

## WIND POWER DEVELOPMENT IN FRANCE IN 2004

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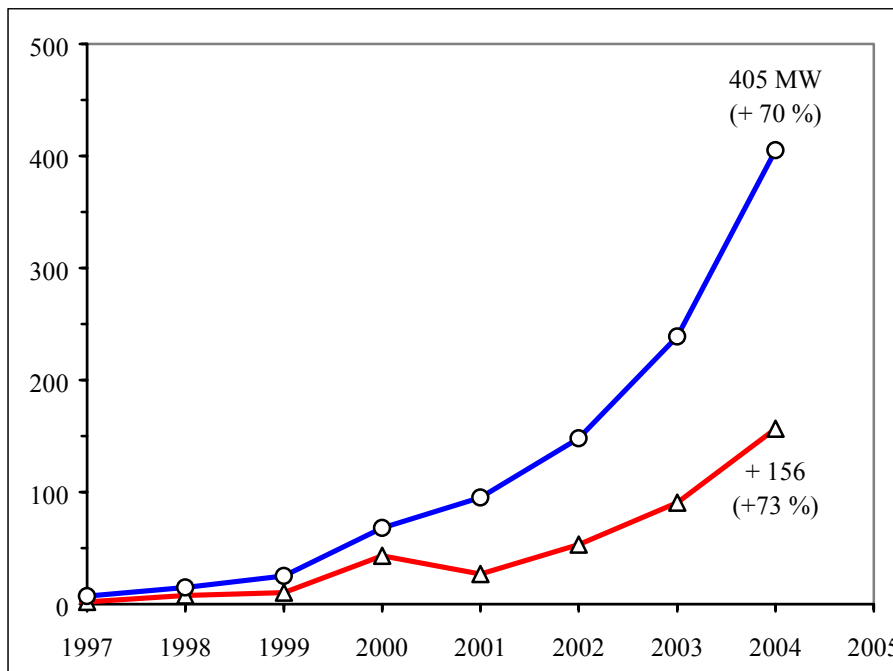
### 1) INTRODUCTION

This paper gives an overview of the development of wind power in France in 2004. Most of the statistics are from the data base developed for ADEME by TEXSYS and available from the web site [www.suivi-eolien.com](http://www.suivi-eolien.com). A limited number of wind farms installed at the very end of 2004 and not yet fully documented in his data base in December 2004 are also integrated here in this analysis.

### 2) 1997-2004 DEVELOPMENT

At the end of 2004, 405 MW were installed in France (mainland France, Corsica and overseas departments and territories) representing an increase of 70 % from the 238 MW in operation at the end of 2003. The increase off 156 MW of operating capacity in 2004 alone represents an 73 % increase. Although impressive, those growth rates should be put in balance with the modest absolute values of installed capacities in Europe, mainly in Germany and Spain.

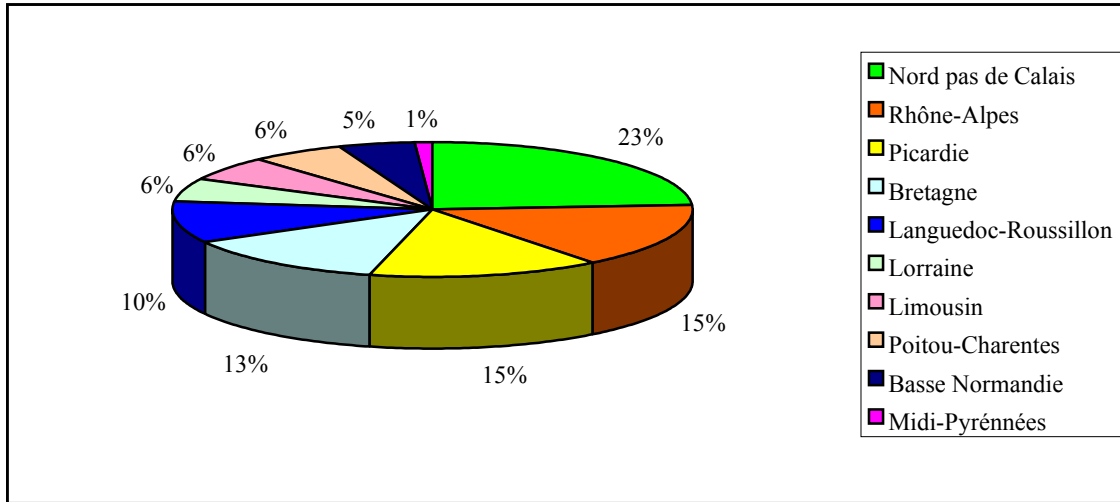
Figure 1: 1997-2004 development of wind power in France



### 3) REGIONAL DEVELOPEMENT

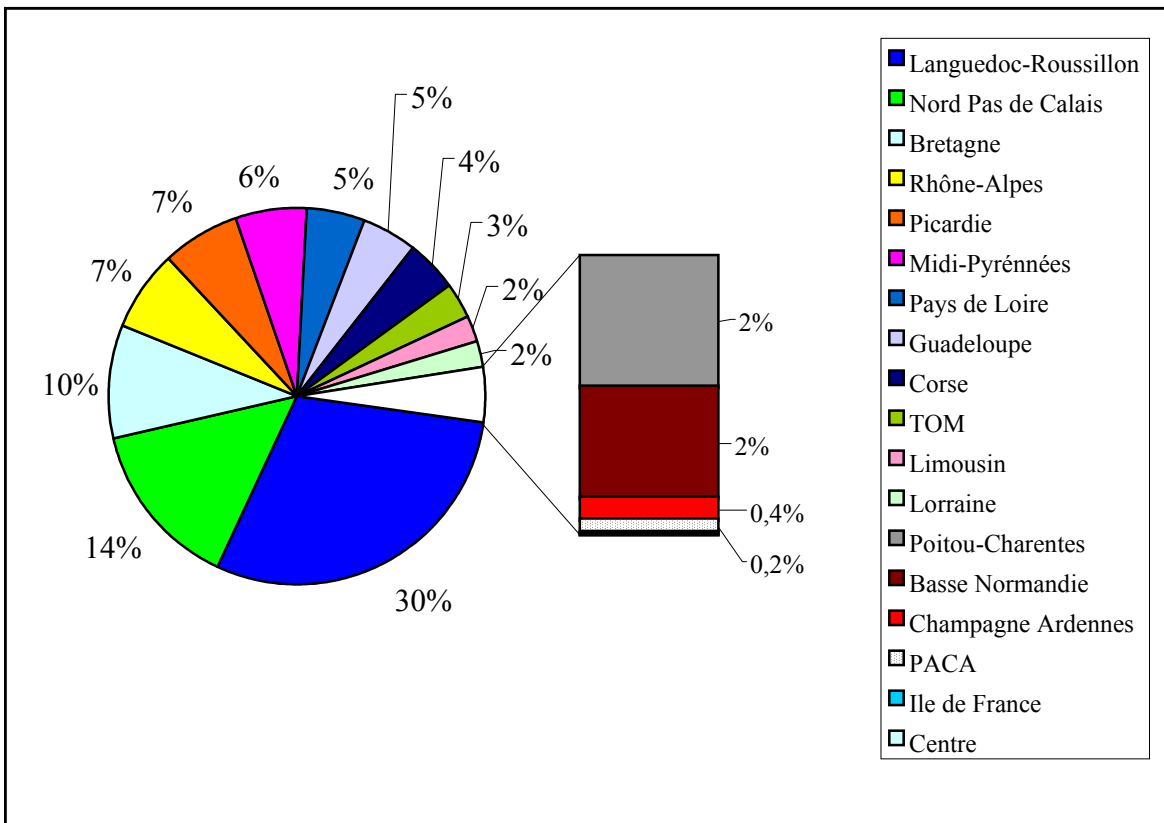
As shown in figure 2, in 2004, the 154 MW of new capacity were installed in 10 regions, all in mainland France. Due to the tariff system which enables to get a sufficient profitability even in less windy sites, new capacities appears not only in the most windy region (e.g. in Languedoc-Roussillon) but also in less windy ones: Nord-Pas-de-Calais, Picardie, Bretagne, Lorraine...).

Figure 2: Regional distribution of the 154 MW installed in 2004



The regional distribution of the 405 MW in operation at the end of 2004 are shown in figure 3. Here also, the consequence of the tariff system on a fair distribution of capacities in the French territory are obvious: 18 region have already benefited from wind power on the 26 French administrative regions (of which 21 in continental France).

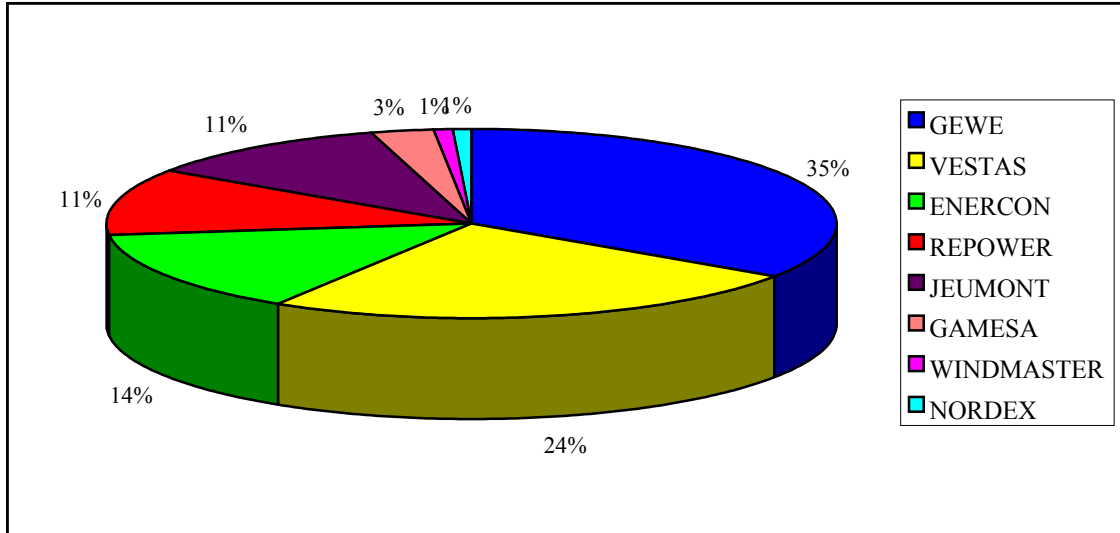
Figure 3: regional distribution of the 405 MW installed at the end of 2004



#### 4) MARKET SHARES

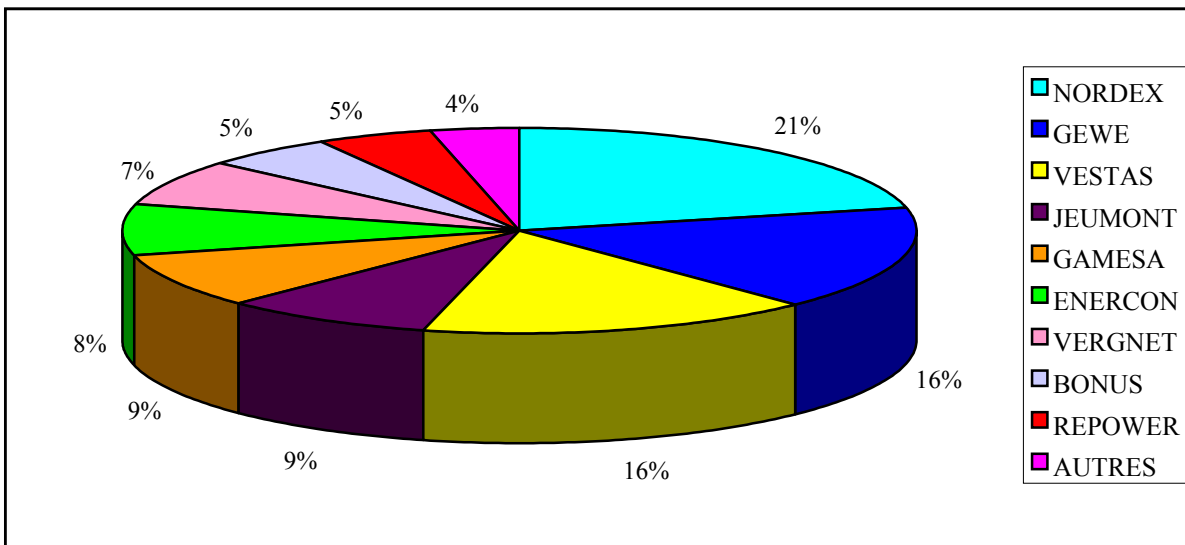
The new trend in 2004, as shown in figure 4, is that the three global market leaders in 2003 (VESTAS, GE WIND and ENERCON) are also the three first wind turbine manufacturers used by developers for the 154 MW installed in 2004. The French manufacturer Jeumont represented a 11 % market share in 2004.

Figure 4: 2004 market shares of wind turbines manufacturers (total: 154 MW)



The market shares on the 405 MW in operation at the end of 2004 is slightly different. In particular, due to its historic involvement in France, NORDEX is still the larger provider of wind turbines with 21 % of the total. French manufacturers JEUMONT and VERGNET represent a total of 16 %.

Figure 5: total market shares of wind turbines manufacturers (total: 405 MW)



## 5) OTHER CHARACTERISTICS AND CONCLUSIONS

The estimated energy delivery from wind power in 2004 is around 0.6 TWh (instead of around 0.46 in 2003). On a complete average year, the 405 MW installed at the end of 2004 would deliver approximately 0.9 TWh.

Wind power still represents the largest part of new applications for power from renewables in France. According to EDF, at the end of 2004, on a total of 3823 MW of application for grid connection, 95 % (3612 MW) are wind power projects. The rest is power from the biomass part of municipal solid waste (7.5 %), biogas (1.5 %), small hydropower (1.3 %) and grid connected photovoltaic systems (0.2 %).

Even if the relative growth rates of installed capacity and annual implementation are impressive, one can conclude from those data and analysis that the development of wind power in France is still too low to achieve the target fixed by the governmental prospective programme for new investments for power production published in 2002 (2 to 6 GW from wind power at the end of 2006). On the positive part, the fact that the vast majority of projects for renewable energy based electricity in France are wind power projects shows that the technical and economical requirements for the

development of wind power in France are achieved. So, as soon as the remaining requirements concerning the simplification and acceleration of building permits and grid access will be achieved, the French wind power market will really take off at a level compatible with its potential.

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Useful Internet resources for wind power in France:

[www.suivi-eolien.com](http://www.suivi-eolien.com)

[www.ademe.fr](http://www.ademe.fr)

[www.edf.fr](http://www.edf.fr)

[www.enr.fr](http://www.enr.fr)

[www.fee.asso.fr](http://www.fee.asso.fr)