Role of energy networks in the Smart City stakes and answers of Lille European Metropolis

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Lille European Metropolis and energy

High dependence of energy imports

- 95% of our energy is imported
- An annual consumption of 27 TWh, mostly carbon, of which 50% for heating
- An energy bill of more than 2 billion euros per year

Quality power distribution networks

- A gas service in all municipalities of the Metropolis
- More than 100 km of heat distribution networks in urban areas
- Quality and secure electricity network

A particular urban territory

- An annual bill for residential housing of 1,550 euros
- Concentration of the population on 50% of the territory
- Collective and detached house mostly developed
SMART CITY and energy networks

Why a SMART CITY?

• A more adaptive and efficient city to improve the quality of life of the inhabitants
• An ecosystem of functions, services and connected objects thanks to new technologies
• A challenge to make a resilient territory

The role of energy networks

• A dynamic and intelligent connection between producer and consumer
• Renewable energy in good quality at the right time for a good use
• Quality energy for all and at the best price
Lille European Métropolis,

At the heart of a region in revolution!

- Energy efficiency and sobriety
- Decarbonation and local energy production
- Territorial and social solidarity
- Economic development and employment
A MULTI-ENERGY DEVELOPMENT

SO MEL SO CONNECTED, the smart electricity grid of the MEL
- Industrialize the development of smart grids
- Connect solar photovoltaic production and consumption and develop flexibility of consumption
- Massively develop electric charging stations without new investment in the electricity networks

Biomethane from our organic waste
- In 2011, the first time in France to inject biogas into the networks thanks to its center for recovering organic waste from households
- Methanizers in all our wastewater treatment plants by 2027 and develop 5 agricultural methanisation units in 5 years,
- Mesh of territory in CNG station to develop alternative mobility

A heat network to enhance recovery energy
- Maximize the recovery energy of our waste incinerator, industrial heat and data center
- From 20% to 70% renewable and recoverable energy in the energy mix
- Serving in 10 years 100,000 citizens mainly in energy poverty area
1. An urban highway that crosses districts with potential developments
2. An available overall power of 50 MW with a possible extension to 65 MW
3. Valves have been installed on the way to ensure the future development
4. Interconnection of North and South heat networks of the metropolitan area
5. A €65 million investment (highway and adaptation of distribution networks) financed in 10 years
6. An average selling price of heat for €27 MWh for the first 215 GWH then €11 MWh beyond

Connection - Ø 500 mm To Lille’s heat network October 2020 180 GWh heat a year Discontinuation of coal use
Connection - Ø 250 mm To the Roubaix heat network October 2019 75 GWh heat a year Development of the network

Waste incinerator in the city of HALLUIN 350,000 tons/year 250/350 GWh of heat Supply of 25 to 30,000 housing
PERIMETERS OF CONTRACTS IN 2030-2040

Contracts in 2040
A STRATEGY THAT CONNECTS PRODUCTION AND NEEDS

Heat networks, a major tool for the energy transition of the MEL

- Densification of current heat networks
- Network development on new municipalities
- Develop very low temperature and 2.0 networks
- Develop a cold supply powered by the heating network
- Storage development and geothermal power supply
- Convergence of heating costs by 2035
- 70% renewable energy rate

70% renewable energy rate