRA&application=0&power=all>