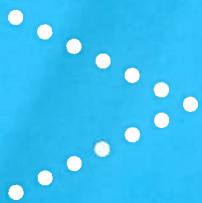




HELLENIC WIND ENERGY ASSOCIATION



# GREECE: THE NEXT EUROPEAN WIND ENERGY MARKET



Greece, a marine nation, has always known the **value of wind**. From ancient times it began harnessing its force in order to explore, conquer or just commerce with other peoples in the Mediterranean.



Tower of winds,  
with Acropolis in the background

**It also learned very early, the price one pays when there is no wind blowing** (the sacrifice of young Iphigenia to the Gods, in order for the Achaean fleet to sail to Troy) **or when there is too much wind** (the 10 years of Odysseus' trials and tribulations on his way back home from victory won on the battlegrounds of Troy, albeit through a Trojan horse).

**And of course we had a God to account for the comings and goings of this uncontrollable, at some points, force.**

Our ancestors believed that God Aiolos, the wind keeper, resided on the island of Aeolia, where he kept the winds in a cave and at Zeus's command he released or summoned them back.

According to Homer, Odysseus and his crew reached the island of the wind god, where Aiolos hosted them for a month, and then provided Odysseus with a bag containing storm winds to help them sail.

They sailed off with a westerly wind at their backs, and after ten days came within sight of Odysseus home, Ithaca.

But while Odysseus was sleeping, his crew, mistakenly believing Aiolos' bag to be full of silver and gold, greedily opened it and all the winds rushed out sending the ship off course in a hurricane.

**And that was the first and last chance**

Hence, it's a mystery how the Danes beat us in modern times. But they did, as history has recorded unequivocally and no one can change that, not even God Aiolos.

Of course, we tried to make amends by quickly joining the modern Aeolian scene.

The electric utility (Public Power Corporation - PPC) built its first wind installation as early as 1983 on the island of Kythnos, one of the first (if not the first) wind parks in the world.

**Today, almost 25 years later from that first wind park with 5x15 kW MAN turbines, total operating capacity stands at 590 MW, extending from Thrace in the North to Crete in the South.**





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OPERATING CAPACITY		
REGION	MW	No OF WT's
EUBOIA	204.5	345
EAST MACEDONIA & THRACE	180.4	168
CRETE	105.4	183
AEGEAN	48.8	174
PELOPONNESUS	37.9	16
IONIAN	10.2	17
ATTICA	3.2	7
<b>TOTAL</b>	<b>590.29</b>	<b>910</b>

This figure results from the European Union Directive (2001/77) which sets a target for Greece, of 20.1% electricity production from Renewable Energy Sources by the year 2010. This is estimated at approximately 13.7 billion kWh.

The Renewable Energy Sources mix that will meet this target, as presented in Greece's 3rd national report to the Commission is given in the following table

Wind potential is the gift god Aiolos made to Greece and as he was quite generous, we take pride in it.

The wind potential in the Aegean islands and most of Eastern Greece can only be rivalled by Scotland the Brave.

Thus, with enough wind potential to power far more than Greece, available specialised and experienced personnel, a satisfactory feed in tariff system and investors queuing up, it is no wonder that the national target for the year 2010 stands at over 3,300 MW.

RES TYPE	Requirements in Installed power by 2010 in MW	Production of energy in 2010 in billions of kWh	Percentage per type of RES in 2010
WIND ENERGY	3,372	3.09	10.42
SMALL hydroelectric	364	1.09	1.60
LARGE hydroelectric	3,325	4.58	6.74
BIOMASS	103	0.81	1.19
GEOTHERMAL	12	0.09	0.13
PHOTOVOLTAICS	18	0.02	0.03
<b>TOTALS</b>	<b>7,193</b>	<b>13.67</b>	<b>20.10</b>

Therefore, at least 2,800 MW of wind installations are waiting to be realised in the next 5 years. **No mean task**

## Greek postal stamps depicting Aerides - the winds, taken from the Tower of Winds

### The eight winds on the Aerides Tower (Tower of the Winds)

<p><b>Boreas (North)</b> He blows the cold north wind through a large shell.</p>	<p><b>Kaikias (North East)</b> He throws a basket of hailstones on those below.</p>	<p><b>Apeliotis (East)</b> A young man bringing fruits and grain.</p>	<p><b>Evros (South East)</b> An old man with beard is wrapped in a cloak.</p>
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## Can it be done?

The complete picture, as always, of course is not all roses.

The ingredients for success may be in the pot, but you also need a ladle and a cook.

The ladle, the legal and financial framework that will mix in all the ingredients in the right quantities in the right order, at the right time, leaves a lot to be desired and has done so for a number of years. Bureaucracy hampers efforts and adds delays that take the joy and some profits out of the development process. There are also delays in building the required grid lines that we'll take up the new wind capacity.

There is definitely room for improvement and we have been promised it by the cook himself.

The government on many occasions has declared its will to come up with a legislation that will lift once and for all the obstacles to wind energy development.

We expect that it will rise to the challenge and keep its promise.

***We will definitely keep ours, which is to see Greece become the next European wind energy market and in the process help the world wide effort to reduce green house gases and combat climate changes.***

On behalf of the Hellenic Wind Energy Association

***Dr. Tsipouridis Ioannis***

President



## Some figures worth remembering:

***Total production licenses granted so far correspond to approximately 4,000 MW, of which 1,100 MW have received installation license and of which 590 MW are operating.***

### ***Feed in Tariffs:***

***Interconnected grid 0.06842 /kWh plus 1.75645 /kW which on average amounts to a total of 0.07287 /kWh  
Autonomous island grids 0.08458 /kWh***

This publication was sponsored by Suzlon Energy A/S



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