

Spain – Southern Europe’s Powerhouse

The Spanish wind energy industry has forged ahead in recent years more successfully than any other in southern Europe. A sparsely populated countryside combined with strong government policies have together made Spain a powerhouse for both manufacture and development.

In 1993 just 52 MW of wind energy capacity was operating in the Spanish landscape, much of that concentrated in the windy district of Tarifa facing out towards Africa across the straits of Gibraltar. By the end of 2000 the total had mushroomed to 2,836 MW, over a third installed in that one year alone. During 2001, wind energy soared again to reach 3,550 MW, maintaining Spain’s position as No.2 in Europe.

As importantly, this development is now taking place across many regions, from the jagged Atlantic coastline in the north-west to the mountains of Navarre, in the shadow of the Pyrenees, to the sun-drenched plains of Castilla la Mancha.

National support

The origins of Spain’s success can be found in a mixture of factors - an excellent wind regime liberally spread across a land mass over ten times as large as Denmark, a focused regional development policy and a national support scheme which is strong and straightforward.

The first piece of government legislation to provide substantial backing for renewable energy was introduced in 1994. This obliged all electricity companies to pay a guaranteed premium price for green power over a five year period, operating in a

similar way to the Electricity Feed Law in Germany. At the end of 1998 the government reaffirmed its commitment to renewables with a new law designed to bring this system into harmony with the steady opening up of European power markets to full competition.

The 1998 law confirmed an objective for at least 12% of the country’s energy to come from renewable sources in 2010, in line with the European Union’s target, and introduced new regulations for how each type of green electricity would be priced. For wind energy producers, this means that for every unit of electricity they produce they are paid a price equivalent to 80-90% of the retail sale price to consumers. During 2001, the government agreed price was 5.4 US cents/kWh, making wind an attractive investment.

Provincial plans

Whilst national laws are important, a crucial impetus for wind development in Spain has come from the bottom up, from regional governments keen to see factories built and local jobs created. The busiest regions have been Galicia, Aragon and Navarre, but with Castilla Leon and Castilla la Mancha both now catching up. The incentive is simple: companies who want to develop the region’s wind resource must ensure that the investment they make puts money into the local economy and sources as much of its hardware as possible from local manufacturers.

A pioneer of this approach has been Galicia, the north-western region whose coastline juts out into the Atlantic Ocean. Starting from 1997, the regional government’s grand plan has been to install a capacity of 2,800 MW within ten years. This represents about 45% of the province’s power capacity. To achieve this, ten promoting companies, including

FROM A FEW HUNDRED WORKERS IN 1981
THE INDUSTRY NOW PROVIDES JOBS FOR
20,000 PEOPLE IN DENMARK AND A FURTHER
8,000 IN COMPONENT SUPPLY AND
INSTALLATION WORK AROUND THE WORLD.

both power utilities and turbine manufacturers, have been granted concessions to develop set quotas of capacity within 98 specified "areas of investigation". The total investment value could reach over \$2.6 billion.

Galicia's aim is that at least 70% of this investment should be made within its borders, creating more than 2,000 direct and 3,000 indirect jobs. As a result, factories making blades, components and complete turbines have sprouted up around the province. By the end of 2001, the region had already achieved 973 MW, almost 30% of the national total.

The mountainous province of Navarre is equally ambitious. During 2001 it reached 596 MW, already well on the way to its target for 650 MW by 2010. Together with other green power sources, this would make it completely self-sufficient in renewable energy. Most of the wind farms have been built for EHN (Energia Hidroelectrica de Navarra). Other provinces have similar industrial development plans, with a total of more than 11,500 MW of wind capacity planned to be constructed in the period up to 2012. One of the newest plans was announced by Valencia, which allocated concessions for 15 sites totaling 2,000 MW.

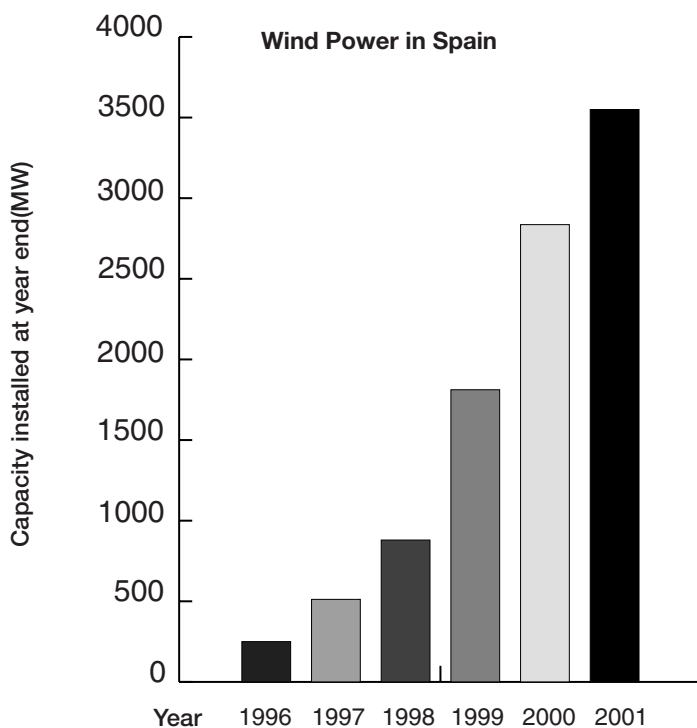
Environmental concerns have been given a different emphasis in different regions. Navarra included environmental impacts as one of the key aspects in site selection at the start. Other provinces such as Galicia and Castilla have not fully dealt with these issues leading to conflicts with organisations and residents. Other regions such as Catalonia have seen their plans delayed whilst awaiting a proper decision on how to address these conflicts.

Financial confidence

The Spanish model of development has also been different from other European countries. Most wind farms constructed have been large, with investment coming from consortia linking power utilities, regional government and turbine manufacturers. Spain now boasts one of the world's largest wind developers, Energias Eolicas Europeas, a joint venture between EHN and Iberdrola, which has plans to reach over 1,000 MW in the next few years. During 2001 the company signed a record deal worth \$800 m to construct 31 wind farms in Castilla la Mancha.

One important feature of the Spanish market is the confident approach taken by financial institutions. Major Spanish banks are happy to lend on wind schemes, despite the fact the national law does not say how long the present system of price support will last. Keen competition means that lending rates are attractively low.

The major technical problem has been the poor grid infrastructure in some parts of the country, necessitating the building of many kilometres of new power lines to connect up wind farms. This problem is now being solved partly by agreements to share the cost of grid strengthening between groups of developers who will all ultimately benefit from the improvement. Some smaller developers have still encountered substantial difficulties in reaching an agreement with the grid operator. Utilities in many cases have been abusing their dominant position to try to avoid or delay access to their networks by wind projects, especially those coming from independent operators. The province of Aragon has introduced a binding system to overcome the difficulty of access to the grid.



(Source BTM Consult)

DURING 2001, WIND ENERGY SOARED AGAIN TO REACH 3,550 MW, MAINTAINING SPAIN'S POSITION AS NO.2 IN EUROPE.