



EWEA

THE EUROPEAN WIND ENERGY ASSOCIATION



Wind Energy:

Action Plan for the new European Commission
and Parliament

Powering Europe's future

Europe's fastest growing energy industry

Last year more wind power was installed in Europe than any other power technology. Wind power emits no greenhouse gases, so it is good for the environment and the fight against climate change. It creates thousands of skilled jobs in Europe. It boosts our energy security by reducing dependence on imported fossil-fuels from Russia and the Middle East. It offers long-term price stability as there are no fuel and carbon costs.

As every child knows, there is a large and inexhaustible supply of wind in Europe. If Europe gets behind wind, it will power our future...



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Europe faces tough challenges over the coming years: climate change, depleting indigenous energy resources, increasing fuel and carbon costs and the threat of supply disruptions.

At the same time, Europe's power plants and electricity infrastructure are ageing. Over the next 12 years, 360 GW of new electricity capacity – 50% of current EU electricity generating capacity - needs to be built to replace ageing power plants to meet the expected increase in demand⁽¹⁾.

The next European Commission, the new European Parliament and EU Member States must use this opportunity to construct a new, modern power system capable of meeting the energy and climate challenges of the 21st century, while enhancing Europe's competitiveness.

Wind power contributes to all of the EU's energy policy objectives – increased competitiveness, energy security and fighting climate change. From 2002 to 2007 the wind energy sector created more than 60,000 new direct jobs in the EU, equal to 33 new jobs every day of the year. In 2008, European manufacturers had a 60% share of the €36 billion global market for wind turbines.

In 2008, more wind power capacity was installed in the EU than any other electricity

generating technology – 36% of the EU's new capacity in 2008 was wind energy, and a record-breaking 27 GW of new wind power came online on a global level. The year ended with the EU institutions adopting the Renewable Energy Directive, setting in place a legal framework for renewables and a 20% target for 2020, broken down into binding national targets.

Wind - an indigenous power source that comes at a knowable, stable cost because the wind itself is free - is powerful protection against fuel imports from third countries at fluctuating, increasing and unpredictable costs. It also provides jobs and creates export opportunities for Europe, the global leader in wind energy technology.

There is still a vast untapped wind potential in Europe. The European Environment Agency⁽²⁾ states that the economically competitive potential of wind energy in 2020 is three times greater than expected electricity demand, and in 2030 is seven times greater than expected electricity demand.

The European Wind Energy Association raised its own 2020 targets in 2008, following the recent adoption of the EU Renewable Energy Directive. EWEA thinks that 230 GW of installed wind energy capacity – including 40 GW offshore - could be installed in the EU by 2020, providing 14-17% of our electricity.

⁽¹⁾European Commission, 13 November 2008; SEC(2008) 2871

⁽²⁾EEA. Europe's onshore and offshore wind energy potential. Technical report No 6/2009

Developing a New Energy Policy for Europe

Over the course of the new European Parliament and next European Commission, MEPs and the Commission should work in the following key areas:

- Building a European offshore power grid;
- Improved competition in the Internal Electricity Market;
- New electricity infrastructure and ‘smart grids’;
- Increased R&D in wind power technology;
- Effective implementation of the 2009 Renewable Energy Directive.

Building a European offshore power grid

We must stop thinking of electrical grids as national infrastructure and start developing them to become European corridors for electricity trade. A future European offshore grid would contribute to building a well-functioning single European electricity market that will benefit all consumers, with the North Sea, the Baltic Sea and the Mediterranean Sea leading the way. It would provide grid access to offshore wind farms, smooth the variability of their output and improve the ability to trade electricity within Europe, thereby contributing dramatically to Europe’s energy security.

MEPs and the European Commission should work towards:

- Implementing European Commission President José Manuel Barroso’s manifesto statement that “one of the next great European projects is to give Europe a new European supergrid for electricity...”;

- Ensuring that by 2020, the initial stages of an offshore supergrid are constructed and operating with an agreed plan developed for the grid’s expansion to accommodate the 2030 and 2050 ambitions;
- Effective spatial planning;
- A regulated rate of return on infrastructure investments;
- Harmonisation of grid operating procedures and legislation.

Key legislative proposals and communications:

Commission’s Blueprint for a North Sea Offshore Grid	Expected to be published in 2010
Commission’s Mediterranean Energy Ring	Expected to be published in 2010
Commission’s Baltic Energy Market Interconnection Plan	Expected to be published in 2009
Commission’s Energy Security and Infrastructure Instrument (to replace TEN-E)	Expected to be published in 2010
The European Network of Transmission System Operator’s Ten Year Network Development Plan	Expected to be published in 2010



Improved competition in the Internal Electricity Market

A single European grid and effective competition in the European power markets are essential elements, not only for the integration of large-scale wind power and other renewables, but also to ensure that European consumers have access to affordable electricity and that our future electricity supply is less exposed to supply risk, carbon price risk and fuel price risk.

MEPs and the European Commission should work towards:

- Full ownership unbundling and a well-functioning and effective power market where investors are fully exposed to carbon and fuel price risk;
- Ensuring that gate-closure times are reduced to one or two hours through the development of intraday markets, regulating power markets and balancing markets throughout Europe;
- Balancing rules which pool wind farms to minimise the overall balancing costs and the cost to individual operators;
- A real price on pollution through an Emissions Trading System with full auctioning in the power sector and through domestic greenhouse gas reduction targets.

Key legislative proposals and communications:

Commission's Market Integration Roadmap	Expected to be published in 2010
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New electricity infrastructure and 'smart grids'

European electricity infrastructure is ageing and far too little has been invested in new grids. Meanwhile, new grid technology is available that

enables the power sector to link generation and consumption of electricity irrespective of distance and without the substantial power losses that characterises today's electricity infrastructure.

MEPs and the European Commission should work towards:

- An intelligently managed smart grid using demand-side management techniques and storage capacities;
- Ensuring that grid rules do not discriminate against wind energy and removal of technical requirements and procedures that are not technically justified;
- Reforming the TEN-E instrument to enable the "EU Energy Security and Infrastructure Instrument" to ensure that infrastructure is planned, developed, upgraded and operated with large-scale wind energy in mind;
- Developing improved ways of financing the building of new grids, based on regulated returns for interconnectors and offshore grids.

Key legislative proposals and communications:

Commission's Baltic Energy Market Interconnection Plan	Expected to be published in 2009
Commission's Energy Security and Infrastructure Instrument (to replace TEN-E)	Expected to be published in 2010
Commission's Communication Overcoming Barriers to Renewable Energy in the EU	Expected to be published in 2010
Framework Guidelines from the European Energy Regulators (ACER)	Expected to be published 2011 onwards
Network Codes from ENTSO	Expected to be published 2010 onwards

Wind power technology research and development

In the framework of the EU's Strategic Energy Technology Plan, the wind industry is proposing a long-term research, development and demonstration programme for wind energy: the European Wind Initiative (EWI). EWI is a roadmap for research needed to achieve the European 2020 objectives and beyond contributing to the 2030 and 2050 objectives. EWI focuses on key technology objectives to bring down the costs of onshore and offshore wind energy, integrate large amounts of wind energy into the electricity system, and developing the human resources needed.

MEPs and the European Commission should work towards:

- R&D focused on the wind resource: optimised wind farm design, efficient siting and wind resource assessment;
- R&D focused on turbines: increased reliability, operations and maintenance (O&M), efficiency, manufacturing processes and implementation of breakthrough technologies;
- R&D focused on offshore technology: offshore substructures, assembly, installation and decommissioning as well as environmental impacts;
- R&D demonstration projects for large, interconnected offshore wind farms;
- Ensuring the necessary education and training is available.

Key legislative proposals and communications:

Commission's Communication on Financing Low Carbon Technologies	Published in October 2009
Launch of the European Wind Initiative	Expected to be launched in 2010

Implement the 2009 Renewable Energy Directive

The 2009 Renewable Energy Directive sets the EU a renewable energy target of 20% by 2020, which means that over a third of our electricity will come from renewable sources by then. Wind power will be the biggest contributor to this target, benefitting EU competitiveness, reducing greenhouse gas emissions, improving energy security, increasing technology exports and creating jobs.

MEPs and the European Commission should work towards:

- Prompt and effective implementation by the Member States of the 2009 Renewable Energy Directive;
- Strict and early enforcement by the European Commission of the 2009 Renewable Energy Directive.

Key legislative proposals and communications:

Submission by the Member States of National Renewable Energy Action Plans	Deadline of June 2010
Effective enforcement by the European Commission	June 2010 onwards

Wind is already bringing Europe substantial benefits, and it is a long-term solution to our energy, climate and economic crises. Wind power is a fundamental part of a new, sustainable world energy order. In order for this to happen, we need to ensure that wind energy is allowed to develop fully. Simply put: wind is working – so why hesitate to tap its potential?

Wind and the economy

According to the European Commission, every time the oil price goes up \$20, the price of Europe's annual gas imports goes up by \$15 billion. This means that the increase in the price of a barrel of oil over the past few years from \$20 to \$80 has added \$45 billion to the EU's annual gas import bill. What is more, the oil price is unpredictable, reaching a high of \$147 in June 2008.

Because wind power production does not require fuel, its cost can be predicted with great certainty no matter the fluctuations in the price of oil, gas, coal or carbon. Using wind power not only saves significant amounts on import costs, it also gives stability to our economies at a time when economies worldwide are unravelling.

In 2008, wind power avoided fuel costs of €5.4 billion and CO₂ costs of €2.4 billion.

Wind and jobs

Between 2002 and 2007, direct employment in the wind energy sector increased by 125% - that is an average of 33 new jobs every day in Europe. EWEA predicts that there will be over 450,000 direct and indirect jobs in the sector by 2020, in a range of positions from manufacturing to project management. Jobs created by wind energy com-

panies have transformed the fortunes of cities and regions such as Bremerhaven in Germany, Nakskov in Denmark and Navarre in Spain. According to the European Commission's 2009 Employ-RES report, the green energy sector could see the creation of 2.8 million new jobs and 1.1% GDP growth if the 2020 renewables target is met.

The European wind energy sector employed 160,000 people directly and indirectly in 2008.

Wind and energy security

Currently the EU imports 54% of its energy and this is set to increase to 70% by 2030.

Not only is it reliant on others for over half its fuel, those others it so dearly needs are some of the most unstable regions and countries of the world such as the Middle East and Russia.

Using an indigenous source of energy such as the wind means the EU can be self-reliant, providing its own power.

In 2020 wind energy will provide 17% of the EU's electricity.

EU is importing 54% of its energy		
	EU share of proven global reserves	Years of domestic production
Oil	0.5% - 0.8%	7.7 - 7.8 years
Gas	1.4% - 2%	14.4 - 14.8 years
Coal	3.5%	50 years
Uranium	1.9%	-



Photo: DWIA and GWEC

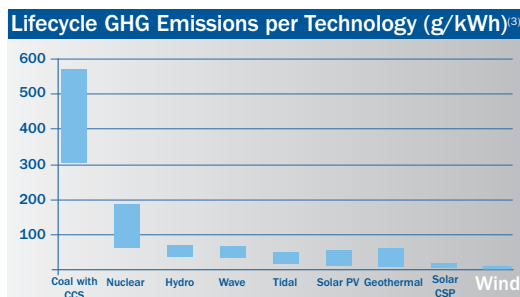
Wind and climate change

Wind generation produces no greenhouse gas emissions and replaces traditional, polluting power sources. It emits no toxic pollutants such as mercury, nor any conventional air pollutants such as smog-forming nitrogen dioxide, and it prevents serious water pollution or depletion.

Wind energy has the lowest lifecycle greenhouse gas emissions of all the energy production technologies.

A turbine reimburses the energy used and CO₂ produced to build it in just three to six months.

In 2020, wind power in the EU will avoid the emission of 333 million tonnes (Mt) of CO₂ – equivalent to 29% of the EU's greenhouse gas reduction target.



Wind and competitiveness

Wind power can reduce the electricity price because it has a low marginal cost, and therefore pushes out more expensive power generating technologies on the electricity market. When the electricity price is lowered, this is beneficial to all power consumers, since the reduction in price applies to all electricity traded – not only to electricity generated by wind power. What is more, investing in wind in Europe means that money that would have gone to fuel-exporting nations is put to work at home, helping consolidate Europe's leadership in the field of wind energy technology and pave the way for exports to third countries.

In 2008, European manufacturers had a 60% share of the global market.

In 2008, investments in wind turbines in the EU were worth €11 billion.

⁽³⁾Source: Mark Jacobson – Stanford University – February 2009
Review of solutions to global warming, air pollution and energy security. Energy & Environmental Science, 2009, 2, p.148-173





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About EWEA

EWEA is the voice of the wind industry, actively promoting the utilisation of wind power in Europe and worldwide. It now has over 600 members from almost 60 countries including manufacturers with a 90% share of the world wind power market, plus component suppliers, research institutes, national wind and renewables associations, developers, electricity providers, finance and insurance companies and consultants.

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