Isle of Pines
A smartgrid lab

PECC - Nouméa, November 2014
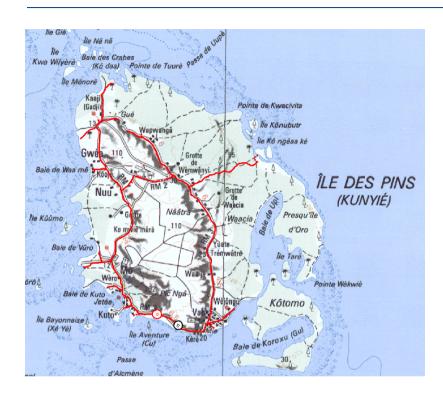
Isle of Pines, a nature jewel

2 000 inhabitants
152 km²

Utility : ENERCAL
650 customers
120 km network
One diesel power plant
4.5 GWh produced per annum

Tourism industry : a high impact

3 major hotels
Several lodges

Requiring **52 %**
of the electricity produced
on the island

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At the moment, a fully Diesel fuel dependant island

5 Power Generators

Peak power : 1 000 kW in summer around diner time

1 300 m^3 of Gas Oil imported yearly from the main land for electricity production

3400 CO_2 tons released

A high cost power supply : 60 xpf / kWh
Power depending on sea transport:
never more than 30 day fuel stock available

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Reducing DF dependence : a medium term issue

ENERCAL operated
A 3 x 60 kW wind farm
From 1999 until 2009
experiencing hybrid production
and wind farm operation.

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ENERCAL's projects for Isle of Pines : STEP ONE

- Encouraging energy savings (hotels, municipal buildings, domestic customers) increasing sustainable development awareness

- Creating a 350 kWp solar farm :
  - Land permit granted
  - On going tender
  - Construction begining 2nd term 2015

  - Production starting end of 2015

Expected production : 408 GWh; 10% of island consumption
Max immediate value of solar penetration = 60%

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ENERCAL's projects for Isle of Pines : STEP TWO

Further energy saving actions :
reducing water wasting, low energy bulbs, solar water heaters

Adding more pannels to the solar farm and implementing
battery storage since peak demand is after dusk

Target : 30 % of island consumption and up to
50% in the long term.

Isle of Pines : a possible widespread solution

- A smart project of fuel saving, shared with local authotities.
- An approach based on the forecasts consumption, DSM and renewable integration.
- A solution based on a combination of Diesel Power Generators, Solar production and battery storage is a realistic option for remote islands.
- ENERCAL will shortly gain technical experience on network high solar penetration

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