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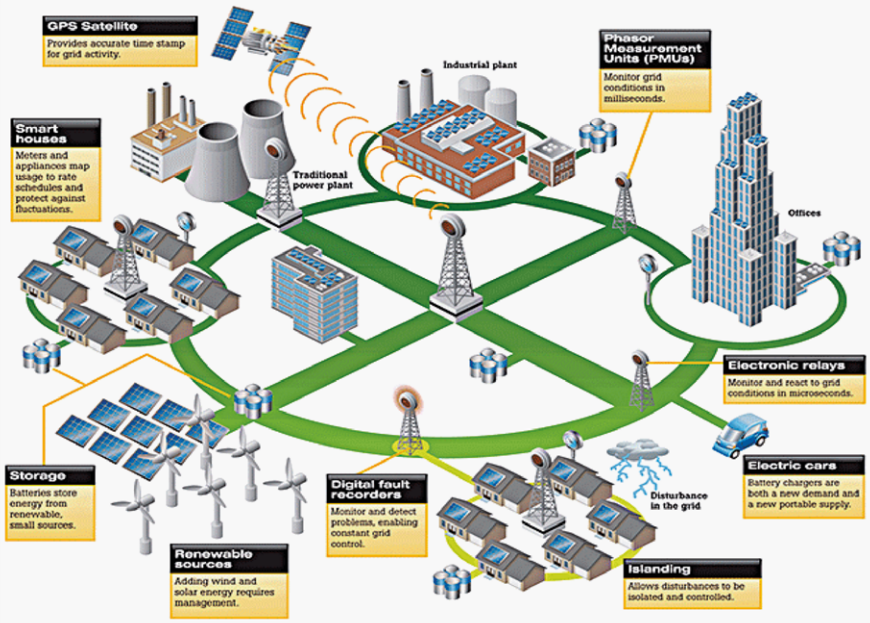

LARGE SCALE SMART GRID DEPLOYMENT

IN THE EUROPEAN METROPOLIS OF LILLE (MEL) TERRITORY

THE "SO MEL SO CONNECTED" PROJECT INVESTMENTS FOR THE FUTURE PROGRAMME (PIA) FOR SMART GRIDS

This project aims to prepare for the industrialisation of Smart Grids and better understand potential business models. These general objectives will lead to the development of innovative services for industry and individuals in four types of situations:

A. *Self-consumption in non-residential areas with photovoltaic panels on buildings.*

B. *Recovery of energy potential in an urban territorial unit.*

C. *Optimisation of the electric vehicle charging cycle through the deployment of electric vehicle supply equipment (EVSE).*

D. *Approaches that combine energy planning with measures to build social cohesion, in order to identify situations in which residents face energy insecurity.*

The work is scheduled to begin in 2017 for entry into service in 2020.

KEY FIGURES

- A test in a 4,000 ha urban and peri-urban zone with 17 towns and 200,000 inhabitants
- 2 years of development and 2 years of operating results
- 10 experimental projects

INNOVATIONS

- **The broad experimental area and the search for economic profitability** (process of industrialisation).
- **The development of new services for users** relating to energy insecurity and electric car recharging stations.

STAKEHOLDERS

- This project is above all a concrete example of a public–private partnership between industry and the municipal government.
- The project partners are: the MEL (European Metropolis of Lille), project coordinator and stakeholder; ENEDIS (formerly ERDF); GENERAL ELECTRIC (formerly Alstom Grids); EDF; DALKIA; LEM (Lille Économie Management); HEI/ISA/ISEN (Engineering schools at the Université Catholique de Lille); INTENT TECHNOLOGIES; and ADEME with project financing via the Investments for the Future Programme (PIA) call for projects.
- Each partner will manage its own projects, with the involvement of most of the partners. MEL is responsible for governance, general oversight, the implementation of projects related to renewable energy production, and reporting to ADEME.

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IMPLEMENTATION

- After the initial six-month study phase, the cost/benefit analysis, and adjustment of experiment's scope, the projects will be launched in 2017 in order to set-up the measurement campaigns in 2018 and 2019 and obtain feedback in 2020.
- One of the difficulties will be in achieving profitability, particularly given the trend towards lower electricity prices in the markets.

Cost/benefit analyses will be necessary to determine ways for the new services to generate revenue in order to ensure economic equilibrium.

Mathieu NEAU, Project Manager for the MEL's "So MEL So Connected" initiative

This is a major project for the MEL, which is positioning itself as a 'territory of excellence' in the field of energy distribution. Smart grids are well suited to an integrated municipal approach covering multiple competences, which allows us to address energy issues in territorial planning far in advance. This project should also boost the regional industrial sector in the field of Smart Grids.

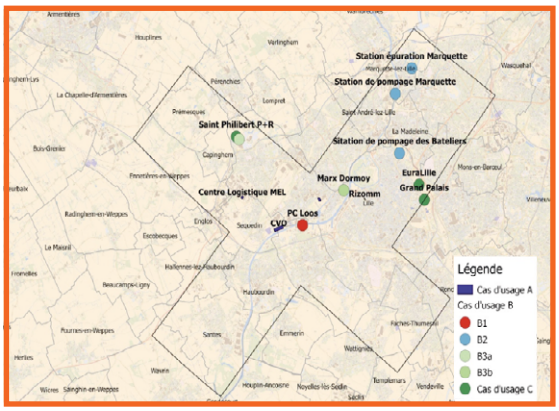
RESULTS

/// The Hauts-de-France region has some of the highest energy consumption in the county due to its industrial activity, and is also a European hub for the production and transport of electricity (the Gravelines nuclear power plant, the largest plant in Western Europe; cross-border exchanges between Belgium, the United Kingdom, Germany, etc.). The MEL's Territorial Climate Energy Plan set an ambitious objective to reduce greenhouse gas emissions by 30% and reduce energy consumption by 10%.

Thanks to Smart Grids, individual and industrial users will be able to improve their consumption by adapting their needs to the offer, particularly with renewable electricity, which will reduce the number of consumption peaks and the use of back-up fossil fuels.

It will also improve distribution quality thanks to greater flexibility and faster activation of back-up units (via remote control or even automation). Lastly, this intelligence will make it possible to:

- contribute to local management of intermittent production;
- better inject renewable energy without disturbing the power grid;
- handle demand variation and any resulting network limitations;
- have better control over energy consumption.



FINANCIAL ASPECTS OF THE PROJECT

/// A 4-year investment of 20 million euros, with 5.5 million for the MEL and 11.5 million for ENEDIS to modernise the electricity distribution network.

This project is funded by ADEME as part of the "Investments for the Future Programme for Smart Grids".

KEY DATA

- → €20m investment over 4 years, with 5.5m for the MEL and 11.5m for the power grid
- → Promotion of a network of local companies, particularly in the digital field

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