Cas concrets de repowering en France

Conférence de l’OFAEnR sur l’exploitation des parcs éoliens

Quadran
Énergies Libres

Mars 2016
A few words about Quadrans

Quadrans was born from the merging of JMB Énergie and Aérowatt in 2013. The new group is one of the Top 5 independent French figures in free energy.

The Group is now operating 380 MW of complementary renewable sources.

200 employees are working to develop the company on the whole lifecycle of power farms: from site identification to dismantling and... repowering.
As pioneer in French renewable sector and in particular windpower, Quadran Group is operating some of the oldest French wind farms:

- La Désirade - Souffleur: operating since 1992, refurbished in 1996, repowered in 2010
- Marie Galante - Petite Place: operating since 1997, repowered in 2015 with storage
- Goulien: operating since 2000, repowering to come in 2016/2017
- Marie Galante & Désirade: operating since 2000
- Côte l’épinette: Operating since 2001

⇒ 6 wind farms aged 15 years or more
La Désirade and Plan du Pal: ‘best’ examples

La Désirade

Initially 20 turbines for 150 kW... refurbished to 16 turbines for 540 kW
Average annual output: 1300 MWh/y
Operated locally and ‘manually’ (no scada)
La Désirade and Plan du Pal: ‘best’ examples

La Désirade

Planning the repowering: 5 years...
2005: studies & new building permit solicited
2006: refused! «The land is not dedicated to wind energy» (oups!)
2007: contested
2008: Building Permit granted
2009: grid connection / financing
2010: construction / commissionning
La Désirade
Key figures
Number of turbines: from 16 to 6 / 2,6
Power: from 0,5 to 1,7 MW x 3
Output: from 1,3 to 6,6 GWh/y x 5

Cost: similar to a new project

Interest? Less turbines
   Increased Output
   Lower risk
Repowering in France: best examples
La Désirade and Plan du Pal : ‘best’ examples

Plan du Pal

Initially a site test for turbines development... in 2000 became a wind farm of 7 x 200 kW
Average annual output : 3300 MWh/y
Operated locally, pre-serie of a cyclone proof turbine
La Désirade and Plan du Pal: ‘best’ examples

Plan du Pal

Planning the repowering: 3 years!
2007: studies & new building permit solicited
2008: granted, no recourse
2009: grid connection / financing
    construction / commissionning
Plan du Pal

Key figures

Number of turbines: from 7 to 5 / 1,4
Power: from 1,4 to 11,8 MW x 8,4
Output: from 3,5 to 34,2 GWh/y x 10

Cost: similar to a new project

Interest? Increased Output
Up to date technology
Lower risk
Repowering in France: best examples
Legal framework needs to be improved

Lastours and Goulien: repowering ‘a minima’

- Same layout
- Same size
=> Almost same Power and Output

Due to:
- Distance to buildings / sea
- Radars & Army
- What next?
Repowering remains a win/win operation

**For the operator**
- Increased output
- Less risk (recourse, wind)

**Globally :**
- Increased output !
- Local economy (O&M, land leases, tax)
- Up to date technology (for the grid)
- Lower price (more than 2400 heq)