

Urban planning and Energy Agency of Corsica



EMA Network
Clean Energy for All Europeans : Specific Regional Initiatives

21st November 2017

Corsica



Area: *8 680 km²*

Population

2013 estimate: 320 000 inhabitants

+1.1% over ten years

Density: 36/km²

Geography

Coastline: 1 000 km

120 mountains over 2 000 m

Regional Natural Parc covers more than 50% of the land.

Economy: *tourism a main focus*

Residential buildings : *36% secondary residences*

Corsica's Primary Energy Balance

2016 Imports

87% (590ktoe – Fossil fuels)

2016 Local production

13% (84ktoe – Renewable energy)

Système énergétique de la Corse 2016

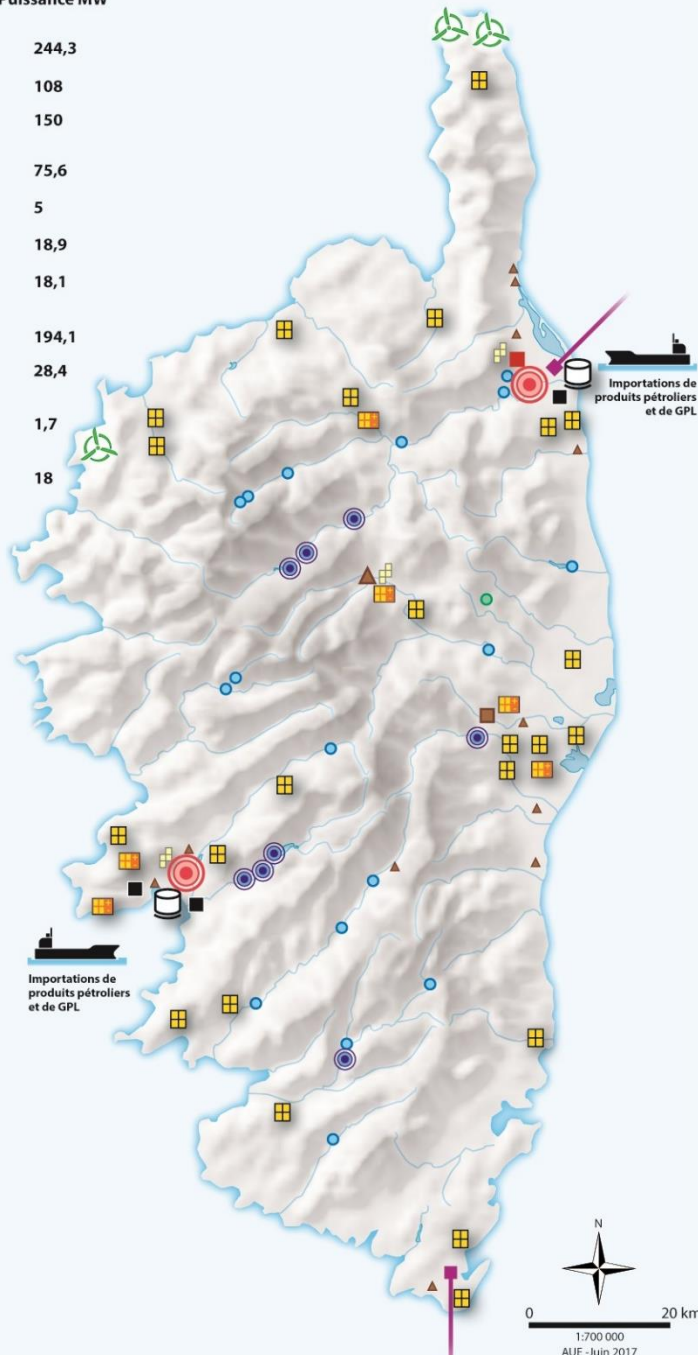
Types d'installations

Puissance MW

	Centrales thermiques	244,3
	TAC	108
	Interconnexions	150
	Champs PV sans stockage	75,6
	Ombrières PV	5
	PV en toiture (<i>non représenté</i>)	18,9
	Champs PV avec stockage	18,1
	Grande hydraulique	194,1
	Petite hydraulique	28,4
	Biogaz	1,7
	Parcs éoliens	18

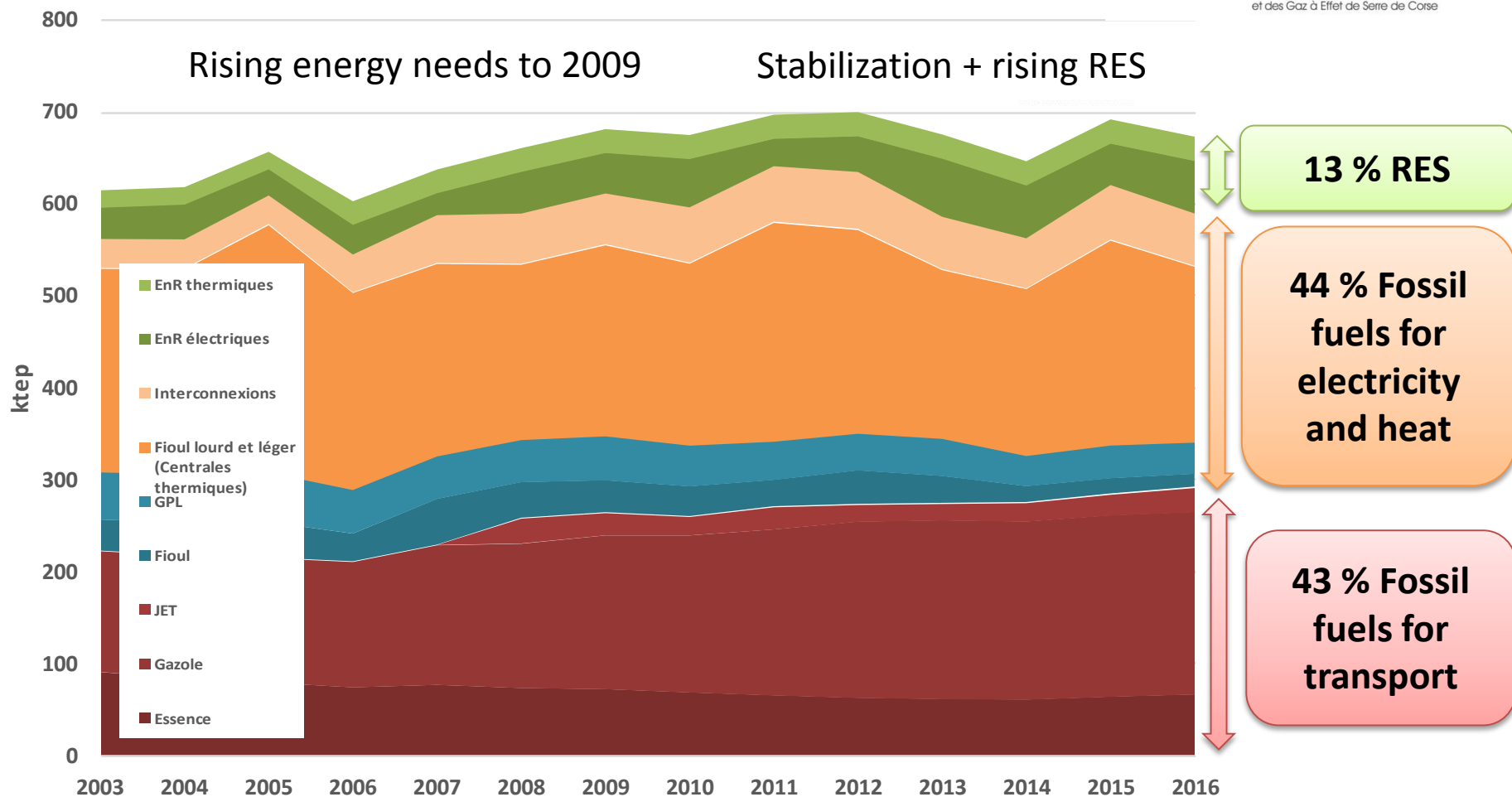
Puissance totale EnR : 359,8 MW

	Chaudières bois
	Production de plaquettes
	Dépôts pétroliers
	Dépôts GPL



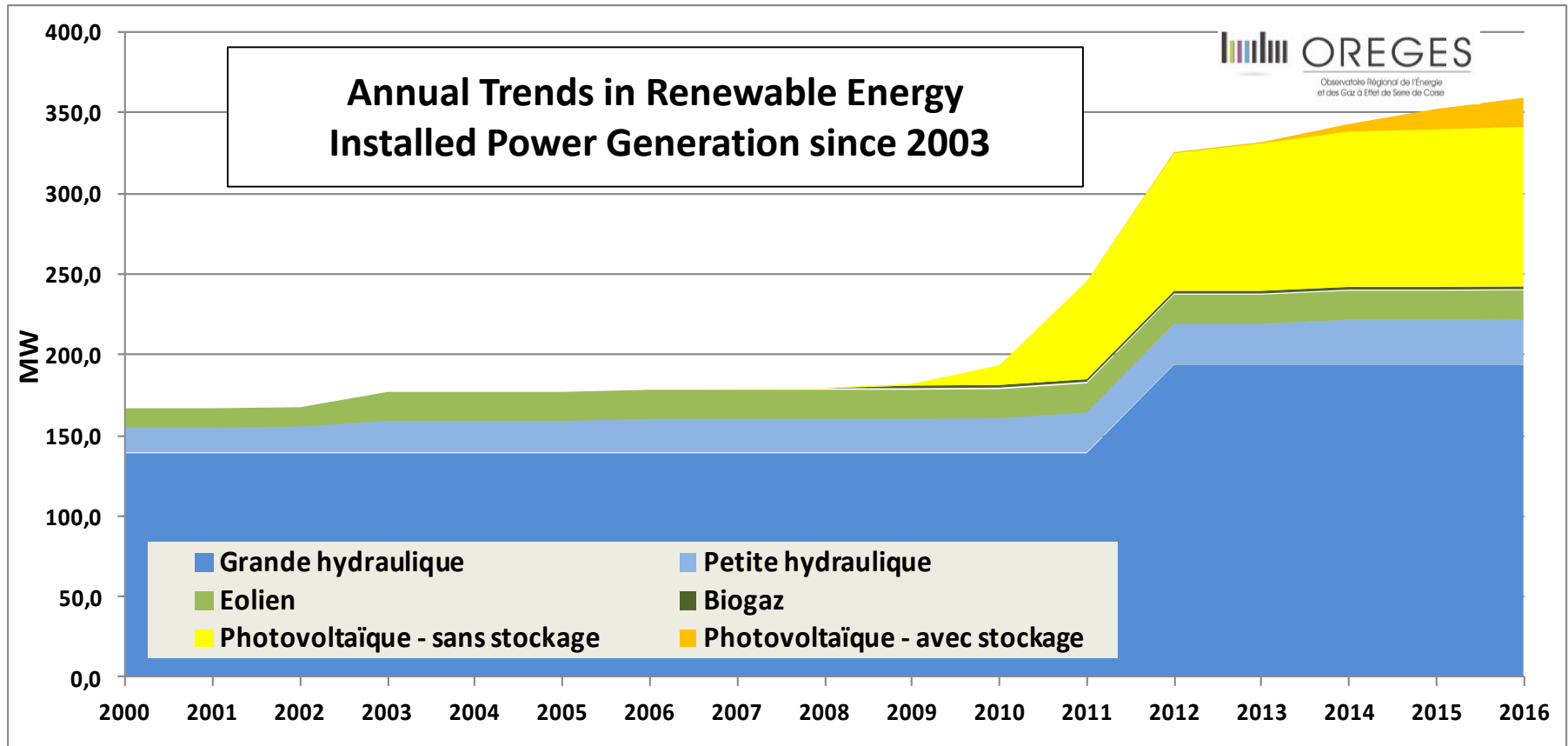
Corsica - Primary Energy Trends

2003-2016



Electric Power Mix

2016



Solar Power : 1st - 359 Wc/inhabitant
Hydro Power : 3rd - 665 W/inhabitant

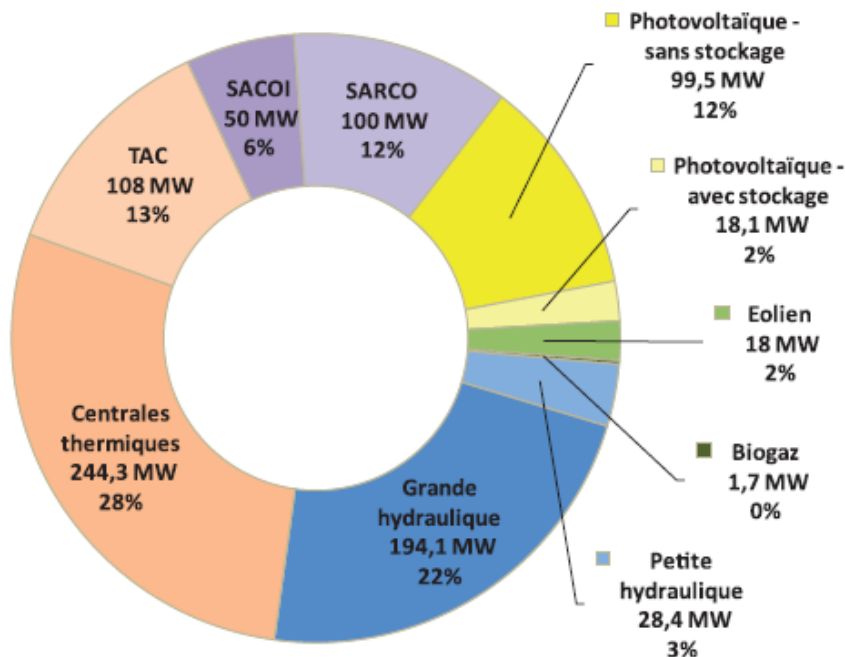
Electric Power Mix

2016

Installed Capacity (862 MW)

Puissance raccordée au réseau 2016 : 862 MW
Puissance électrique garantie 2016 : 696 MW
Puissance électrique renouvelable intermittente : 117,5 MW

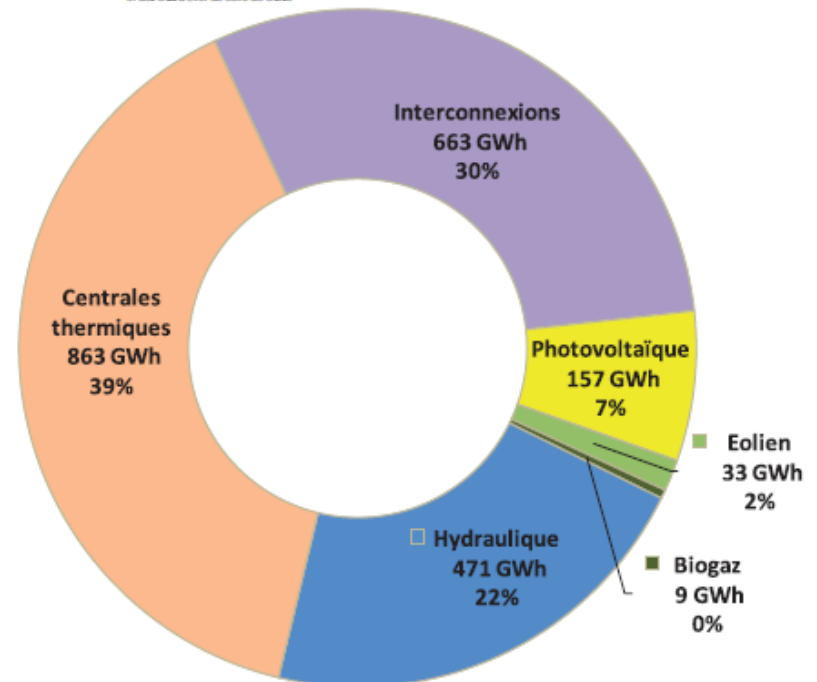
 **OREGES**
Observatoire Régional de l'Énergie
et des Gaz à l'Île de la Seine de Corse



Production (2196 GWh)

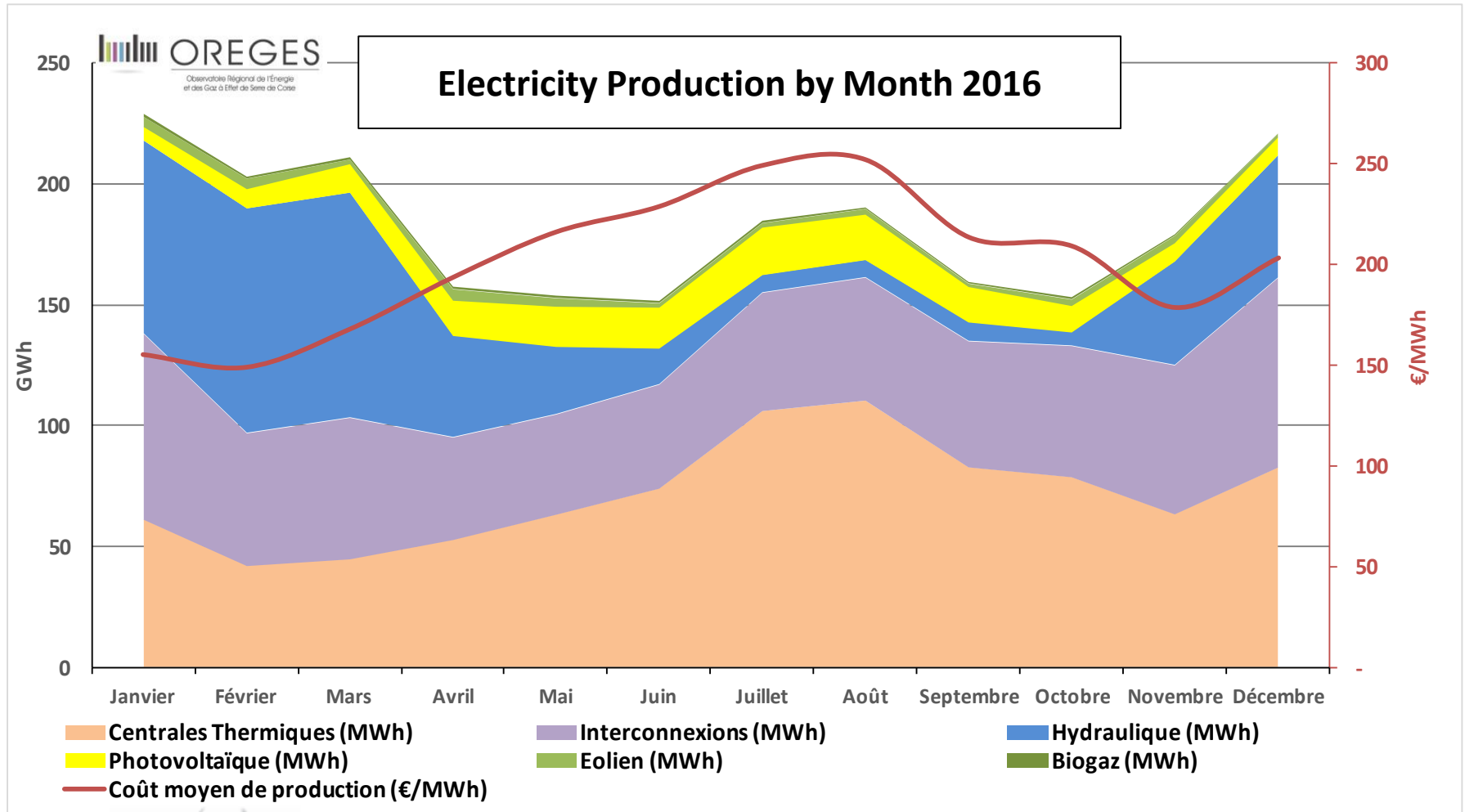
Production électrique nette 2016 : 2196 GWh
Part des énergies renouvelables : 30,5 %

 **OREGES**
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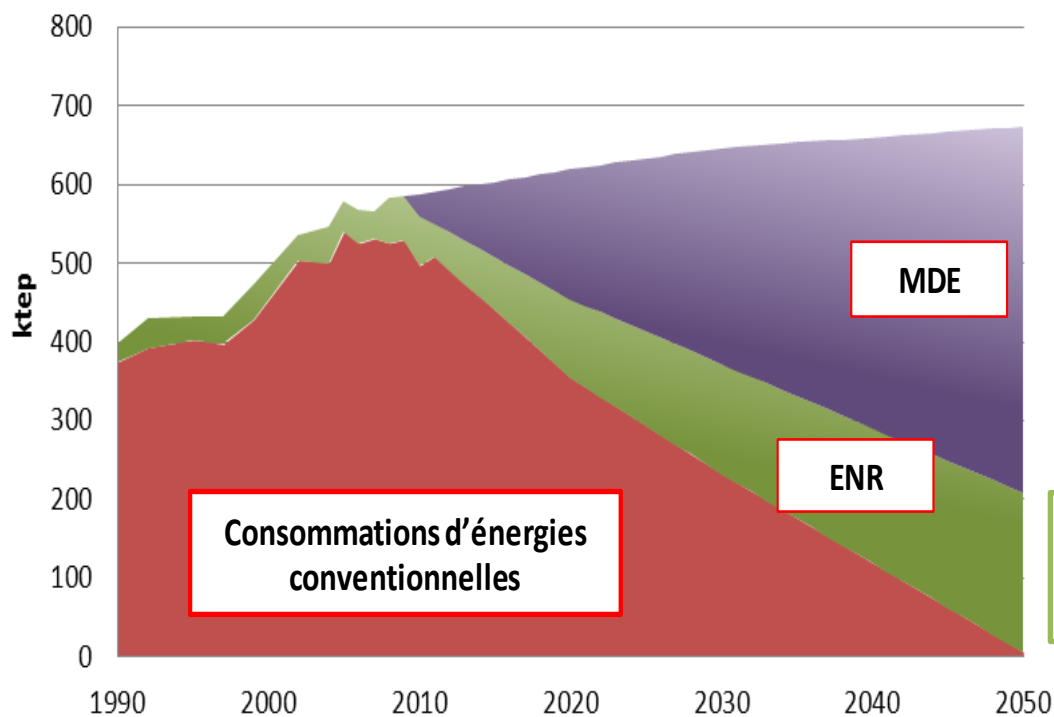
Electric Power Mix

2016



Regional Energy Strategy

- 2013 : Regional Energy, Air and Climate Plan (SRCAE)



2050
Energy Autonomy

Demand limitation
2/3 Energy consumption reduction

EnR
1/3 Renewable energy production

Greenhouse Gas Emissions
GHG reduced by a factor of 6

Regional Energy Strategy

- ***2015: PPE Energy Investments Program***

The PPE programs investments up to 2023 aiming to:

- ✓ *Secure fossil fuel supply for transport and reduce energy consumption*
- ✓ *Secure electricity supply*
- ✓ *Increase energy efficiency and reduce energy consumption*
- ✓ *Expand non intermittent renewable energy systems*
- ✓ *Expand intermittent renewable energy systems, storage systems, smart grids, etc.*

- ***A specific document in each Island (ZNI)***

- ✓ *Specific for each ZNI*
- ✓ *Elaborated by each ZNI*
- ✓ *Prime Minister Decree on 18 december 2015*
- ✓ *Corsica 1st PPE in France*

3,1 Billions €

- **The PPE is coherent with SRCAE & Energy autonomy goal**

Regional SEAP - 2023

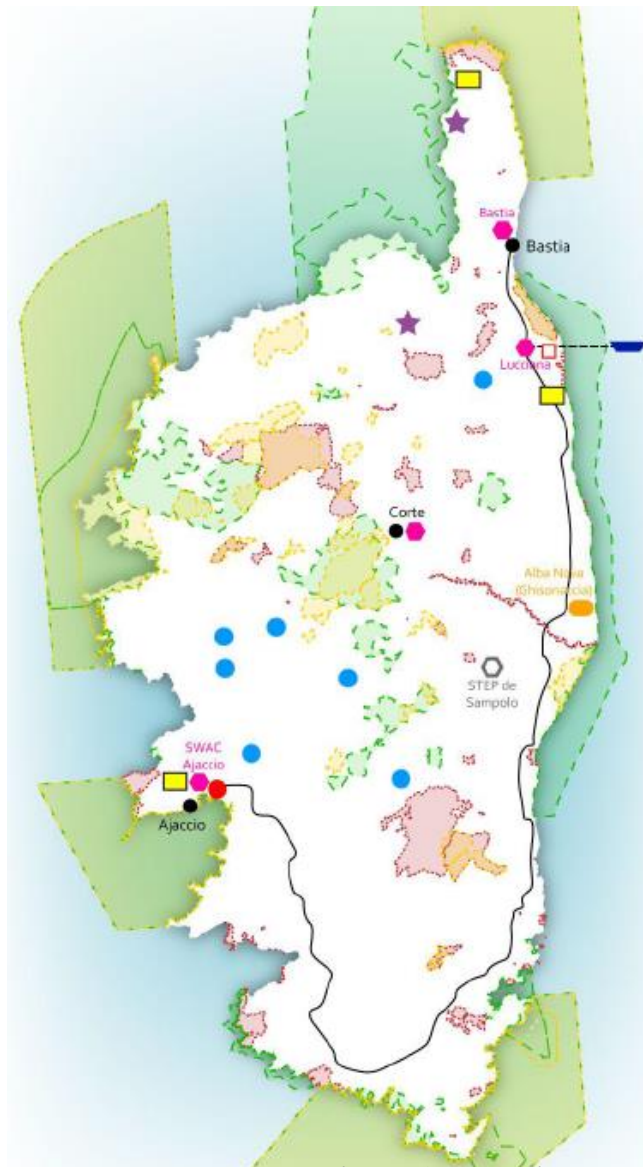
PPE – Energy infrastructures investments

- ❑ New power plant with modern production technology and lower air pollution levels



*Architect's view (VGA office)
Source: PIG Corse-du-Sud*

- ❑ Natural Gas Supply



Regional SEAPs - 2023

PPE – Renewable energy investments

		Targets 2016-2018	Targets 2019-2023	Total
Non intermittent EnR	Small hydro power	+ 7 MW	+ 5 MW	+ 12 MW
	Biomass	+ 3 MW	+ 4 MW	+ 7 MW
	Thermodyna energy systems	+ 5 MW	+ 7 MW	+ 12 MW
	Solar & Wind energy with storage systems	+17 MW	+ 13MW	+ 30 MW
Intermittent EnR	Solar energy without storage systems	+ 11MW	+ 9MW	+ 20 MW
	Wind turbine storage	+10 MW	+ 12 MW	+ 12 MW
				+ 93 MW

+148% RES power generation (non intermittent)

+ 38% RES power generation (intermittent)

- Rise in deconnection level from 30% to 35% by 2018 & 45% by 2023
- Comparative studies of multi-purpose hydropower plants
- Pumped Power Plant Storage studies

Regional SEAPs - 2023

PPE – MDE: Energy efficiency investments

+200 % Energy Efficiency

☐ Household Energy Renovation Plan

- ORELI Program (Individual residential buildings)
- Regional Plan to combat energy poverty
- Local energy renovation platforms



Residential buildings 2023 (-180 GWh)

BBC Standard renovations : 400 /year by 2019 up to 3000/ year by 2023

Partial renovations (individual initiatives) : 4000 /an

Tertiary buildings 2023 (-110 GWh)

Renovated area: 30 000m²/ year by 2016 → 130 000m²/ year by 2023

Including massive thermal RES systems

Targets

2016-2018

Target

2019-2023

Total

	Targets 2016-2018	Target 2019-2023	Total
Solar thermal	+ 7 GWh	+ 13 GWh	+ 20 GWh
Aerothermal	+ 25 GWh	+ 35 GWh	+ 60 GWh
Fuel wood	+32GWh	+18 GWh	+ 50 GWh

☐ Regional Public Lighting Renovation Plan

Regional SEAP - 2023

PPE – Transport investments

☐ Energy efficiency

→ Global Action:

Promoting alternative mobility solutions to the car increasing support to corporate and urban transport plans, communication, information and training.

→ Targeted Action:

Car-pooling, public transport, bike, urban planning and development, etc

→ Enhanced Engine efficiency

☐ Electric Mobility

→ Non Interconnected Islands specific national call for proposals

→ ***700 charging points from EnR systems + feasibility study***

→ ***7 hydrogen charging stations***

Model initiatives

BBC standard renovation



Background

- ✓ 48 social housing units (2 buildings from the 70')
- ✓ 3000 m²
- ✓ High precarity among tenants

Objectives :

- ✓ Reduce energy consumption by 4
- ✓ Reduce energy bills
- ✓ Exterior Insulation & Solar thermal systems

COST

1 684 773 €

FEDER

1 087 179 €

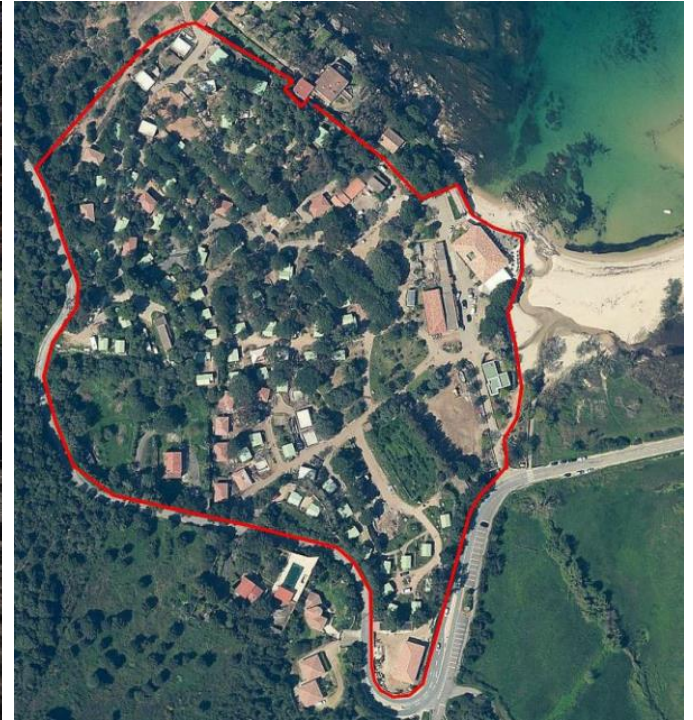
Others

259 839 €



Model initiatives

Marine Energy



Background

- ✓ 100 holiday houses
- ✓ Successful previous program
- ✓ A structure seeking eco-label approval

Objectives :

- ✓ Improved service offering through development of sustainable tourism
- ✓ Innovation
- ✓ Building broad awareness of energy transition

Model initiatives

- ✓ Marine power station with **320 kW capacity**
- ✓ Machine room
- ✓ IT system
- ✓ 4 heating, air-conditioning and ECS network
- ✓ 2 multi-channel probe exchangers with length of 2.20m

COST 242 000 €

FEDER 72 685 €

ADEME 79 040 €

Electricity consumption reduced by 275,6 MWh/year

Local emissions reduced by 211 tonnes CO2 eq

L'HYDROMARETHERMIE



Réseaux de distribution de chauffage, climatisation et ECS

Local technique
hydromaréthermique

Système
thermodynamique

Ballons de stockage
et de découplage



Collecteurs de
distribution multivoies



L'énergie thermique collectée et reconcentrée est transférée aux échangeurs multivoies du local technique par le fluide caloporteur constitué d'eau douce en circuit fermé



L'énergie thermique marine est collectée via des échangeurs sondes multivoies immergées ou sous sable

Thank you