THE GEOTHERMAL HEAT NETWORK

OF BORDEAUX-MERIADECK



The history of the project... <u>After the 2^{ème} oil crisis of 1979</u>

- Which alternative energies ? ... To replace oil and gas

- Hot water in the subsoil : huge energetic ressources (aquifer « Cénomano-Turonien » - 1 000 m)

 Central area for buildings heating : new « Mériadeck » area renewed in the 70's (#100 % office buildings)

REGAZ B O R D E A U X Porteur d'énergie Renewable energy since 1983

The geothermal aquifer

- Low energy = 53°C
- Flow rate = 110 m3/h
- Single well
- Potentialy...
 - ...for heating in winter 7 to 10 GWh / year

(2000 hours / winter)

Price of energy # 60 €/MWh





The heat network

- 2 400 meters long
- Central urban area

> 96% Renewable energy





Which main buildings ?



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An important development during the past 10 years

Energy provided

& geothermal water pumped



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Porteur d'énergie

The Geothermal Plant



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Electric consumptions



120 MWh/year Ratio electric energy bought / thermal energy sold = 2,7 %

Geothermal Plant of Mériadeck

Porteur d'énergie

8

Supervision 24h/24



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DEAUX

BO R Porteur d'énergie

How it works





Using cold geothermal water

Rejected cold water

- Since 2007 to clean Bordeaux's pavements (to save potable water)
- Since 2012, filling one of the city swimming pool
 - = 30 000 cubic meters a year
 - \rightarrow Economy of potable water + econmy of energy

Mériadeck geothermal Plant



Enhancement of energy production

- To reduce the temperature of the geothermal water rejected

- The reduce the amount of geothermal water pumped, for the same energy provided in the network

- and therefore... to find new buildings to connect

- operating in mars 2020



A new Heat Pump in the plant



In Conclusion

<u>A local resource...</u>

Which needs :

- Important CAPEX,
- Important heating needs arount the well,
- Low running costs

And provides :

- •A renewable energy in the city centers (> 96%)
- A competitive energy cost (< 70 €/MWh)
- Avoid CO2 emissions

