Sustainable Districts & Built Environment
Positive Energy Blocks

POSITIVE ENERGY BLOCKS IN THE FRENCH OVERSEAS TERRITORIES

TWO CANDIDATE CITIES FOR THE POSITIVE ENERGY BLOCK INITIATIVE: LE PRÊCHEUR (MARTINIQUE) AND MARIE-GALANTE (GUADELOUPE)

Smart Cities & Communities – Positive Energy Blocks
Eindhoven, May 24th 2016

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CANDIDATES PARTNERS

Syndicat Mixte d'Electricité de la Martinique

City of Le Prêcheur

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MARIE-GALANTE

1ère Communauté de Communes d'Outre-Mer

L'énergie au cœur des territoires

ENERGY CHALLENGES AND OPPORTUNITIES IN THE FRENCH OVERSEAS TERRITORIES

NON-INTERCONNECTED POWER SYSTEMS HIGHLY DEPENDEND ON FOSSIL FUELS WITH HIGH CO2 EMISSIONS

HIGH ELECTRICITY GENERATION COST

THE NEW FRENCH LAW (AUG, 2015) ON ENERGY TRANSITION FOR THE GREEN GROWTH WITH VERY AMBITIOUS TARGETS FOR THE FRENCH OVERSEAS TERRITORIES: 50% OF ENERGY CONSUMED GENERATED FROM RENEWABLE ENERGY SOURCES BY 2020 AND 100% BY 2030

CURRENT REGULATORY THRESHOLD FOR INTERMITTENT RES IN THE FRENCH OVERSEAS TERRITORIES ENERGY MIX IS 30 % FOR POWER SYSTEM SAFETY

OPPORTUNITIES FOR MORE RES (INCLUDING INTERMITTENT) IN THE ENERGY MIX THANKS TO DECREASE IN THE COST OF RES AND NEW DEVELOPMENTS OF SMART GRID TECHNOLOGIES

INTEREST (BOTH AT POLITICAL AND COMMUNITY LEVELS) FOR ENERGY EFFICIENCY, SMART BUILDINGS AND SELF-CONSUMPTION OF DECENTRALIZED AND CO2-FREE ELECTRICITY GENERATION

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CNR, TECHNICAL PARTNER OF LE PRÊCHEUR AND MARIE-GALANTE POSITIVE ENERGY BLOCKS PROJECTS

COMPANY PROFILE

1st exclusively renewable energy producer in France

Hydropower, wind and solar PV power,
certified by the independent organization TÜV SÜD.

2nd electricity producer in France

Key player of electricity market opening in France,
active on long-term and intra-day markets

Renewable energy management expert

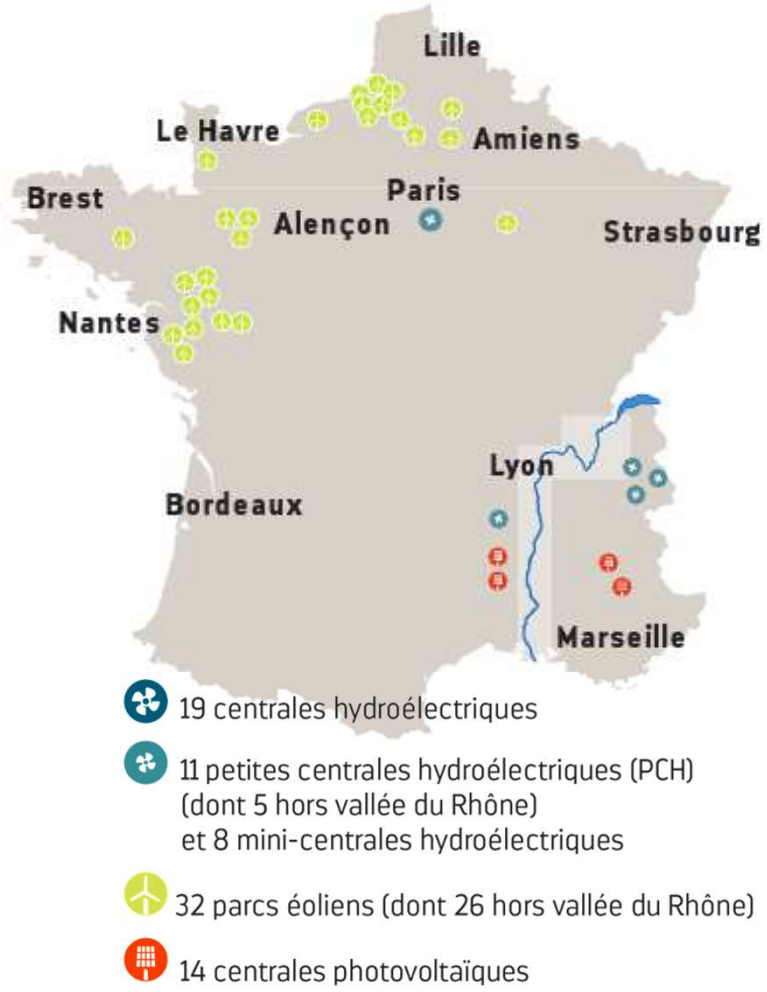
In-house management of sources intermittency,
balance responsible entity for ENGIE group in France

Developer of territories

Program of general interest missions in favor of territories
Commitment to promoting renewable electricity and electric mobility for sustainable transport

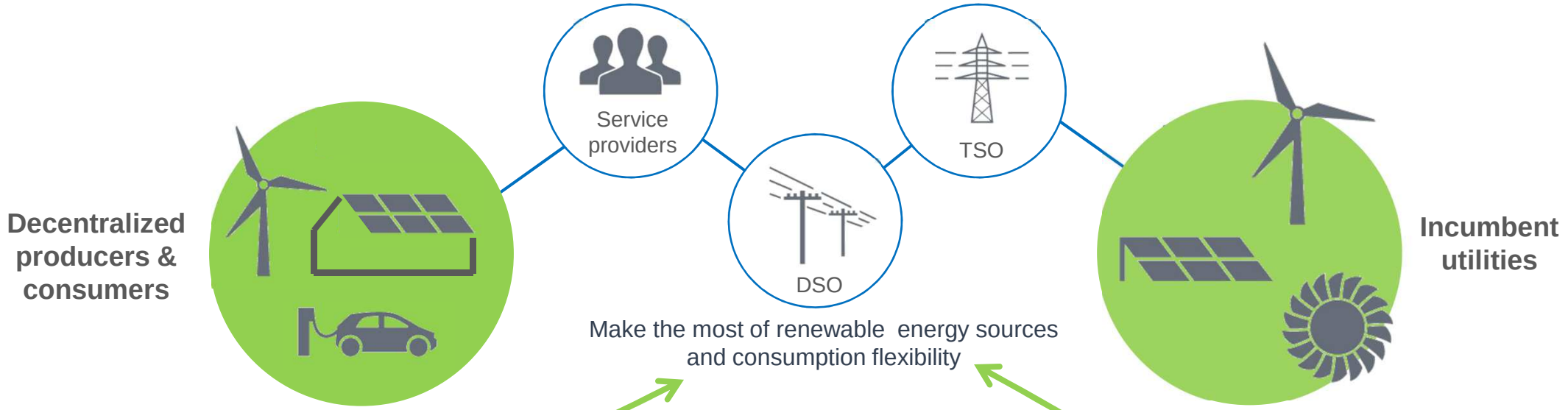
Laboratory for the energies of the future

Partnerships with universities, R&D centers, start-ups for pre-industrial programs using cleantechs in the energy sector, smart grids, energy storage, electric & hydrogen mobility, demand-side management

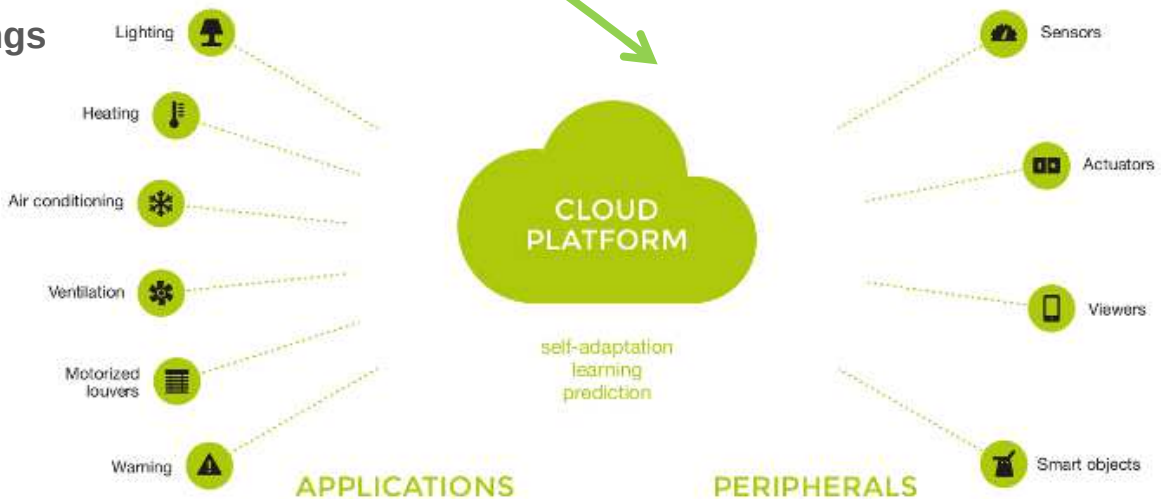


2015 key figures : average production 15 TWh/y, capacity 3.453 MW (wind 371 MW + solar 42 MWc + hydro), turnover: 1 097 M€

ENHANCING PRODUCER-CONSUMER RELATIONSHIP



Smart buildings

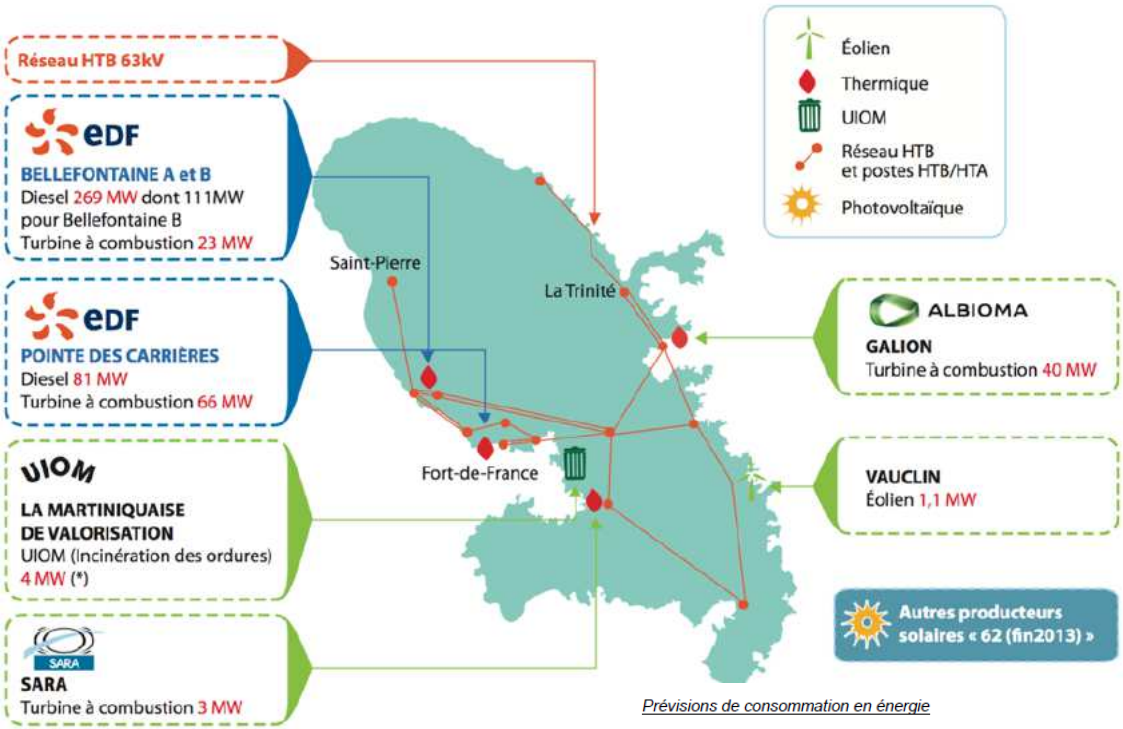


CNR's focus for smart cities:

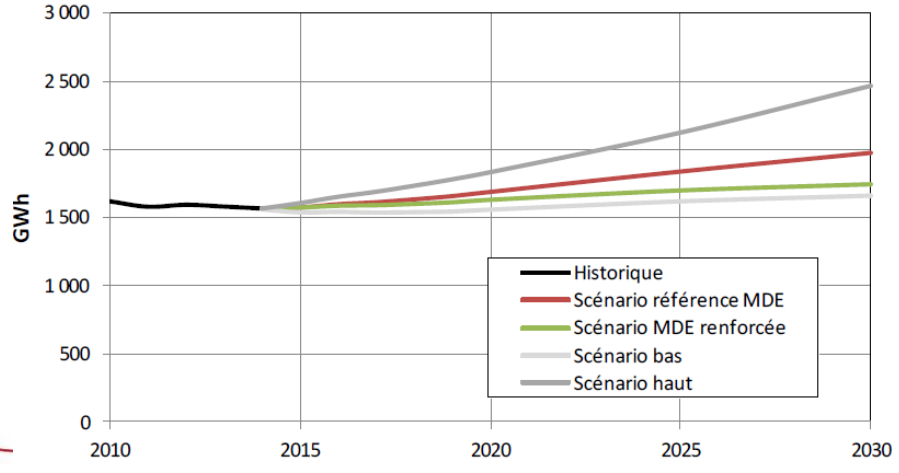
- Strong EV-user demand for renewable supply
- Flexibility of charge of EV fleets
- Distributed load shaving for residential
- Self-generation & consumption
- Distributed generation sources aggregation and market access

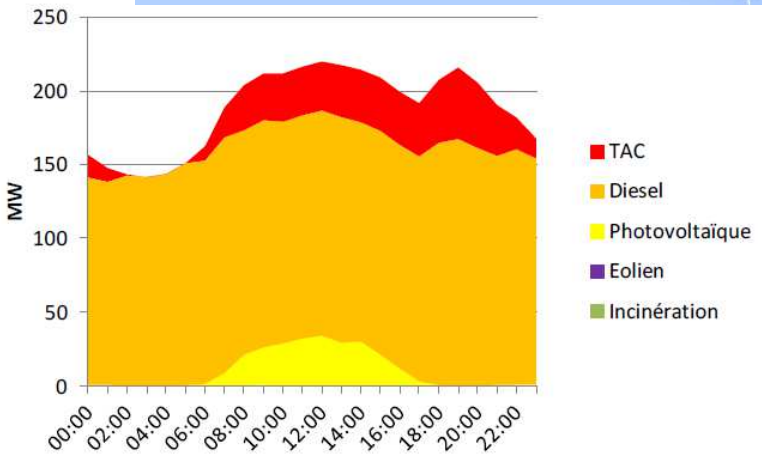
LA MARTINIQUE ISLAND (FRENCH OVERSEAS TERRITORIES)

POWER SYSTEM AND ENERGY MIX



Prévisions de consommation en énergie





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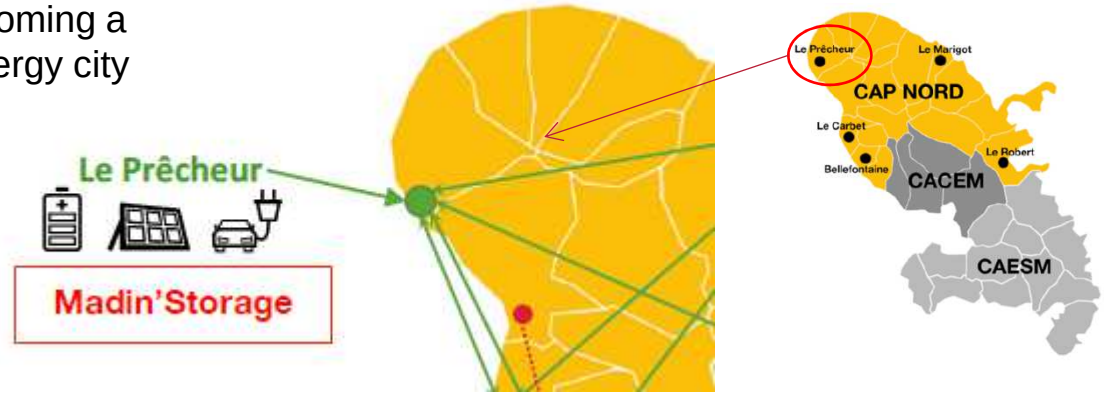
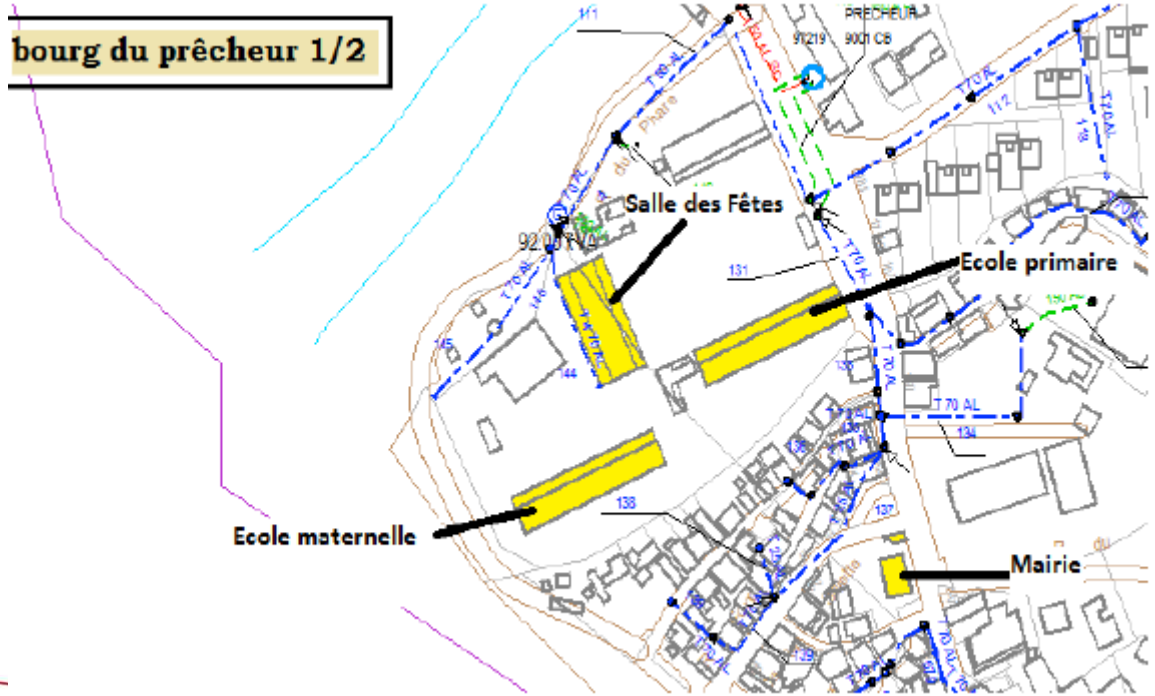
LA MARTINIQUE ISLAND

CITY OF LE PRÊCHEUR

Vision: becoming a positive energy city



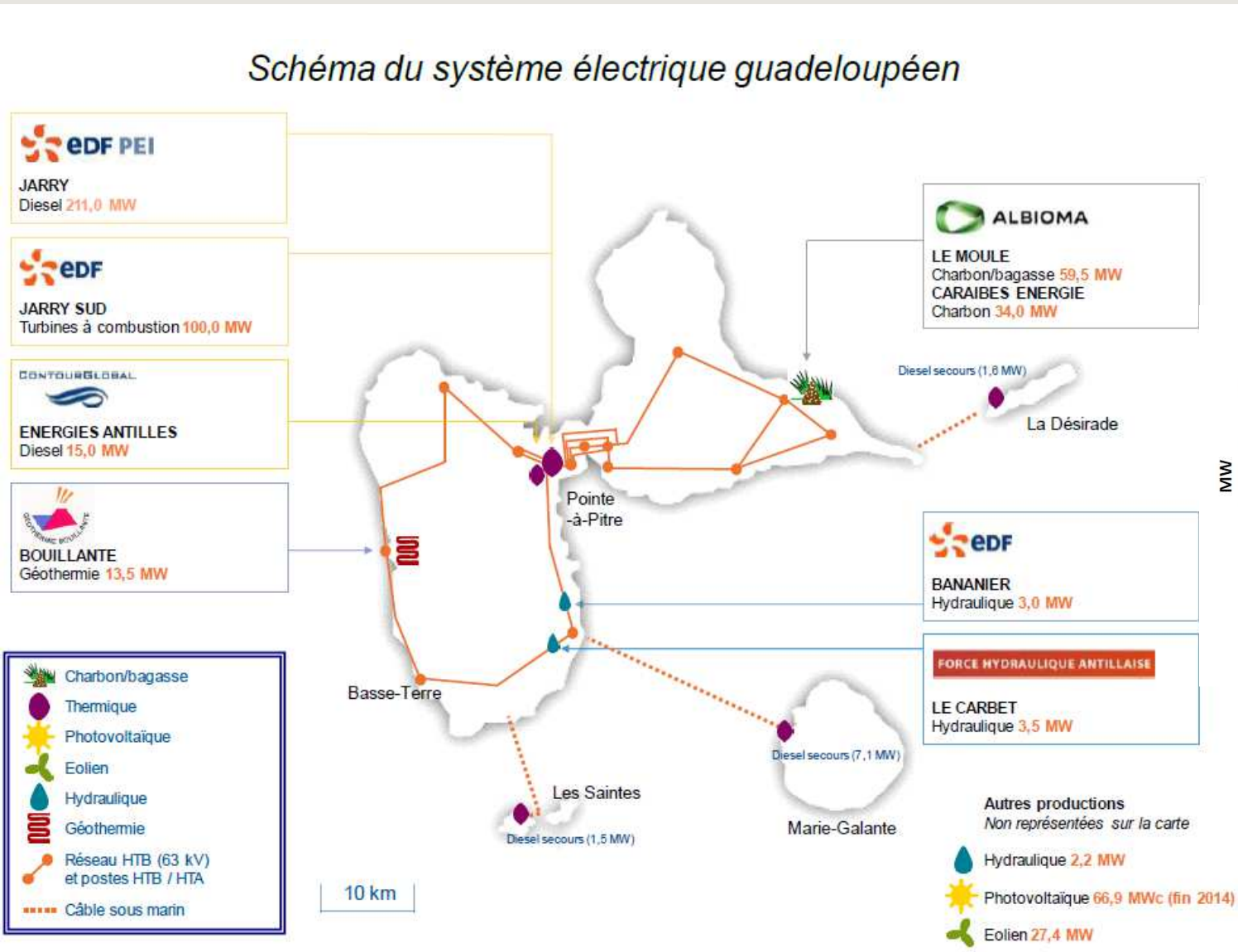


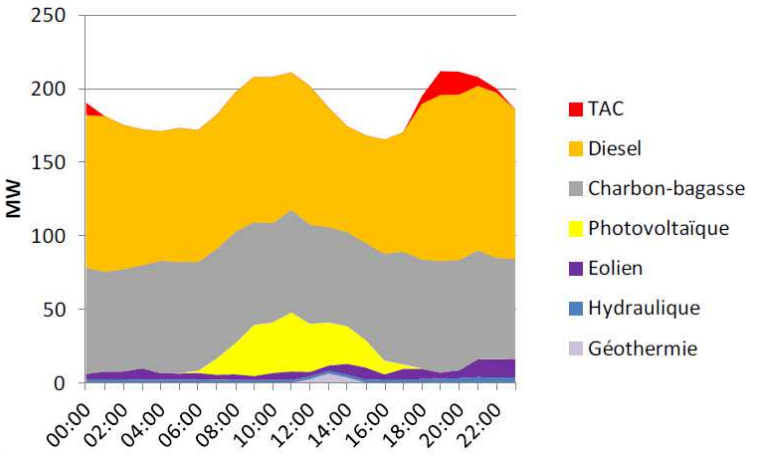
Le Prêcheur Positive Energy Block project

- 2 existing rooftop solar PV (nursery school and elementary school)
- Installation of a new rooftop solar PV with storage on a retirement home for elderly
- Installation of a new rooftop solar PV with storage on a technical services building of the city
- Installation of electric vehicle charging stations equipped with solar PV panels
- Development and installation of a supervision tool for smart energy management of the energy block comprising the 4 buildings equipped with solar PV, the electric vehicle charging stations and the City hall building and including a shared storage of electricity

GUADELOUPE ISLAND (FRENCH OVERSEAS TERRITORIES)

POWER SYSTEM AND ENERGY MIX





MARIE-GALANTE ISLAND (GUADELOUPE)

CITY OF GRAND-BOURG

Grand-Bourg Positive Energy Block project

- Grand-Bourg, main city of Marie-Galante and the gateway to its coastline
- Marie-Galante's ambition in the energy field: becoming a positive energy island by 2020 with exclusively renewable energy sources and a showcase technologies for [small] smart cities of non-interconnected islands in the Region
- Smart buildings and energy efficiency are key components for Community participation in the project
- Grand-Bourg Positive energy block is a pilot project for the future "Marie-Galante Smart energy generation and consumption management system" towards a full energy autonomy
- Technical content: IT, decentralized energy generation and storage systems on a selected number of buildings (marina, city hall, school), electric mobility charging stations.