

Give Europe a

Breath
of **FRESH AIR**

green jobs

A European Wind Energy Association publication

www.ewea.org/freshair

Wind energy is already working in Europe



Photo: REpower

Wind energy is a mainstream power source, providing the answers to many of the challenges facing Europe today. Europe needs wind power to meet its 2020 renewable energy target of 20% by 2020, to help it in the fight against climate change, to provide its consumers with a domestic, secure power source that does not expose them to increases in fuel and carbon prices, and to create green, sustainable jobs – and the job opportunities are growing with the sector.

In 2009, there were around 192,000 people in the EU employed directly or indirectly by the wind energy industry. Some 20,000 of these were working in the burgeoning offshore sector. Breaking that figure down shows that on average 10,503 new direct wind energy jobs were created per year

in Europe in the five-year period from end 2002 to end 2007. Or, 29 new people were employed every day, seven days a week. That's an impressive rate that is predicted to keep on climbing.

Not only has wind energy launched individuals into sustainable careers, but it has also helped to reverse the fortunes of once declining cities and regions in Europe. Many of these, like Bremerhaven in Germany, were once the centres of the shipping industry, but as this declined, so did the prospects of the area. Wind energy, with the wealth of jobs it offers, has transformed some European towns.

A large proportion of the jobs available are in wind turbine and component manufacturing.

Wind farm development, installation, operation and maintenance provide other big sources of opportunities. Additional jobs are found in consultancies, research, and the financial sector. In terms of geographic spread, a lot of today's wind energy jobs are found in Denmark, Germany and Spain – the wind power pioneers. However, other countries are catching-up, for example in the UK where the offshore sector is on the verge of a massive expansion.

But the fast expansion of wind power has created some bottlenecks due to a shortage of skilled labour and too few technical graduates. Engineers, operations and maintenance technicians, site managers and project managers are in strong demand in the sector.



Photo: Nordex

Wind power around the world

Alongside Europe, there are two other dominant markets for wind energy: Asia and North America. In 2009, China more than doubled its wind power capacity compared to the previous year.

Over in the US, the wind industry has surged ahead and now provides enough power to keep the lights on in 7.9 million average American homes. The wind energy sector employs around 85,000 people in the US, and at least 100 wind power-related manu-

facturing plants have been built, announced or expanded in the past five years.

The strong growth rates seen in both Asia and North America have been driven by regional and national renewable energy policies. India, China, Korea and the US are all challenging Europe's position as world leader in wind power. However, Europe's world-recognised expertise and wind energy technology leadership mean it is still in the top spot.



“We are talking about thousands of jobs”

Poul Nyrup Rasmussen

President of the Party of European Socialists (PES), Chairman of Lindoe Offshore Renewable Centre and former Prime Minister of Denmark

“Today we need research investments of about €10 billion for the offshore wind sector. If we make good investments, we are talking about thousands of jobs – a whole new energy sector. These offshore wind power stations are so big you can’t have them on the land; you have to have them at sea. Why don’t we respect the sea instead of polluting it like in the Gulf of Mexico?”

“In the future, there will be offshore wind parks for which you’ll need 300 to 400 people constantly out there to install them, repair them – lots of workers will be hired to do this.”

“Today, 20% of wind energy comes from wind power in Denmark. Its introduction was combined with very advanced education and training programmes, which had strong popu-

lar backing. It was obvious to many people: why don’t we change and integrate wind power into our energy supply? When it started in the 1970s it was in the midst of the oil crisis. It was a way of creating new jobs for trainees, metal workers and researchers.”

“Denmark is a world leader in renewables, in particular wind energy.

We have been successful because of strong political, industry and labour market will. It took us 25 years to attain our leading position. Now, European institutions must create an economic environment that makes further expansion of wind energy possible. If we only focus on budget cuts during this financial crisis, we will lose momentum and the Americans and Chinese will take over.”

“We need new training programmes”

Anne Paneels

Senior Advisor for the European Trade Union Confederation (ETUC)



“There aren’t enough people trained for the new skills needed. We’ve experienced burn outs because there are too few people to do the job.

We need new training programmes. I think there should be social dialogue instruments created at sectoral level that have a good picture of

the situation in every sector, potential for job creation, conditions for creating quality jobs, anticipating the needs of the future.”

“It is important to attract young people to science and engineering, as well as qualified technicians.”



“Clean energy is one of the keys”

Maria da Graça Carvalho

MEP in the Group of the European People’s Party (Conservatives and Christian Democrats) and former Science Minister of Portugal

“During the crisis that we have today we need to make the right investments. That means investing in research, education and training, and the sectors that will be key for European competitiveness and industry. Clean energy is one of the keys – it helps all of us to be able to pay less for energy, to have better health and air quality and protect against climate change. But we need to be prepared. We need more engineers

and researchers. I’m an optimist in the sense that after each crisis there has been a technological breakthrough followed by a boom. The next industrial revolution is powered by clean energy.”

“Countries that have kept their engineering models, like Germany, are benefiting from this. We should reinforce our manufacturing and technological base. We should take indus-

try into consideration more than we have done over the last 20 years.”

“In some more traditional sectors the number of jobs will decline leaving a lot of scope for the transfer of skills. The oil industry is going to go through a real crisis, accelerated by the unfortunate oil leak in the Gulf of Mexico. One way out: transfer this technology and these jobs into offshore wind.”

“We lack a lot of engineers in Europe. It is very important to attract young people to science. There are also very few women in mechanical engineering.”

“I think there is the political will for change; we have advanced a lot in the last five years – now we have a binding strategy on renewables.”

“This is an opportunity for real change”

Christian Kjaer

Chief Executive, European Wind Energy Association



“Our power plants are ageing. We have to do something so this is an opportunity to completely change the way we produce, transmit and consume energy. I think there is political will to do what is necessary.

There certainly is investor interest and European renewable energy legislation provides a strong road map.”

“Today we are spending one fourth on energy research compared to the

levels of spending after the oil crisis in the 1970s. For renewables, there is a huge need for additional research. We need more funding to repeat the success we had in developing onshore wind power in the

offshore sector. Wind power and other renewables are insurances against fuel depletion and rising energy costs in the future.”

Right for the job

As the job-creating potential of renewable technologies is realised far and wide, more and more political and industry groups and leaders are making the green economy one of their main priorities.

In the European Parliament...

European People's Party (EPP)

"We want to position Europe as a world leader in this [green technology] sector in order to boost our economic growth and create more jobs and at the same time make Europe less dependent on fossil fuels."

EPP election manifesto 2009

Progressive Alliance of Socialists and Democrats (S&D)

"In the next five years, our ambition is to create new jobs and leave a less polluted world for our children. Tackling climate change and tackling the financial crisis form a single common challenge facing the world."

S&D policy document 'Tackling climate change and creating new sustainable jobs', February 2010

Alliance of Liberals and Democrats for Europe (ALDE)

"The way to create both jobs and wealth is to invest in new technologies providing us with the energy resources of the future. It is through new ways for creating sustainable and non polluting energy that the Union can lead in the world."

ALDE Five Year Strategic Programme for the European Commission, 2009-2014

The Greens-European Free Alliance (Greens-EFA)

"We have an opportunity to tackle the environmental challenges we are facing by promoting a shift to a sustainable economy, with lasting social and employment benefits."

Greens-EFA description of 'Green New Deal', initially published May 2009

European Commission...

"Meeting the EU's objective of 20% of renewable sources of energy alone has the potential to create more than 600 000 jobs in the EU. Adding the 20% target on energy efficiency, it is well over 1 million new jobs that are at stake."

2020 strategy for smart, sustainable and inclusive growth

"Environmental industries [...] directly employ around 3.4 million people and account for around 2.2% of Europe's GDP. That is more than the pharmaceuticals or aerospace industries. And each direct job in Europe's eco-industries creates between 1.3 and 1.9 indirect jobs."

EU Climate Action Commissioner Connie Hedegaard, at "Opportunities for Green Growth in Estonia" conference in Tallinn, Estonia, May 2010

World and national leaders...

"Building a robust clean energy sector is how we will create the jobs of the future – jobs that pay well and cannot be outsourced."

US President Barack Obama, January 2010

"By putting the right incentives for low-carbon growth, we can help create the investment, export and jobs we need to bring back economic prosperity."

UK Secretary of State for Energy and Climate Change Chris Huhne, July 2010

"We are choosing to develop renewable energy, we will guarantee the prices, but we want jobs to be created in our country."

French President Nicolas Sarkozy, June 2009

"To change the world's energy model is the most significant challenge facing humanity in this generation, not only for the impact on climate change but also for its effects on the economic model."

Spanish Prime Minister José Luis Rodríguez Zapatero, June 2009

"These are jobs for the future - jobs in our rapidly expanding renewables industry..."

Scottish Cabinet Secretary for Finance and Sustainable Growth John Swinney, launching Scotland's Green jobs blueprint to create 16,000 new green jobs, February 2009

The unions...

"The ETUC considers that this fight against climate change needs to be grasped for the opportunities it offers for both the development of new jobs and the transformation of old ones."

European Trade Union Confederation, 'The climate change, the industrial policies and the ways out of the crisis'



Looking forward: the future of wind energy jobs

According to EWEA's latest statistics, the wind energy sector will create some 250,000 new jobs in Europe in the next decade. This addition will take the total number of wind energy jobs to 280,000 by 2015 and 450,000 by 2020. If you work that out on a weekly basis, that's 450 new jobs in wind energy per week over the next decade.

In a 2009 study on green jobs, the European Commission said that, as a whole, the green sector could create 2.8 million new jobs and add 1.1% to GDP growth, if the EU's renewable energy 20% target is met.

As the offshore wind power sector expands, an increasing share of new job openings is likely to be in offshore wind power. EWEA expects employment in the European offshore wind power sector to exceed the onshore wind energy sector around 2025. By 2030, over 60% of the total employment in wind energy expected to be found in offshore wind energy.

However, to get to this point, we need to place greater emphasis on three key areas – expanding the offshore wind power sector and developing the supply chain; building new and improved electricity grids while developing the power markets and their mechanisms, and the training and education of more engineers and technical staff.



Photo: Vestas

2007 EMPLOYMENT IN THE WIND ENERGY SECTOR BY ACTIVITY

	Share of direct employment	Direct employment	Indirect employment	TOTAL
Wind turbine manufacturing	37.0%	40,182	42,716	151,316
Component manufacture	22.0%	23,892		
Wind farm development	16.0%	17,376		
Installation, operation and maintenance	11.0%	11,946		
IPP/utilities	9.0%	9,774		
Consultants	3.0%	3,258		
R&D/universities	1.0%	1,086		
Financial	0.3%	325.8		
Others	0.7%	760.2		
TOTAL	100.0%	108,600	42,716	

 **Where can I get a job in wind? Try EWEA's job portal - <http://jobs.ewea.org>**

Poul Nyrup Rasmussen, Maria da Graca Carvalho and Anne Panneels were speaking at an EWEA meeting entitled: 'Green jobs – more than a pink elephant?' on 9 June 2010 in Brussels.

The next EWEA meeting will held on 13 October in Brussels, "How Europe can benefit from reducing CO₂ emissions by 30%". The keynote speakers will be EU Climate Action Commissioner Connie Hedegaard and European Parliament Environment Committee chair Jo Leinen.

More information on www.ewea.org





Give Europe a breath of fresh air

Over the next 12 years, Europe must build new power capacity equal to half the current total. We must use this opportunity to construct a modern power system that meets the challenges of the 21st century.

Give Europe a breath of fresh air by adopting a wind turbine at www.ewea.org/freshair

