

VERTPOM®, OUR FUTURE - MODULAR POSITIVE ENERGY TERRITORY

MULTI FLUIDS - DECARBONIZED - DIGITAL

The VERTPOM® project, acronym for "*V*éritable *é*n*E*rgie du *T*erritoire *P*ositif et *M*odulaire" (Genuine Energy of the Positive and Modular Territory) was launched in June 2017 with the support of the Environment and Energy Management Agency, ADEME, within the "Investment Program of the Future" framework. This multi-fluid project develops intelligence on energy networks to optimize resources and obtain energy independence for the territory.

VERTPOM® THE REAL ENERGY NETWORK REVOLUTION

VERTPOM®  is led by a consortium to develop and deploy VERTPOM-BANK®

 decision support tool called **ENERGY BANK**, which will maintain an optimized balance between the available produced energy (conventional and renewable) uses (consumption and losses), in connection with the energy storage means. This tool will help territories to become positive energy territory "TEPOS" (*Territoire à Energie POSitive*).

The energy bank will be based on algorithms for prediction and simulation of energy production levels, consumption and losses on the various distribution systems. They will exploit a common data base. The use of artificial intelligence will be preferred.

One of the first tasks is to note the level of energy (positive or negative) of the territory. Then the energy bank will look for and simulate all possible scenarios to improve the production / consumption balance, while identifying the specific renewable energies of the territory.

TECHNOLOGICAL CONTRIBUTIONS, A NEED FOR THE TERRITORY

Energy networks need to be more responsive, flexible, and thus promote interactions between market players. The BANK OF ENERGY will contribute to these objectives listed below:

- *Collect data on networks* using sensors and remotely controllable devices (smart multi-fluids IBox, sensors)
- *Analyze in a quick time* the network status (electricity, water, gas)
- *Anticipating* local production from REN and energy storage
- *Enabling the development* of energy management services by providing information on energy consumption and allowing the management of uses

- *Optimize consumption* and intelligently interact with the end-user (consumer / actor)
- *Enable* the deployment of new services
- *Contribute* to the implementation and control of new flexibilities: storage, state-of-the-art management programs, power management (production and demand), dynamic tariffs
- *Provide* information to customers, suppliers and other market participants and ensure the safety and stability of the network

VERTPOM® combines the new advanced information and communication network technologies.

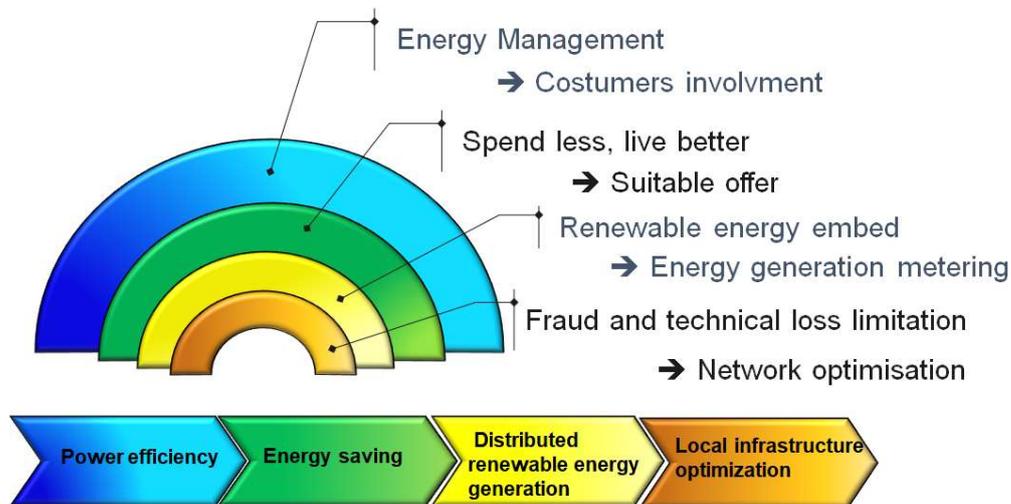
THE TERRITORY, MARKET FACILITATOR

The territory is at the crossroads of energy, climate, economic, environmental, social issues.

The increase in the volume of information will multiply the opportunities for their use, with the need to develop new technical solutions to manage them, while guaranteeing their safety (cyber security) and consumer privacy.

Tomorrow, the fundamental role and responsibilities for data management will essentially be: **to be a market facilitator, to allow network access and connection in a transparent and non-discriminatory way, to ensure the security of the provision and quality of service.**

The steps and approach of the VERTPOM® project are summarized in the following diagram:



THE TERRITORY: SHOWCASE FOR EXPORT

VERTPOM® is a **GLOBAL** offer made up of techno-economic components: energy control, social monitoring tool, scalable storage system, public infrastructure energy performance... adapted to the market of **French** and **international** distribution network managers. **Europe** and **MENA countries** are specially focused.

GAZELEC, JULES VERNE UNIVERSITY OF PICARDIE, the towns of **PERONNE** and **SAINT QUENTIN** in “Hauts de France” region will be the showcase of French export.

THE VERTPOM® CONSORTIUM :

Within a consortium, **VERTPOM®** is led by **CIAC INTERNATIONAL TECHNOLOGIES**, **JEI** (“*Jeune Entreprise Innovante*” - Young Innovative Company) specialized in energy and communication technologies, developer of the **GO-IDems®** concept, the Smart Grid multi-fluid turnkey solution.

The partners:

- **GAZELEC DE PÉRONNE** Manager of the Multi-Fluid distribution network (electricity, gas and water)
- **JULES VERNE UNIVERSITY OF PICARDIE area**
- **The towns of PERONNE and SAINT QUENTIN** in “*Hauts de France*” region

GAZELEC de PERONNE distributes and manages on its territory, its users and customers including 1,400 public lighting points, from:

- a connection to the gas network (64 bar),
- two 63 kV proprietary stations, (1 for distribution and 1 for injection of REN)
- a dispatchable power production gas plant of 4.5 MW,
- 150kWp photovoltaic in its own name
- 250 kWp photovoltaic on the city
- 20.5 MW Wind station.

The JULES VERNE UNIVERSITY OF PICARDIE hires five specialized laboratories:

- Innovative technologies lab. (*Laboratoire des Technologies Innovantes - LTI, EA 3899*)
- Amiens Laboratory of Fundamental and Applied Mathematics (*Laboratoire Amiénois de Mathématiques Fondamentales et Appliquées - LAMFA, UMR 7352 CNRS*)
- Modeling, Information & Systems (*Modélisation, Information & Systèmes - MIS, EA 4290*),
- University Center for Research on Public Action and Politics (*Centre Universitaire de Recherches sur l'Action Publique et le Politique - CURAPP, UMR 7319 CNRS*)
- Center for Research in Psychology, Cognition, Psychism and Organizations (*Centre de Recherches en Psychologie, Cognition, Psychisme et Organisations - CRPCPO, EA 7273*)

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