

# *Wind energy to take off in Greece*

Photo: Adam Crowley/Getty Images

| by Ioannis Michaletos

The Greek government has pledged a great expansion of wind power. Investors are lining up. Greece is ideally located to make use of wind for the production of energy.

The Greek government aims to increase the production of renewable energy so that it meets 20% of its power needs by 2010 and 30% by 2020. Wind power plays an integral role in achieving this aim and has attracted considerable attention from domestic and foreign investors. According to estimates by the Athens Polytechnic University, there will be a need to install some 2,400MW of wind power in Greece over the coming years. The Greek Scientific Club has calculated that Greece currently has 871MW of wind power installed, less than 1% of the global total of 94,112MW in 2007.

According to Dr. Tiniakos – an environmentalist, head of a regional NGO and a planning official in the Periphery of Western Greece – Greece has the second-best wind conditions in Europe after the UK. The country has a theoretical potential of 22GW. Large regions of Greece are located in wind streams flowing mostly from the Balkans in the north to the Mediterranean Sea in the south. Thanks to the sunny climate, it is possible to combine wind turbines in hybrid systems with photovoltaic units. Moreover, the existence of deserted islands, islets, hills and mountain tops adds to the investment potential of the country.

Further support for expanding Greece's wind power comes from a 2006 EurObserver report that classifies the existing Greek wind parks as the most efficient in Europe. The existing Greek wind parks produce at 2,223 hours per year, more than in Spain, the UK or Germany. In fact, Greeks have been well aware of their country's potential for wind energy. Greece, through its state-controlled power corporation, was one of the first countries to make use of wind energy some decades ago. Ioannis Tsiouridis, President

of the Greek Scientific Club, says that 'the national Greek power corporation DEI owned 87% of the wind energy capacity by 1994. Now it owns less than 8%, the rest belonging to various independent companies'. He adds that 'the corporation had already made plans for wind energy in the '70s and installed machinery in the small island of Kythnos back in 1982.'

In August 2007 DEI set up a subsidiary company for the production of renewable energy, DEI Renewable Resources. The business plan of this company aims at a capacity of 1540MW of renewable energy resources by 2014, with a budget of €1.6 billion. The capital will be provided by the parent corporation and private funding. At this moment the company has less than 100MW of renewables capacity. DEI Renewable Resources has recently signed an agreement with the French EDF Energies Nouvelles for the construction of wind parks with a power capacity of 122MW. The Spanish wind farm developer CESA is negotiating with DEI for the joint construction of a 500MW wind park.

DEI pays a guaranteed price of €73 per MWh for wind energy from independent companies on the mainland of Greece and €85 for companies on the island. This is one of the elements of a stimulation package for renewables that entered into law in June 2006. Operators can either sell

and stiff competition now that DEI itself has decided to make a strong re-appearance in the market'.

### Lagoons |

Nevertheless, there are still some major obstacles to the expansion of wind energy in Greece. For one thing, the infrastructure leaves to be desired. 'In many regions of Greece like Laconia, the Cycladic Island complex and the Evoia island, the existing electrical distribution system is weak, and needs considerable investment', says Kostas Stabolis, an energy consultant and frequent commentator on these issues.

Then, there is much public resistance to wind power for environmental reasons. Giannis Negris, a vocal columnist in Greek finance papers, says that 'wind turbines have a life span of 20 years and the country might become a graveyard of those'. He also points out 'the great peril to bird immigration paths' and 'noise and visual pollution'. Local communities in the areas of Parnona in Southern Greece and Pili in the Evoia Island have said they will not accept the installation of wind power units. The issue has become a hot topic of discussion in the Greek press with plenty of arguments for and against.

Tiniakos points out that research has shown that 'birds are able to overcome the obstacle of the wind turbines.' Yet Professor D.P. Lalas of the Athens Polytechnic University

## *Greece has the second-best wind conditions in Europe after the UK*

their renewable energy to DEI at these fixed prices or to the Greek transmission system operator. They can do this for ten years and extend this period for another ten years. Prices are subject to change in line with the annual increase of customer prices by the Greek power corporation. For investments over €100,000 state subsidies of up to 60% are possible.

Tsiouridis says that there is 'great interest by many companies entering the market but also a number of bureaucratic issues

observes that the 'Greek state hasn't been able to soothe the public's fears'.

There are also technical challenges. Mr. Roussos, an expert from the Greek Centre for Renewable Resources (CRES), points out that the potential of offshore wind power is hampered by the depth of the Greek seas. But consulting company Kantor believes offshore wind has great potential in Greece. 'Offshore wind parks have a favourable finance regime and plenty of lagoons can accommodate them, thus bypassing



Windmill at Thira, Greece. Photo: Nicholas Pitt/Getty Images

the problem of high depth in the sea'. DEI pays €90 per MWh for offshore wind energy. Kantor warns, though, that 'every investment should first take into account the environmental status of the lagoon', since there is no general law covering this issue.

Vasilis Spiliotopoulos, manager of energy company Gamesa Hellas, points to yet another bottleneck. 'The lack of a land registry for the whole of the country and the resultant ambiguity of which areas are protected is a critical problem', he says. Greece is the only country in the EU that does not have a national land registry covering the entire territory. Only the urban centres and some tourist regions are covered at the moment. The reasons are geographical and cultural – the geographic variety of the land (high mountains, many islands and isolated communities) and the general attitude of a population preferring to maintain autonomy and not be subject to state review. This makes wind energy investments more complicated. However, the Greek government decided in early March 2008 to proceed with a new land regulation law that aims to tackle this problem.

#### Players |

Despite these practical obstacles, more and more companies are entering the wind

power market and announcing plans to build parks. The Terna Company, through a subsidiary, is one of the biggest players in the market. It has recently announced a five-year €1.5 billion investment programme in renewable energy projects, such as wind parks, hydroelectric dams, photovoltaic parks and biomass projects. Mr. Spiliotis, the business development manager, projects that by 2012 the company will 'have 1.2GW of installed capacity in Greece including 1GW in wind farms and another 400MW of installed capacity abroad'.

In Bulgaria, Terna has applied for a license to build a 500MW wind park in the Gulyantsi region through its Bulgarian subsidiary, GP Energy LTD.

400MW wind park in the Cycladic islands and to export the excess production to the mainland through an underwater cable. Damco and Terna are also planning to build 16 wind parks on the island of Evoia, in the Kafirea region, with a total capacity of 371MW.

The Rokas company, which is a subsidiary of the Spanish Iberdrola Renewables group, currently operates 13 wind parks with a total of 193MW. It is constructing an additional park of 7MW on the island of Crete and has applied for a license of another 488MW park.

Acciona Hellas, a subsidiary of the Spanish energy company Acciona, operates a 35MW

### *The lack of a land registry is a critical problem*

The investment for this project is estimated at around €80 million. The group has plans for similar projects in Rumania as well.

The Damco energy corporation, which already operates a wind park of 75MW, has acquired additional licenses for 116MW of wind energy and has applied for another 932MW of licenses. It plans to construct a

farm in the Panetolikon mountain range in Southern Greece. According to the managing director Vasilis Pitoulis, 'the farm will add another 13MW and there are short-term plans to apply for licenses of around 500MW'.

Gamesa Hellas, yet another Spanish subsidiary, operates a 17MW park in Magnesia region of central Greece and holds licenses for an additional 345MW. ■