



Press release  
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## Geothermal energy and biomass: a winning pair for the Bordeaux Grand Parc heating network

With the aim of extending and greening up the Grand Parc heating network, Bordeaux Métropole has tasked ENGIE Solutions with designing and setting up a local, ethical solution by building a geothermal power plant combined with a biomass heating plant. The special feature of this winning combination is that it exploits an unused geothermal well while simultaneously recharging a depleted water table supplying drinking water. It will provide heating and hot water to the equivalent of some 6900 additional homes, with a power supply that is 86% derived from renewable sources. The project is a major step forward for Bordeaux Métropole, which has set itself the goal of transforming the region into a positive-energy area by 2050.

Awarded to ENGIE Solutions at a Council meeting held on 26 November, the project aims to extend the current network (4 km) by 9 km and green it up by autumn 2024 through an inventive solution.

### Geothermal energy (70%) and biomass (16%): a groundbreaking combination

To help Bordeaux Métropole achieve its energy transition goals, teams from ENGIE Solutions have designed a unique system. It comprises a biomass-fuelled heat production facility and a geothermal power plant on the site of a well built in 1981, which had lain dormant until now.

As part of a 25-year concession covering the heating network, known as “Grand Parc Énergies”, ENGIE Solutions will renovate the existing 1000-metre-deep production well and get it up and running. Once operational, it will produce water at a temperature of 44°C with an optimised flow rate. The geothermal power plant will have a total output of 7.4 MW thanks to 4 heat pumps supplied by 100% local and renewable energy, a large share of which will be generated by the dams of *Société Hydroélectrique du Midi* (SHEM) and the Fanjeaux solar farm (ENGIE) as part of a turnkey Green PPA\*. This solution supports the Métropole’s drive to green up its network while at the same time offering users some protection against the volatility of the energy markets and their accompanying price fluctuations.

A major environmental asset, the injection well produced in the Eocene layer (a layer situated 300 m below the Earth’s surface) will provide a way of recharging the over-exploited local water tables with around 781,000 cubic metres per year of drinking water.

The peak-demand biomass heating plant will be composed of 3 boilers with a combined installed capacity of 4 MW. This highly efficient, discreet infrastructure will provide local residents with heat and hot water. As early as 2025, wood fuel sourced within a maximum radius of 100 km around Bordeaux, in order to boost the local supply chain, will be delivered 50% by natural gas vehicles.

This combination of environmentally friendly facilities and systems will enable streamlining and optimisation of wood fuel supplies.

From an environmental standpoint, the project will lead to annual savings of 12,800 tonnes of CO<sub>2</sub>-equivalent emissions in the Bordeaux Métropole area.

### Perfectly integrated into the local environment, to safeguard quality of life for local residents

Carefully tailored to the local landscape down to the smallest detail, the design and dimensions of the peak-demand biomass heating plant conceived by engineers from ENGIE Solutions and landscape architects from Art'Ur Architectes form a seamless, discreet and efficient architectural solution which gives pride of place to nature in an urban setting.

All existing trees will be saved, and 16 more will be planted. The heating plant will be adorned with a green roof and the walls will be fitted with a steel structure supporting vegetation on the façades. A footpath will be built alongside the production facilities, providing access to all of the district's amenities (swimming pool and Grand Parc high school) from the tram stop.

Respecting local residents and the overall harmony of the neighbourhood is a key dimension of this project. Of particular concern is the protection and development of biodiversity on the land around the power plant. Actions include the planting of flowers in clearings, a wide variety of greenery including honey-producing plants, the installation of beehives, and sustainable management of pastures through twice-yearly mowing.

*"This project underscores the ability of our experts to design bespoke, forward-looking energy solutions that are perfectly adapted to the needs of a particular area and geared to ensuring maximum comfort for local residents,"* stressed Yann Rolland, Deputy Managing Director of ENGIE Solutions. *"We are truly proud that Bordeaux Métropole has entrusted us with this new project. It's also further proof that the energy transition is already under way, driven by the determination of our councillors and the inventiveness of our people. We have a simple ambition: to design sustainable solutions that benefit local authorities and inhabitants."*

#### Key figures:

- A **13-km** heating network by the end of the project (compared with 4 km today)
- **52 GWh** of energy produced by the end of the project (compared with 19 GWh today)
- **81** substations by the end of the project (compared with 23 today)
- 1 geothermal well combined with 7.4 MW heat pumps
- **3** wood boilers with an output of **1.35 MW**
- **86%** of the network's energy mix from renewable sources
- **16 trees** planted on the site of the wood heating plant
- **2516 m<sup>2</sup>** of plant-covered land protected and enhanced in the city centre
- **50%** of biomass deliveries using natural gas vehicles as of 2025
- **781,000 m<sup>3</sup>/year** of cooled, treated geothermal water injected into the over-exploited groundwater.
- **100%** local, green electricity to supply the geothermal power plant (20% Fanjeaux PPA, 80% SHEM)
- **12,790 tonnes** of CO<sub>2</sub>-equivalent saved in the Bordeaux Métropole area.