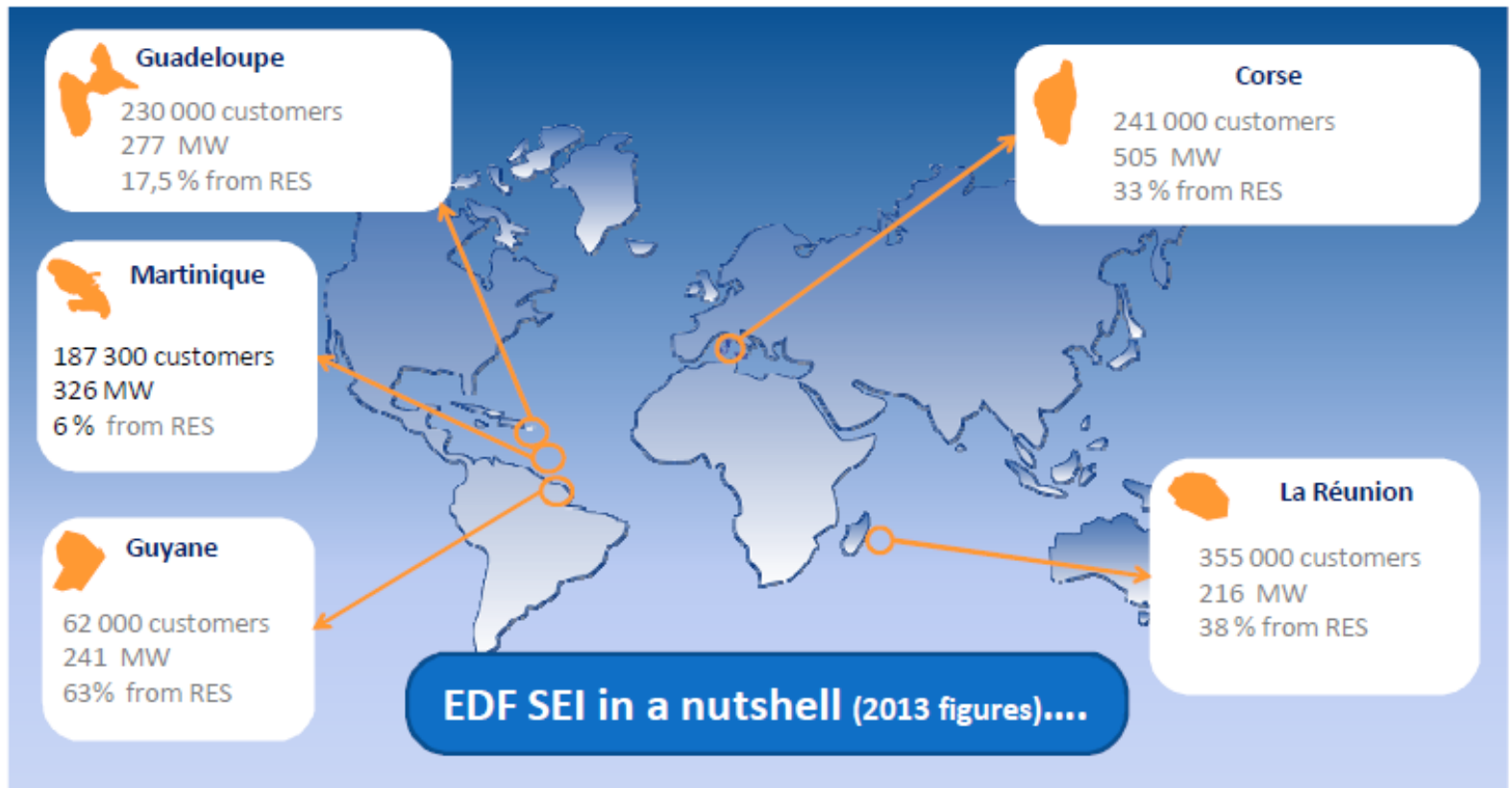




# Storage at EDF IES Division : some perspective and on going experimentations

**Joseph MAIRE**

EDF Insular Energy System Division



More than  
**1 million** customers  
3,100 employees

9,6 TWh delivered

2000 MW EDF  
generation capacity  
29% Renewable sources

Promotion of **Demand side Management**

Stepping-up **Fossil-fired capacity** to guarantee the energy balance of its networks and modernize the plants

Developing **Renewable Energy Sources** to limit the dependence on fossil fuel and protect its local fragile environment



# What is at stake for storage?



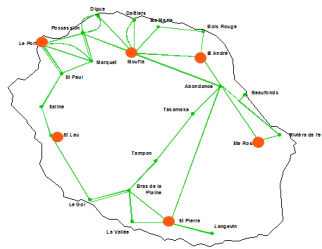
- Avoid investments to deliver peak production and fuel cost
- Reach a better optimisation of primary and secondary reserve
- Stabilize the system and enhance quality of electricity
- Insert a higher rate of intermittent RES in the system
- Avoid network reinforcement
- Bring autonomy locally

Islands are favorable places for storage development :

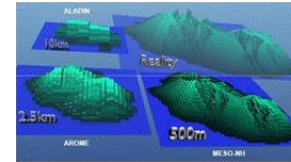
- Higher production cost (capex and opex)
- Will to increase the share of competitive RES
- Fragility of the electrical system
- frequent climatic events and energy back needs
- Isolated places without possible grid connexion

**Storage use may reach economic feasibility in islands first.**

# PEGASE Result Highlights



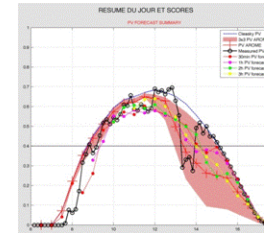
Realtime network of weather sensors



High resolution weather forecast



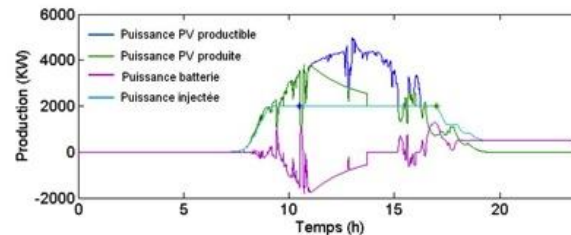
**Predict, plan and ensure production intermittent Renewable Energy**



Production forecast → Prediction



NA S Battery Energy Storage → Ensure production



Optimization programs → planning

**Interest for a centralized approach on control to reduce the size of the storage**

PROJECT Made by



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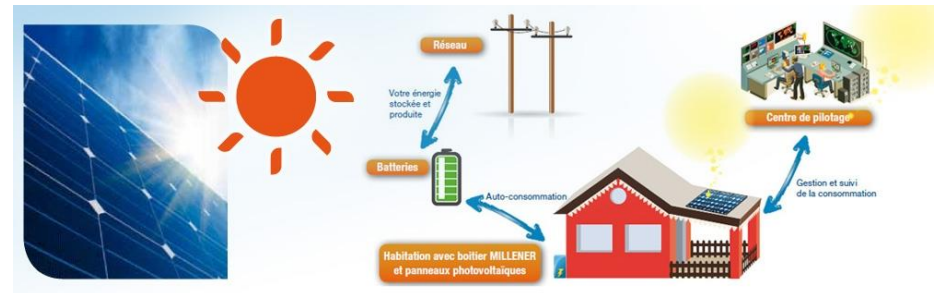


# Millener : PV systems and storage

Millener PV prosumers are equipped with 4 kWh Li ion storage and smart control system enabling :

- The self consumption of the local production of energy ;
- To feed in only the loads considered as priority in case of network failure
- to test function helping the RES integration into the electrical system:
  - Frequency regulation ;
  - Smooth the Intermittency of the solar production ;
  - Injection of stored energy during the day into the system at peak time

➤ MILLENER experimentation is providing a lot of information including the necessary steps needed before seeing commercially available solutions on the market .



PROJECT Made by

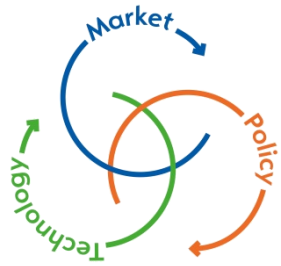


Day 2 – Market

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Paris | 19th to 21st November 2014



Thank you for your attention