

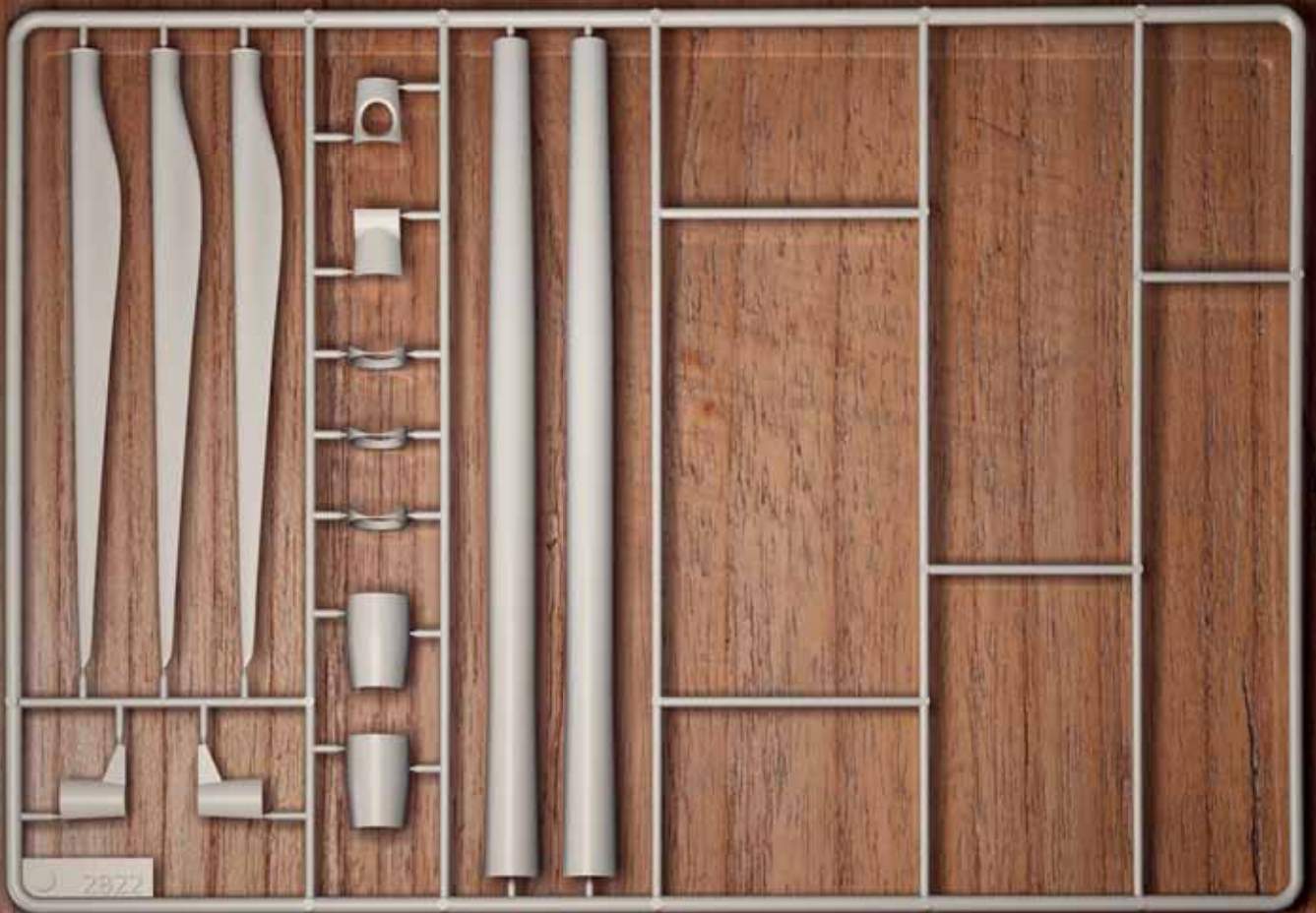


INTERVIEW

TAMÁS FELLEGI
Hungary's National
Development Minister

Blown away by Brazil
The South American
giant and wind energy

How can we gain maximum performance
with 50 percent less parts?



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Editor: Sarah Azau

Writers: Sarah Azau, Chris Rose, Crispin Aubrey

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Our new wind turbine in Hamburg is 40 metres higher than conventional ones. Since wind speed increases with every extra metre of height, this means 20 % more power. This 190-metre turbine is the highest of its kind anywhere in the world. 2,500 households are now benefitting from clean, green power, and CO₂ emissions have been cut by 3,100 tonnes a year. Is there anything we can develop for you?

A renewable new year

By Sarah Azau

Editor



It is the beginning of a new year, traditionally a time to reflect on the recent past and think to the future. Although *Wind Directions* is not too concerned with the classic New Year's resolutions to stop smoking or drink less – laudable though these may be – it is interesting to consider what resolutions our decision-makers may be making for 2011 on renewable energy.

Worthy resolutions they might like to consider could be ensuring that the 2009 Renewable Energy Directive is effectively implemented, or moving further towards building an integrated European electricity grid and an open and fair energy market.

For this new year marks an important anniversary – the 25th anniversary of the Single European Act, which brought the free movement of people, goods, services and capital to Europe. It was a real step forward in the building of the Union, empowering consumers and bringing prices down.

Yet this freedom has not yet been extended to the field of energy, and Europe's consumers are losing out. Chris Rose explores the questions surrounding the single market issue on p. 40.

Deeply entwined – or perhaps a more appropriate word is interconnected – with the question is the need for an updated, extended power grid for Europe, without which electricity cannot be traded in a single market. EWEA's GRIDS 2010 event, which took place in Berlin in November was the place to discuss, debate and find out more about the topic with experts and stakeholders. There are photos and reporting on the event starting on p. 18.

The Latin American giant

The New Year also comes during the darkest and coldest season in the northern hemisphere. It is sometimes necessary to distract oneself by focusing on something bright and uplifting and in this issue we do just that, hopping over to sunny Brazil, a country with a phenomenal wind resource, to explore its booming wind energy sector. EWEA's

Chief Operating Officer Bruce Douglas spent three weeks kite surfing up the north-east coast and talking to some of the European and international companies getting involved there.

Whether in Brazil or Belgium, it is always interesting to talk to the many hundreds of thousands of people involved in the wind energy industry. In a new series starting on p.38, I talk to various 'wind workers', discover what they do and why – and find out the parts of their job they like best (and least!).

The future's present

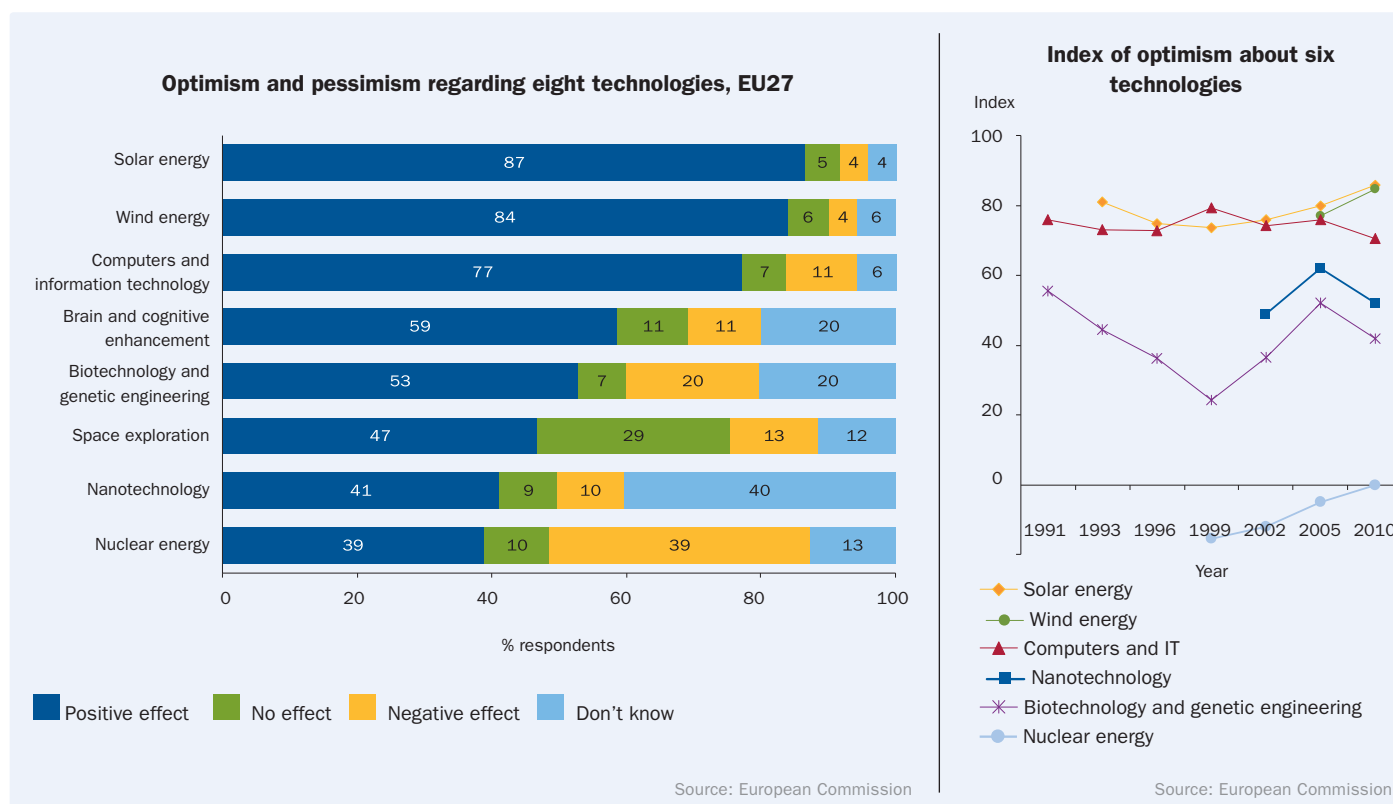
So we start off 2011 with a packed issue of *Wind Directions*. But maybe there is something you would like to see in it, or you have a comment or suggestion? Do write to me at communication@ewea.org and let me know.

Overall in terms of renewable energy, 2010 brought hope. Much new capacity was installed worldwide – EWEA is due to publish its 2010 statistics soon, and the signs are that it was another strong year. Then, the national renewable energy action plans submitted by the end of the year indicated the EU will meet or even exceed its 20% renewables target by 2020, and the European Commission's infrastructure package presents a real vision of integrated energy infrastructure (see p.46 for more details).

However, that hope was tempered with a strong note of caution – for example, the European Commission's stark warning in its 2020 energy policy paper that the EU's existing strategy is inadequate to meet its energy and climate change targets and challenges, and the decline in wind energy installations in former world leaders such as Spain.

In 2011, we can expect to see some legislative proposals - including the Commission's 2050 Energy Roadmap – which ought to give a better idea of what is to follow. ■

Over eight in ten Europeans are optimistic about wind energy



A new survey published by the European Commission on attitudes to technology shows Europeans are extremely positive about wind energy. People were asked whether particular technologies 'will improve our way of life in the 20 years', 'will have no effect', or 'will make things worse'. The technologies covered included wind energy. 84% of the respondents said they were positive towards wind energy, with just 4% saying they were negative. Out of the eight technologies included in the results, only solar power got a fractionally more positive reaction, with 87% positive and, like wind, 4% negative. It is interesting to compare attitude

to wind energy to nuclear, which got a divided reaction: 39% positive and 39% negative.

Indeed, the survey highlights that people are more optimistic about wind energy than any of the other technologies covered, with the exception of solar energy.

"We have seen time and again how positive people feel towards wind energy," said Julian Scola, EWEA's Communication Director. "And we always get a fantastic response to the many activities organised around Global Wind Day. The survey confirms again that Europe's citizens really appreciate the wind and the clean, infinite power it provides."

The document also examines attitudes over time. Wind and solar energy are two of the only three of the technologies covered in an "index of optimism" which have gone up over the last few years. Three others – nanotechnology, computers and biotechnology – have seen people's optimism decrease.

The eight technologies covered in the survey are: nuclear energy, nanotechnology, space exploration, biotechnology and genetic engineering, brain and cognitive enhancement, computers and information technology, wind energy and solar energy.

More information: <http://ec.europa.eu>

Commission publishes analysis of non-cost barriers to RES

The European Commission has published a study on renewable energy non-cost barriers in order to help Member States review their administrative regimes

and work out how best to implement the related articles of the Directive.

This will be used as input to the Commission's upcoming Communication on

"Overcoming Barriers to Renewable Energy in the EU", together with the findings of the WindBarriers study, as stipulated in the 2008 second Strategic Energy Review.

Energy 2020: exploring the European Commission's proposed strategy

In November the European Commission published its communication on the EU's new energy strategy for the years up to 2020 in a flurry of excitement. But what exactly does the communication say, and how will this affect Europe's wind energy industry?

As EWEA flagged up in its initial press release, part of the communication contains a sharp warning that the EU is set to fail on its climate and energy targets if there is not a definitive shift towards new technologies such as renewable energy. It stresses the need for greater financial resources to implement what is planned, specifically mentioning the "over 140 GW of offshore wind power currently being planned [...] mostly in the North Sea."

Not only this, but Europe could lose ground to ambitious new movers such as China and the US in areas such as wind and solar energy, says the Commission.

"We wholeheartedly agree with the European Commission's by no means exaggerated warnings concerning the EU's targets and leadership", said Justin Wilkes, EWEA's Policy Director. "Europe needs to step up its game if it wants to remain ahead in the renewable energy industry and properly address its energy and climate challenges."

The European Commission warns that Europe still has a "fragmented" energy market (for more on this issue, read the mini-focus on p. 40) and says the implementation of internal market legislation is "disappointing". It lists the implementation of the 2009 Renewable Energy Directive, the upgrading of energy infrastructure, building of offshore grids and reinforcing of internal electricity infrastructure as crucial for the development of a functioning internal electricity market. It warns that "Today's grid will struggle to absorb the volumes of renewable power which the 2020 targets entail (33% of gross electricity generation)." This is putting the security Europe's energy supply at risk, says the Commission.

One of the most talked-about parts of the strategy was the €1 trillion figure cited by Commission as the amount of energy investment needed in the next decade in order to build new capacity, modernise



More than 140 GW of offshore wind farms are being planned

Photo: Stiftung Offshore Windenergie

infrastructure, and support the move towards zero carbon electricity. The money will mostly come from electricity consumers except for projects of European interest such as "strategic infrastructures", which could be granted EU funding, says the Commission, which also emphasises the need to streamline permitting procedures for new projects.

The strategy also discusses achieving an energy efficient Europe, building an external EU energy policy, helping consumers have more knowledge and choice regarding their energy suppliers and bills and introducing financial incentives to reduce the energy consumption of Europe's buildings and integrate the European energy market.

The EU heads of state and government will discuss the strategy at the energy summit to be held in February. The Commission plans to propose legislative initiatives in the next 18 months.

"The real test of the new energy strategy will be the strength of these legislative proposals and whether national governments support and implement them", said Wilkes. "We encourage the European Commission to think big".

More than \$5 fossil fuel subsidies for every \$1 of support for renewables

The International Energy Agency's 2010 World Energy Outlook, released in November, should finally stamp out the myth that renewable energies are dependent on subsidies, EWEA's Chief Executive Christian Kjaer wrote on EWEA's blog.

The IEA report says that fossil-fuel consumption subsidies amounted to \$312 billion in 2009, while renewable energies in the same year received just \$57 billion of "government support". In other words, renewables got just \$1 for every \$5-6 given to fossil fuels last year, Kjaer pointed out.



Photo: Getty

The IEA goes on to forecast that government support for renewables will go up to \$205 billion in 2035. That is still – a quarter of a century in the future – less than two-thirds of the sum being doled out to fossil fuels today.

"In this time of budgetary constraints, governments would be wise to remove the billions of dollars spent in subsidising fossil fuels as well as nuclear", Kjaer said. "That in turn would mean less subsidies would be needed to bring in new, smarter and cleaner energy technologies such as wind power."

EWEA's blog is available at www.ewea.org/blog

Wind energy to dominate new power installations, says Commission



Fossil fuel capacity growth will slow considerably

The European Commission's '2020 strategy' implies it has big plans for energy developments over the next ten years, but what about wind energy?

Over the last fifteen years, the European Commission has increased its renewable energy targets several times as they were consistently reached early. Between 1996 and 2006, its wind energy targets increased ten times over.

However, last autumn, the Commission published new scenarios which stated that over the next ten years to 2020, wind energy would make up 41% of all new power installations in the EU – far more than any other power technology. This is in line with the current situation, with wind power leading the field in new power installations in Europe in 2008 and 2009.

"The European Commission now recognises that wind power will play a very significant role in the European electricity system by 2020, in line with current market reality, EU legislation and industry expectations," said Christian Kjaer, Chief Executive of EWEA. "It means that wind energy will provide electricity, equivalent

to the consumption of 120 million EU households by 2020."

Renewables up, fossil fuels down

Altogether, 333 GW of new electricity generating capacity will be installed over the next ten years, says the Commission in the document, entitled "EU energy trends to 2030". 64% of this (213 GW) will be renewables, of which the vast majority - 136 GW - will be wind energy. Wind will produce 14% of EU electricity by 2020, says the Commission. This is up from 5% today, produced by 80 GW of wind energy capacity.

At the same time, "fossil fuel generation sees a major contraction", says the European Commission document. While 41% of new capacity will be wind energy, and renewable capacity overall 64%, just 17% will be gas, 12% coal, 4% nuclear and 3% oil.

The European Commission's new scenario increases its expectations for EU wind energy capacity in 2020 by 85% compared to its 2008 scenario - from 120 GW to 222 GW. The new target is very similar to EWEA's 2020 target of 230 GW.

An inexplicable drop

For 2030, the European Commission almost doubled its expectations for wind energy to 280 GW, compared to 146 GW in its 2008 scenario. However, this is far below EWEA's target of 400 GW by 2020, and assumes that from 2020 there will be a drastic decrease in new wind power investments.

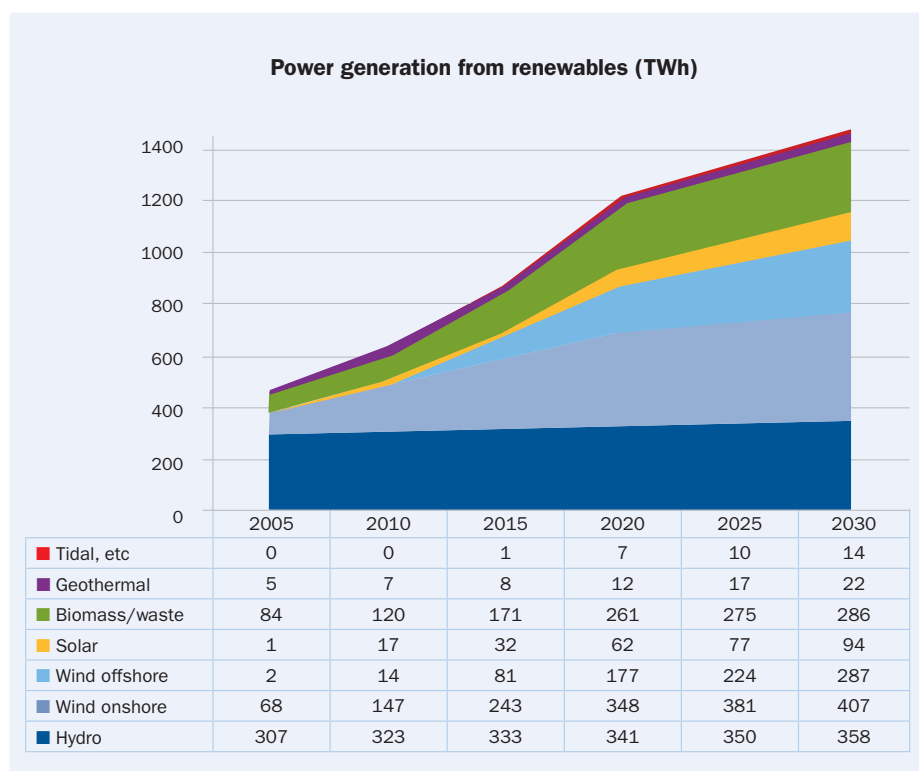
In fact, the European Commission's scenario predicts that the increase in wind power capacity will slow from an annual average of 13.6 GW in the decade up to 2020 to 5.8 GW in the decade to 2030. EU wind energy capacity increased by more than 10 GW in the EU in 2009.

"I find it unrealistic that there would suddenly be a dramatic decline in wind power investments as from January 2021," said Kjaer, "especially given the new scenario's high expectations for wind energy up to 2020. It is highly unrealistic to assume that as soon as the Renewable Energy Directive comes to an end, investments will radically slow down." ■

Read the European Commission scenarios:

<http://ec.europa.eu/energy>

Read EWEA's scenarios: www.ewea.org



Reference: European Commission

A closer look at Serbia...

In 2011, *Wind Directions* will take a look at a selection of wind energy markets across Europe and beyond.

By Chris Rose

Landlocked and surrounded by eight nations, Serbia is dealing with a sluggish economy while it tries to both mitigate recent military aggression and develop a much-needed renewable energy sector.

Wind power is expected to become a significant part of the renewable energy portfolio in Serbia in the future but the first 6 MW of installed wind capacity is not scheduled to become operational until the end of 2011.

That figure is expected to grow to about 100 MW by the end of 2012.

According to Serbia's ministry of mining and energy, the country's total estimated wind power capacity to be connected to the system is 1,300 MW, approximately 15% of the nation's total capacity.

Ministry documents show locations in the northeastern part of the country have a high wind potential based on wind speeds. Other locations potentially suitable for wind energy development include Midzor, Suva Mt., Vrsacki Breg, Tupiznica, Krepoljin and Deli Jovan.

The International Monetary Fund has projected that Serbia's economy would grow by 1.5% in 2010 after a 3% contraction in 2009 as a recovery in western Europe takes hold.

Serbia's dreams of joining the EU as a way of jump-starting its economy have long been blocked by the nation's refusal, or inability, to arrest General Ratko Mladic and turn him over to the UN war crimes tribunal for the former Yugoslavia in The Hague.

Accused of genocide and war crimes, Mladic was instrumental in carrying out now deceased Slobodan Milosevic's



military plans that resulted in the ethnic break up of Yugoslavia. As a result, Serbia was ostracised by the UN and bombed by NATO. The ensuing damage to Serbia's infrastructure and economy is still being felt today, although the international community is warming to the nation under current President Boris Tadic.

Oil, gas and coal are among the natural resources of Serbia, which has a population of about 7.4 million people living in its 77,500 km².

Serbia's ministry of mining and energy has noted that in 2007 the nation consumed 15 million tonnes of oil equivalents (Mtoe), of which 6.14 Mtoe — or roughly 40% — were imported. It is worth noting that coal accounted for 54% of the Mtoe total, followed by oil at 27% and gas at 13%.

The ministry also said that "Serbia's endowment of renewable energy resources 'RES' is considerable, around 4.89 Mtoe potential in the long term (only 17.6% of this potential is currently used by hydro power plants)."

The ministry document added all of the renewable energy in the country (9.928 GWh in 2007) was produced by hydro power plants, representing 24.9% of Serbian electricity consumption.

"The Energy Development Strategy anticipates efforts to improve energy efficiency and the use of renewable sources, enacting financial and non-financial incentive policies and implementation of investment projects," the document says.

Energy infrastructures and power generation facilities are totally controlled by the Government of Serbia through two public companies: "Elektromreza Srbije" (EMS or EMC), the only market operator, and "Elektroprivreda Srbije" (EPS), the only power producer.

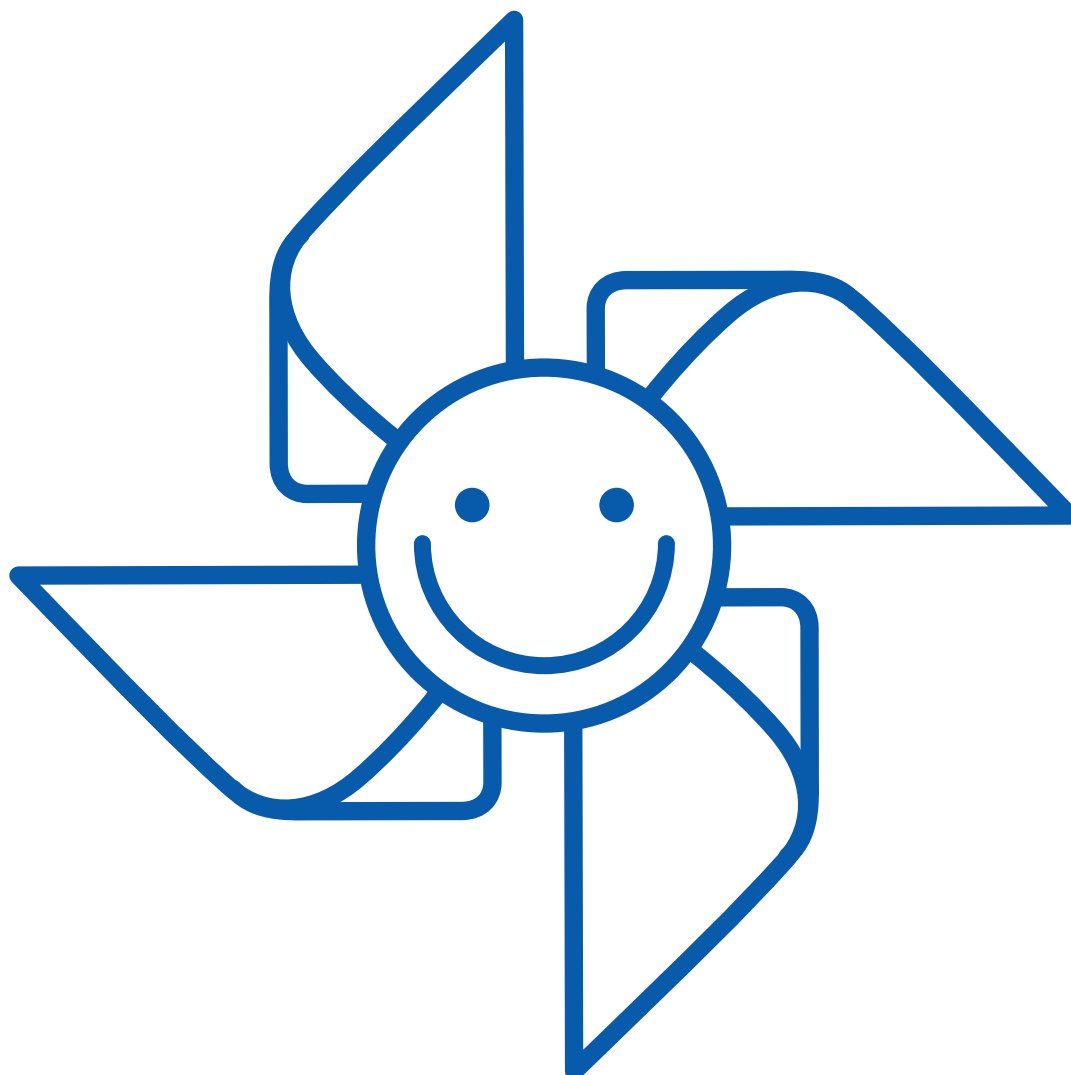
The document says EPS accounts for a net installed capacity of 8,359 MW, of which 62% corresponds to thermal power plants, 34% to hydro power plants and the remaining to combined heat plants.

The regulatory framework designed to increase the use of renewable energy sources is based on the adaption of the current Energy Law.

Amendments will allow so-called Privileged Power Producers, such as wind energy, to have priority in grid connection, access to feed-in tariffs representing €95 per MWh, standardised power purchase agreements and various tax incentives. ■

Serbia – the wind energy facts

INSTALLED WIND ENERGY CAPACITY	0 MW, but expected to reach 100 MW by end 2012
INSTALLED RENEWABLE ENERGY CAPACITY	34% of total power capacity is hydro
TRADITIONAL ENERGY SOURCE	Coal



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[HQ1650/2000]

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Photo: Hungarian National Development Ministry

Renewables boost our energy security

Tamás Fellegi, Hungary's National Development Minister and responsible for energy, tells Sarah Azau about his country's EU presidency and national renewables goals, and why they are so important.

Hungary is holding the EU presidency in the first half of 2011. What are your priorities regarding EU renewable energy for that time?

As far as renewable energy sources are concerned, there are two important tasks to be tackled during the Hungarian EU presidency: adopting the conclusions of the Council in the Energy Efficiency Action Plan and, still during the Hungarian presidency, we will probably have to start working on the agenda related to the development of the action plan on the financing of renewable energy sources.

One of the key areas in which the EU wind industry is lobbying for action at the moment is the electric grids. How do you intend to tackle the issue during your presidency?

Under the provisions on grid development, the requirements of facilitating the generation of electricity from renewable energy sources will need to be taken into account during the Hungarian presidency. The planning and implementation of grid development are the responsibility of the grid operators, particularly of the system operator. Moreover, the provisions of the third energy package will also take effect in the area of grid development during the Hungarian presidency, empowering the Commission rather than the Council affected by the presidency to establish more detailed rules on Community level (e.g. guidelines).

You became National Development Minister – including responsibility for energy – quite recently, in May 2010. What are your main aims for your energy portfolio?

The most important strategic objective of the Hungarian energy policy is to optimise the

simultaneous operation of the security of supply, competitiveness and sustainability, while also taking long-term considerations into account.

Any national energy policy can only succeed if all of these three objectives are simultaneously achieved.

Within that triangle, we need to find the right measures in order to reduce the country's dependence on import, diversify energy transport routes, ensure sustainability and encourage the strengthening of market competition, which has a beneficial effect on the expenses of retail consumers. Encouraging the utilisation of renewable energy sources obviously has a priority role in achieving the above goals, as they can supplant imported energy, help create jobs and stimulate the productive capacity of the economy, while contributing to the achievement of the sustainability objectives.

Hungary's binding 2020 renewables target is 13%. However, you have a national policy that aims higher than this – for 15% renewable energy by 2020. How do you intend to achieve this?

The difference between the two targets is because of the basis of the calculating system: the

“Any national energy policy can succeed if security of supply, competitiveness and sustainability are simultaneously achieved.”

- Hungary has an EU renewable energy target of 13% by 2020
- Its national renewables target is 15% by 2020
- By the end of 2009, it had 177 MW of installed wind energy capacity providing 0.4% of its electricity
- In 2020, it will have 1,200 MW of installed wind energy capacity according to EWEA's scenarios, providing 5.3% of its electricity ¹

¹ See EWEA's 'Pure Power' report on www.ewea.org.



Young Hungarians discovering wind energy at a European Wind Day

“Renewable energy has a priority role in supplanting imported energy, creating jobs and stimulating the economy.”

15% target was calculated on the basis of primary energy usage, while 13% is based on gross energy consumption. If we calculate these numbers the same way, the target established by the new government is more ambitious.

As far as I can see, the requirements of the EU can be met by making the highest possible use of the country's potential in terms of renewable energy sources and the rationalisation of authorisation procedures. Also, closely linked to the subject are the issues of energy efficiency, with regard to which we will also need to take a step forward, by supporting the energy modernisation of buildings and raising the awareness of the population.

In 2009 alone, Hungary's installed wind energy capacity went up by over 50%. Why do you think the sector has now taken off?

This is due to the fact that the capacities authorised by the Hungarian Energy Office in 2006 and

2007 have now been implemented and these capacities have begun to generate energy.

While the first Hungarian wind plant was put into operation in December 2000, integrated capacity at the end of 2009 amounted to 202 MW. This is expected to increase to 330 MW by the end of 2010.

What are the main barriers to wind energy development in the country? How are you tackling them?

Wind plants can be installed quickly and can be run at a low cost following the initial investment. Their disadvantage, however, is that under the local Hungarian conditions wind farms operate at an average aggregated utilisation rate of around 20%. This is because wind plants cannot be economically operated unless in locations of a relatively constant, medium wind velocity.

In Hungary, due to the fluctuation of wind velocity, the integration of wind plants into the electric grid poses problems in terms of the manageability of the electric energy system. The output and the energy transmission of wind plants to the national grid keep fluctuating, which is unfavourable in terms of the infrastructure and the predictable operation of the system.

One of the barriers to the development of wind energy, representing the highest volume of non-regulable source of energy, is the limited absorption capacity of the Hungarian electric power system.

However, it is envisaged that, in the medium term, it is possible to increase the number of integrated capacities by predictable scheduling and keeping up with the pace of network development. ■

Tamás Fellegi: career so far

- 1993-1994: Managing Director of DAC Foundation (Democracy After Communism).
- 1995-1996: Managing Director of EuroAtlantic Communications Ltd.
- 1996- 2000: Sectoral Director of Hungarian Telecom.
- 2000: becomes CEO of EuroAtlantic Inc.
- 2007-2009: Managing Director of Kapsch Telematic Services.
- 2009: founds Infocenter.hu Media Investment Inc.
- In 2010 he becomes Minister of National Development in Viktor Orbán's government.

MM100: Get the Maximum at low wind speeds

With its 100 m rotor diameter, the new MM100 turbine is especially designed for locations with low wind speeds. As such, it has a high Net Capacity Factor which will optimize yields even where limited grid capacity exists. Advanced and reliable, the MM100 incorporates all the benefits of the proven MM series.

MM100

Rated power	1,800 kW
Rotor diameter	100 m
Rotor area	7,854 m ²
Hub height	80 m
Certification	IEC S Class (IEC IIIA annual wind, IEC IIA extreme wind)
Sound power level	104.8 dB(A)
Start of Sales	2011

New turbines in Brazil will power the equivalent of 150,000 households



Photo: Keenpress Publishing Sisse Brimberg & Cotton Coulson

BRAZIL

Vestas receives 86 MW order in Brazil

Vestas has received an order to supply 37 turbines to Brazil; for one project in the north-eastern Bahia state and another in the Rio Grande do Norte state. The total capacity of the order is 86 MW, made up of 21 turbines of 1.8 MW and 16 of 3 MW. Delivery of the turbines is scheduled to start in September 2011 and the projects are expected to be completed by the end of 2011.

In total, the wind power plants will avoid around 27,000 tons of CO₂ a year, and provide enough electricity to power almost 150,000 Brazilian households annually.

More information: www.vestas.com

CANADA

Province of Alberta to add a new wind farm

Canadian energy company Suncor Energy has ordered wind turbines from GE for a new 88 MW wind farm project in Wintering Hills, Alberta. The 55 turbines, of 1.6 MW capacity each, are expected to generate enough clean electricity to power approximately 35,000 Canadian homes at peak operation.

The Wintering Hills project is located approximately 125 km northeast of Calgary. The project is owned jointly by Suncor (70%) and Teck Resources (30%).

More information: www.gepower.com

DENMARK

Offshore wind farm inaugurated in the Baltic Sea

The offshore wind farm Rødsand II, which lies between the German island of Fehmarn and the Danish island of Lolland, has officially been opened. With a capacity of 207 MW, providing enough clean, renewable energy for 200,000 homes, it is currently the largest of E.ON's six offshore wind farms. It is made up of Siemens' 2.3 MW turbines, and represents an investment of around €400 million. The project was completed three months ahead of schedule.

More information: www.eon.com

EUROPE

260 more wind turbines for Europe

Siemens has agreed to supply Enel Green Power with up to 260 wind power turbines, totalling 600 MW of capacity, for several wind farms across Europe. This could supply more than 350,000 European households with clean wind power. The turbines will be delivered between 2011 and 2014.

More information: www.siemens.com

GERMANY

80 wind turbines for German wind farm

Siemens is to supply 80 wind turbines to the Dan Tysk wind farm off Germany's North Sea coast. The farm, which will have a total capacity of 288 MW, will begin supplying the equivalent of 500,000 German households with electricity in 2014. The Dan Tysk offshore wind farm is owned by Vattenfall Europe (51%) and the city of Munich (49%).

Siemens is also launching a new business in Germany: the maintenance of grid connections between the mainland and wind farms on the high seas. The company has received its first order from grid operator TenneT to provide services for the mainland connections of two North Sea wind farms.

More information: www.siemens.com

More offshore capacity has been installed in Danish waters



Photo: Siemens

INDIA

New wind farm for India's Karnataka state

Spanish company Acciona Energy is set to open its third wind farm in India, a 56 MW park in the Karnataka state. The farm should come online in 2011, and will contain 34 wind turbines of 1.65 MW. The farm represents an investment of €58 million and will be the largest of the three wind farms owned by Acciona Energy in India: the others are Arasinagundi with 13.2 MW, and Anabaru with 16.5 MW.

More information: www.acciona.com

MOROCCO

New 150 MW wind farm for Morocco

Morocco's power operator Office National d'Electricite (ONE) has now closed its tender for a 150 MW wind farm located near Taza in the north of the country. The winning bid will be awarded a 20 year contract for the project, worth \$3.5 billion (€2.5 bn). The development should come online by 2014.

More information: www.one.org.ma

Photo: ONE



The winning bid for the Moroccan wind farm will get a 20 year contract

SOUTH KOREA

South Korea to invest \$8.2bn in offshore wind energy

South Korea's government has announced plans to invest \$8.2 billion (€5.8 bn) in the development of offshore wind farms with a total capacity of 2.5 GW over the next nine years. The country is aiming to set up a private-public partnership to install around 500 turbines off the west coast, with a 100 MW online by 2013, a 900 MW project by 2016 and the final 1.5 GW by 2019.

More information: www.korea.net



India has a booming wind energy sector

Photo: Keenpress Publishing Sisse Brimberg & Cotton Coulson

UK

Scotland sets up new fund to help develop offshore wind power

Scotland has set up a €80 million investment fund to help secure its place in Europe's rapidly developing offshore industry. The National Renewables Infrastructure Fund is designed to strengthen port and manufacturing facilities and supply chain provision for manufacturing offshore wind turbines and related components.

More than 7,000 offshore wind turbines are expected to be constructed off the UK's coast over the next decade, and the new fund will leverage significant private sector investment in the next four years, helping deliver an estimated 28,000 jobs and €8.1 billion in value to Scotland's economy over the coming decade.

More information: www.scotland.gov.uk

UK government provides €68m port overhaul fund

The UK government is to provide £60 million (€68 million) of funding to help overhaul the infrastructure of Britain's ports to support the manufacture of offshore wind turbines. Separate funding has been made available to Scotland, Wales and Northern Ireland.

As a result of the announcement, wind turbine manufacturers GE, Siemens and Gamesa confirmed they would invest up to £300m (total sum) in offshore wind manufacturing in the UK.

More information: www.decc.gov.uk

Possible extension for Forss wind farm

UK developers RES have submitted a planning application to extend the Forss Wind Farm Extension, in Caithness, Scotland. The proposal is for five additional turbines with a total capacity of between 4.3 and 6.5 MW.

Currently, the Forss wind farm has a capacity of 7.2 MW from six turbines, and generates power equivalent to the needs of over 3,700 households. The wind farm extension, if approved, will provide the equivalent to the annual consumption of an additional 3,000- 5,000 households.

More information: www.res-group.com

US

Order for 32 turbines in Idaho

Vestas has received an order for 32 of its 1.8 MW turbines, making a total of 57.6 MW, for the Horse Butte Wind project near Idaho Falls, Idaho. The project will be developed by Utah Associated Municipal Power Systems (UAMPS).

The contract includes delivery and commissioning along with up to a six-year service and maintenance agreement. The turbines should be delivered in 2010 and commissioning is expected in the second half of 2011. More turbines may be added to bring the total project size to 99 MW. The project will provide clean energy to communities in Utah, Idaho, Nevada, Wyoming and California.

More information: www.vestas.com ■



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The power grids above us and beneath our feet work 24 hours a day bringing citizens and businesses the electricity they need. EWEA's GRIDS 2010 event showed that combining wind power and an updated grid system is the key to Europe's energy future.

By Chris Rose

Photos: EWEA/Albrecht Noack, Jesús Quesada and Jason Bickley

*“The network
has to be
reconfigured
completely.”*

There was a strong consensus among those attending EWEA's GRIDS 2010 conference in Germany in late November that Europe needs an extended, refurbished grids system in order to meet its climate and energy goals by the end of this decade.

As a sprinkling of wet snow fell outside the Berliner Congress Centre, many delegates agreed that the significant benefits of building a so-called supergrid for the 21st century will far outweigh any costs associated with such an ambitious European project.

Those 620 people attending the two-day conference were also reminded that, in any event, Europe's existing outdated grid requires very substantial investment.

And they learned that having a properly functioning electricity market will help drive Europe's

goal of realising a new and robust renewable energy economy that can mitigate climate change, create tens of thousands of well-paying jobs and drive down power prices for consumers.

The conference examined different facets of our antiquated grids system — from the massive upgrading required to the need for streamlined regulations to the role that wind power can play in providing increasing amount of emissions-free electricity. Alongside this, more than 35 exhibitors took part in presenting their specialised knowledge.

Thinking big

According to some objectives, wind energy could represent 20% of European Union electricity consumption by 2020, rising to 33% a decade later and 50% by mid-century.



Arriving for the conference dinner right by Berlin's Brandenburg Gate

"New and better grids are essential if we are to exploit Europe's enormous wind energy resources and to enable a fast transition to a renewable energy economy."



Panellists presenting a vision for Europe's grid

"In short, new and better grids are essential if we are to exploit Europe's enormous wind energy resources and to enable a fast transition to a renewable energy economy," EWEA's president, Arthouros Zervos, said in his conference welcome message.

"This is the right time to build a grid that will power Europe for generations ahead," Zervos noted. "A modern, Europe-wide grid that connects offshore and onshore wind farms with consumers, that connects all countries and regions of Europe into one supergrid."

The conference also provided delegates with information on transmission technologies, interconnection plans, wind farm control clusters, onshore grid policies, a North Sea supergrid, electricity market design, smart grids, and permitting procedures.

At one session, Katherina Reiche, Parliamentary State Secretary, Federal Ministry of Environment for Germany, said Europe is now entering "the age of renewables" which requires a radical transformation of energy policies.

"Innovation and acceptance are the keys to successful expansion of renewable energies," Reiche added.

At another session, delegates were told that a number of Europe's citizens have reservations about building an extended power grid across the trading bloc.

"Transmission system operators know exactly where the next grid lines are to go, but the permitting is a problem", said Konstantin Staschus, Secretary General of the European Network of Transmission System Operators for Electricity (ENTSO-E).



Listening to key messages at the opening session



Vox pops

We asked: “Why is it important that the European grid system is totally re-vamped and enlarged in the next decade?”

“It’s necessary to adjust production and consumption to bring them closer together. There are some changes in transmission that are at least necessary. There are a whole bunch of necessary actions that need to be taken.”

Tobias Pfeifer, REpower Systems

“If the countries want to reach their targets for renewables it’s necessary because today the grids need to be improved.”

Sophie Jacques, 3E

“It needs to be re-vamped to accommodate the increase in renewable energies and also to provide a better matrix for sharing that resource amongst European countries.”

Tony Hodgson, Fugro Renewables

“It’s crucial for the development of wind power in Europe to achieve the [EU] climate and energy goals not in 2050 but decades earlier. I think it’s important also to show to the politicians and the public that it’s a big issue to update the grids — the transmission of energy to the places it’s being consumed.”

Felix Losada, Nordex

“Because there’s an increase of electricity consumption, because there’s a need for environmental protection through CO₂ reduction and furthermore that it’s important for the integration of renewables into the existing grid. It’s important to manage successfully the decentralised power generation.”

Stefan Von Westberg, Alstom Grid

“We need to explain to people that grid development is making life better for them, and not worse just because they see an electricity pylon on the horizon”, he said.

Stating more than the obvious

On the first day of the conference, a joint statement issued by EWEA, ENTSO-E, the German Engineering Federation, and the German Wind Energy Association noted that the EU and Member States need to acknowledge the urgency and importance of major grid investments.

The four organisations said that the EU and Member States should speed up permitting for grid investments, support speedy integration of wholesale electricity markets in Europe, and help finance new infrastructure through adequate and stable regulation and, when needed, EU funds and European banks.

On the second day of the conference, EWEA published a new report with a vision for a modern renewable energy power system, which sets out how the grid can integrate increasing amounts of wind energy.

‘Powering Europe’ argues there are no major technical barriers — but there are major economic benefits — to integrating large amounts of fuel- and pollution-free wind energy into Europe’s electricity grid.

The new report also identified infrastructure and markets as the two key barriers to hugely increasing the amount of wind power in Europe’s electricity supply.



Adopting a wind turbine with a click as part of the Breath of Fresh Air campaign

Those interviewed at the conference by *Wind Directions* had valuable and varied insights into Europe's existing and future electricity infrastructure needs.

In discussing the 'North Seas Countries Offshore Grid Initiative (NSCOGI)', Jan Hensmans from Belgium's Economy Ministry noted that a memorandum of understanding on the initiative provides a political vision that will cover grid configuration, market issues, regulatory issues and planning and authorisation procedures.

Ana Aguado Cornago, CEO of Friends of the Supergrid, said planning for an expanded European grid system could be done by transmission system operators (TSOs) with some entrepreneurial insight that takes the entire supply chain into consideration.

"For the ownership issue it is a European network so why does it have to be developed in the same way it always has been? Ownership could be mixed."

Asked why grids are such an important issue right now, Marcello Del Brenna, from Europacable, said "there's been a very strong push towards renewable generation which has given tangible results — wind energy has increased dramatically on- and offshore — but the problem is this requires a different view of the transmission network otherwise assets will be stranded... The network has to be reconfigured completely."

In addition to the sessions, panels and press conferences at the GRIDS 2010 event in Berlin,

A matter of acceptance

By Sarah Azau

Electricity cables are designed with pragmatic rather than aesthetic requirements in mind. Unfortunately this means that one of the biggest issues grid developers face – and one that came up again and again at GRIDS 2010 – is that of public acceptance. New transmission lines take a notoriously long time to be put up, often as much as 15 years, and delays are most frequent at the permitting stage.

In order to see how best to address these fears, German environmental body, DUH, recently carried out a study and dialogue process on new overhead power lines, in which it talked to a range of people from farmers to community groups to grid operators.

"People need more information on why the grid has to be extended", says DUH's Peter Ahmels. "They also need transparency of data, and they want data from someone independent, not from the grid operators".

He points out that in some countries (such as The Netherlands) power lines have to be a certain distance from housing, while in others (such as Germany) there is no legal obligation. Such a requirement could be established in all countries to ensure at least some separation of lines and dwellings.

A way of removing lines from people's sight altogether is to put them underground. Marcello Del Brenna from Europacable, which represents cable manufacturers, has seen partial undergrounding work as a solution for some lines which were blocked at the permitting stage. Of course, this comes at a cost, which Del Brenna puts at three to ten times higher than that of an overhead cable. He points out, however, that partial undergrounding is usually applied to just 5% or 10% of the line.

Money could also be invested in financial compensations for those living near a line, believes Feix, who suggests a catalogue of criteria could be drawn up to see who would apply.

Ahmels agrees that more has to be spent on tackling social acceptance issues, even, he suggests, a percentage of the overall cable costs could be required by law to be devoted to informing and working with the public. And as Del Brenna points out, more grids mean more renewables, which means exploiting European energy with European technology which creates European jobs.

visitors were also able to participate in EWEA's Breath of Fresh Air campaign by adopting a wind turbine at the portable kiosk. In terms of socialabilities, alongside a reception and another drinks reception hosted by Friends of the Supergrid, there were other chances to mingle and network during coffee and lunch breaks. The event was rounded off by a conference dinner held in the spectacular Axica building just next to the Brandenburg Gate. ■

More information on EWEA's events: www.ewea.org/events

More information on the Breath of Fresh Air campaign:

www.ewea.org/freshair

A worthy winner

At the GRIDS 2010 conference dinner, the wind energy industry's prestigious Poul La Cour prize was awarded to Dr Ian Mays, CEO of RES, for his outstanding contribution to the development of wind energy. Sarah Azau caught up with him.



Ian Mays is handed the prize by EWEA's CEO Christian Kjaer

"Like so many good ideas, the concept of EWEA was born in a bar."

You've been in the wind industry for 35 years now. What is the biggest change you've seen?
In terms of legislation it would be the 2001 renewable electricity directive. We had been pushing for it for a while.

Concerning the technology, it's very hard to pinpoint one real change as it's been a continuous evolution since the 15m diameter turbines of the 1980s, and these have got bigger over time.

Five years ago the industry finally got a chance to breathe as onshore turbines got to 2 MW, a size which is more or less the limit as any bigger and you have issues with components.

From 1995 to 1999 you were president of EWEA. Tell me about that.

I was around when EWEA was formed in 1982 – we began by pulling together national wind

energy associations to have a forum. But it got a bit frustrating by the end of the 1980s as we saw that the technology could grow, but there was no political willpower – we realised we needed to lobby to create a market and make EWEA – at that time quite academic - into an association industry would put money into.

In 1993, myself and a few others were having some beers when we came up with idea of a corporate group – industry would put money in and we would work and lobby together. Like so many good ideas, EWEA was born in a bar! I became the restructured association's first president from 1995 to 1999 and in 1996 we appointed the first CEO, Christophe Bourrillon. Initially based in the UK in RES's offices, EWEA later moved to Brussels to be at the heart of the EU.

You've achieved an enormous amount, but what are you proudest of?

I would say I'm proudest of the growth of RES, which I started in 1989 and which now has 900 employees throughout the world, and a very professional reputation. I'm also very proud of our report with the Global Wind Energy Council, 'Plugging the gap', on the world's fuels and why wind energy is necessary.

Another achievement would be the 280 MW King Mountain project in West Texas –the contract was signed in March 2001 and the wind farm completed by December that year. At the time it was the biggest wind farm in the world.

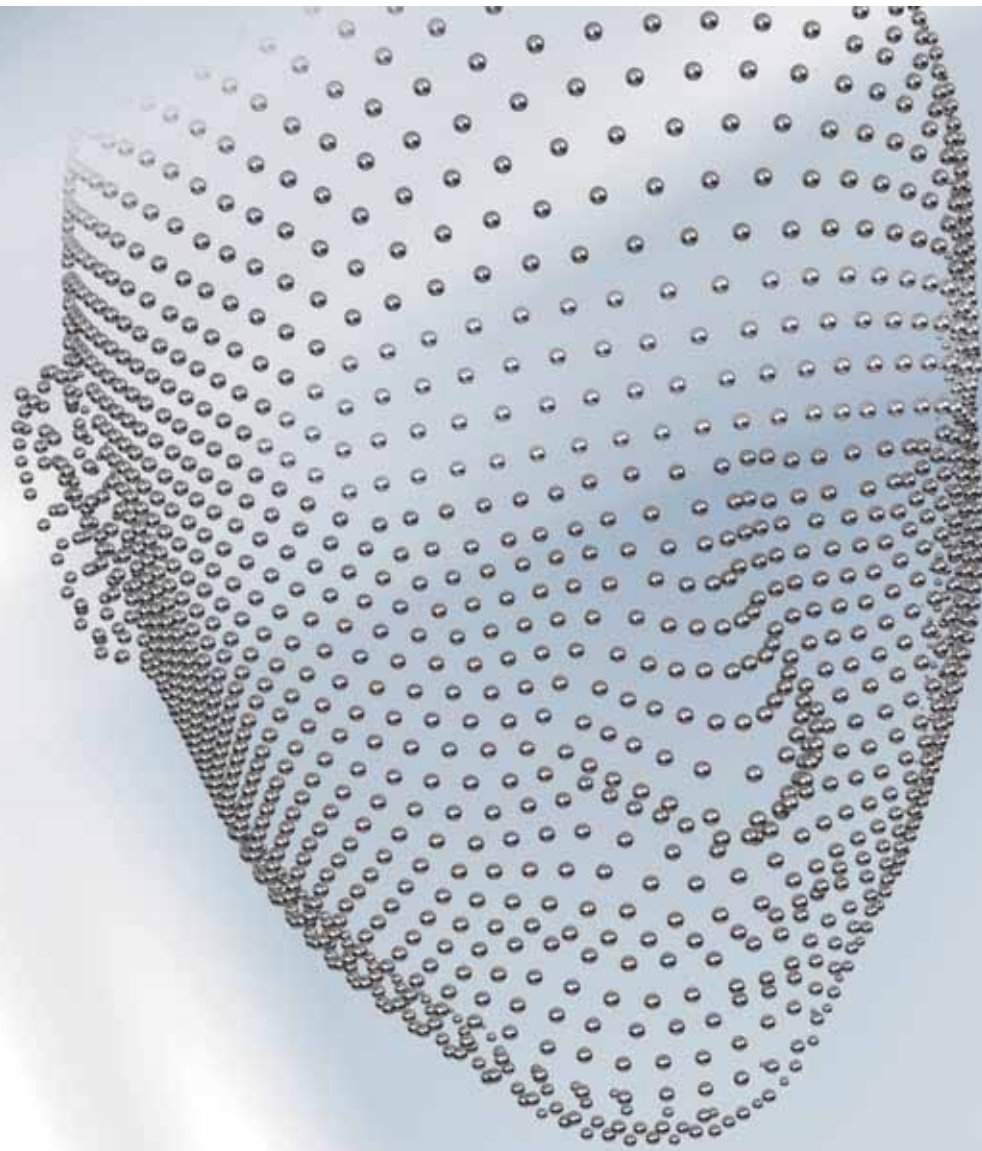
It has been a real privilege to have been involved in such an industry at the time of amazing growth that continues today. ■

Dr Ian Mays - a life in brief

- 1976:** PhD at Reading University, working with Dr Peter Musgrove and the UK's Department of Energy on a vertical axis wind turbine.
- 1982:** EWEA is formed with Mays on the Board.
- 1989:** Founds the company Renewable Energy Systems (RES), which starts operations in 1992. Focuses on ensuring RES can be involved in every aspect of wind energy development from engineering to development to financing.
- 1995:** Becomes EWEA's president until 1999
- 2007:** Awarded an MBE (Member of the British Empire)



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National governments, and the European Union institutions, must continue promoting wind energy development and an upgraded power grid in 2011.

What to expect in 2011

As 2011 begins, Chris Rose looks at what is due to happen in Brussels this year that will affect the wind energy industry, and finds that continued government support is required.

As wind power in Europe continues to weather the economic crisis, a number of government regulations, legislative policies and funding initiatives in 2011 can help the sector experience even greater success.

The European Union would send a strong long-term signal that it believes wind power can become a major player in a new green economy that also helps mitigate climate change if it publishes its 2050 Roadmap to a Low-carbon Economy, according to Justin Wilkes.

The Policy Director for EWEA, Wilkes said wind power would get an even bigger boost if the roadmap — which should include showing the benefits from a move to 30% greenhouse gas reductions from 20% over 1990 levels by 2020 — outlines the path to a 100% renewable energy economy by 2050.

“In 2011 the European Commission should take action against any Member State which has not put in place measures to meet its renewables target.”

“Europe and many other parts of the world are on the cusp of ushering in a green energy revolution that will transform the way humans produce and use energy,” Wilkes said in interview. “As part of that

transformation, wind power has the ability of generating increasing amounts of emissions-free electricity while helping to mitigate some of the worst affects of climate change.”

All about grids

He said the Commission should also publish this year its replacement of the trans-European energy networks instrument (TEN-E). This would be called the “energy security and infrastructure instrument” and its aim would be to speed up consenting of electricity grids of European importance and provide EU financing for those grids.

Wilkes said the European Commission should also analyse the National Renewable Energy Action Plans in 2011

and take the necessary action against any Member State which has not put in place the necessary measures to meet its target.

In addition, he said, the EU needs to provide sufficient funding to finance the 2011 European Wind Initiative (EWI) budget and propose in the next financial perspectives (2014-2020 budget) financing for the EWI in total.

Wilkes added the North Seas Countries Offshore Grid Initiative also needs to start work in 2011 if the growing appreciation of what the offshore sector can offer is to be realised, particularly given the Commission recently acknowledged that “over 140 GW of offshore wind power [is] currently being planned by European utilities, developers and governments, mostly in the North Sea...”.

He said it is also important for the full development of both onshore and offshore wind power that the European Network of Transmission System Operators for Electricity (ENTSO-E), made up of 42 system operators from 34 nations in Europe, continue their work



EU what? Do some of the terms leave you confused? Read on...

“2050 roadmap to a low-carbon economy”... To be published in 2011 by the European Commission, the roadmap will outline the actions needed to reduce greenhouse gas emissions in the EU by 80-95% by 2050.

“Trans-European energy network instrument (TEN-E)”... This was a funding programme for Europe energy network projects. It will be replaced in 2011 by an “energy security and infrastructure instrument” which should be bigger in scope than TEN-E.

“National Renewable Energy Action Plans”... Are the plans submitted to the European Commission by Member States to show how they will meet their 2020 renewable energy targets.

“European Wind Initiative”... A research roadmap, prepared by the European wind industry, national governments and European Commission, with a total budget of €6 bn (private and public funds) for 2010-2020, that aims to make wind energy more competitive.

“North Seas Countries Offshore Grid Initiative”... A group of ten countries working together to coordinate the building and operating of an offshore power grid in Europe's northern seas.

“European Network of Transmission System Operators for Electricity (ENTSO-E)”... A body of 42 grid operators from 34 European countries.

on developing a network code on grid connection.

Market rules

Last, but not least, Wilkes said the European Commission needs to continue its work on creating a truly functioning internal electricity market if

both wind power, and Europe as a whole, are to continue to prosper.

He noted that Europe still faces tough challenges this year with regard to climate

change, depleting indigenous energy resources, increasing fuel and carbon costs and the threat of supply disruptions.

Since Europe's power plants and electricity infrastructure just keep getting older, he said the European Commission, the European Parliament

and EU Member States should work hard at constructing a new, modern power system capable of meeting the energy and climate challenges of the

21st century, while enhancing the region's competitiveness.

The power of wind

Policy makers need to understand, Wilkes added, that wind power contributes to all of the EU's energy policy objectives — increased competitiveness, energy security and fighting climate change.

“Although politicians have to make some major decisions about energy in the next few years, wind power is already a proven technology that can be relied upon to do its part in reducing, and eventually replacing, fossil fuels.” ■

“The Commission recently acknowledged that “over 140 GW of offshore wind power [is] currently being planned.”

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Wind bites

"We are beginning one of history's great transitions, the transition to a new economic foundation for the 21st century and beyond, free of fossil fuels."

California Governor Arnold Schwarzenegger



"Wind power technology provides governments with a viable option for truly tackling the challenges of our time and for being part of the energy revolution

our planet needs."

Steve Sawyer, Secretary General of the Global Wind Energy Council

"When money is short, we should ruthlessly prioritise those areas of public spending which are most likely to support economic growth, including investments in our transport and green energy infrastructure."

UK Chancellor of the Exchequer George Osborne



"We need thousands of offshore turbines in the next decade and beyond yet neither the factories nor these large

port sites currently exist. And that, understandably, is putting off private investors, so we're stepping in."

UK Prime Minister David Cameron

"The offshore wind industry is seeking leadership and immediate support from government and the Scottish government is determined to provide that, as we have done for the last three years. Today I am delighted to announce — and open for business — Scotland's £70 million National Renewables Infrastructure Fund. The fund covers infrastructure relating to manufacturing and test/demonstration facilities."

Scottish First Minister Alex Salmond



"The energy challenge is one of the greatest tests for us all. Putting our energy system onto a new, more sustainable and secure path may take time but

ambitious decisions need to be taken now. To have an efficient, competitive and low-carbon economy we have to europeanise our energy policy and focus on a few but pressing priorities."

"Renewable energy, not nuclear, is going to be the growth area in the future."

EU Energy Commissioner Günther Oettinger

"North Dakota truly is the Saudi Arabia of wind energy potential, and the growth we're seeing in wind energy in North Dakota means more jobs creation, economic development and a cleaner environment."

Byron Dorgan, United States Senator for North Dakota



"The energy world is facing unprecedented uncertainty . . . We need to use energy more efficiently and we need to wean ourselves off fossil fuels by adopting technologies that leave a much smaller carbon footprint".

Nobuo Tanaka, Executive Director of the International Energy Agency



"Wind is stimulating economic growth, helping bring people out of poverty, and providing one of the cleanest ways to do it."

Retired US General and

former Secretary of State Colin Powell ■

Something to say?

Do you have something to say about *Wind Directions*, wind energy, renewables, EWEA's events or anything else? Write to Sarah Azau at communication@ewea.org with the subject title: *Wind Directions* letters page, and your letter could appear in the next issue!

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What's next? looking past the 2020 targets

Distribution: EWEA Annual Event 2011



EWEA
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Taking the bull by the horns

The largest country in South America is charging ahead with wind energy development. Bruce Douglas from EWEA spent three weeks on Brazil's remote north-east coast kite surfing and investigating the fast-growing wind industry.

By Bruce Douglas and Sarah Azau
Photos: Bruce Douglas

“The winds of Brazil have been attracting sailors for years; now it's the turn of wind prospectors.”

Far from the bright lights of Rio de Janeiro or Sao Paulo, the north-easterly Brazilian states of Ceará and Rio Grande del Norte, jutting out into the Atlantic Ocean, are blessed with some of the strongest and most consistent winds in the world.

Endless stretches of beach, mangrove, sand dunes and rain forest are swept by regular trade winds, accelerated and brought onshore by strong thermal up-drafts.

With such high potential, it is not surprising that Brazil's wind energy industry has been taking off massively in the last couple of years: the country added 264 MW of capacity in 2009 and by mid-2010, another 180 MW were installed, making a total of 786 MW.

Strong coastal winds are also good for kite surfers, and it was a combined passion for the sport and, naturally, for wind energy, that took EWEA's Chief Operating Officer Bruce Douglas to Brazil last October in order to kite surf up the

coast, visit existing wind farms and talk to the movers and shakers in the country's burgeoning wind energy sector.

“The consistent winds of North East Brazil have been attracting sailors, windsurfers and kite surfers for years but it is now the turn of wind prospectors”, he explains. “The region has large unpopulated land areas and a huge coastline, making it a prime location to be a potential wind energy giant.”

Combining water and wind

Historically, Brazil has relied heavily on its abundant hydroelectric resources for power generation, with gas-fired thermal power plants as back-up. However a growing realisation of the environmental impact of hydro projects, especially in the Amazon basin, the effect of water shortages, and an electricity demand that is rising by around 7 GW per year meant the country needed to start looking elsewhere for additional power.



EWEA's Chief Operating Officer hits the beach - and the waves



Brazil's wind energy industry is expanding fast



International companies are keen to get involved in wind farms like this one in Ceará state

"Brazil always prided itself on having one of the cleanest energy systems in the world and didn't want to lose that", says Steve Sawyer, Secretary-General of the Global Wind Energy Council (GWEC). "In addition, there was strong lobbying, especially in the north-east, for wind energy development, and of course a huge wind resource. That made it almost a no-brainer to go for wind energy."

What is more, the strong winds which blow during the dry second half of the year perfectly complement the higher production from hydroelectric projects during the wet first half of the year.

Boosting renewables

Initially, renewable energy development in Brazil was supported by the "Programa de Incentivo às Fontes Alternativas de Energia Elétrica" (PROINFA), which was passed by the Brazilian Congress in 2002 with the aim of increasing the share of renewable energy to 10% of Brazil's electricity supply by 2020. This involved stimulating the addition of over 1,100 MW of wind energy capacity (later expanded to 1,400 MW), amongst other measures.

Things got even more exciting in December 2009, when the Brazilian energy regulator, Agência Nacional de Energia Elétrica (ANEEL), hosted the first wind only auction, which contracted 71 wind energy projects for a total capacity

Building an industry – Wobben

Pedro Vial is CEO of Wobben, Enercon's branch in Brazil.

What are your plans for manufacturing in the coming years?

We have two factories in Brazil, in strategic regions (Sorocaba in São Paulo state and Pecém in Ceará state) and we have been prepared for the growth of the wind market in Brazil for the last 15 years. We are ready to attend to the contracts signed at the last auctions and also to add a good amount of MW to our pipeline. If the market grows even faster, our facilities could meet a new demand without big amount of investments and without adjusting the number of employees.

What are your predicted domestic production/installation rates (MW/year) over the coming years?

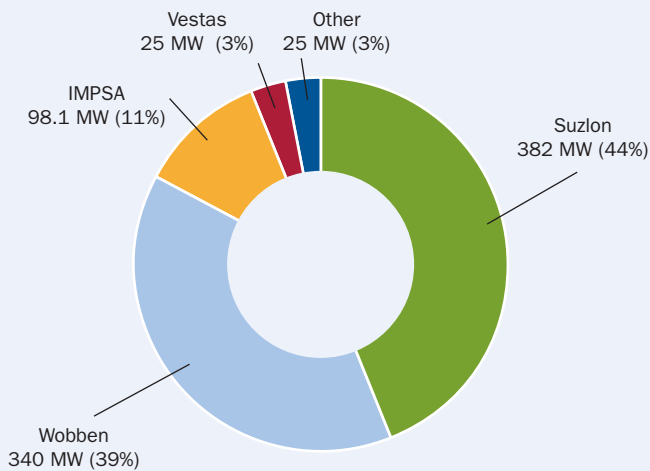
We will add 1 GW by 2013 just with the projects already contracted.

What effect has the national bank's local content requirements had on your plans?

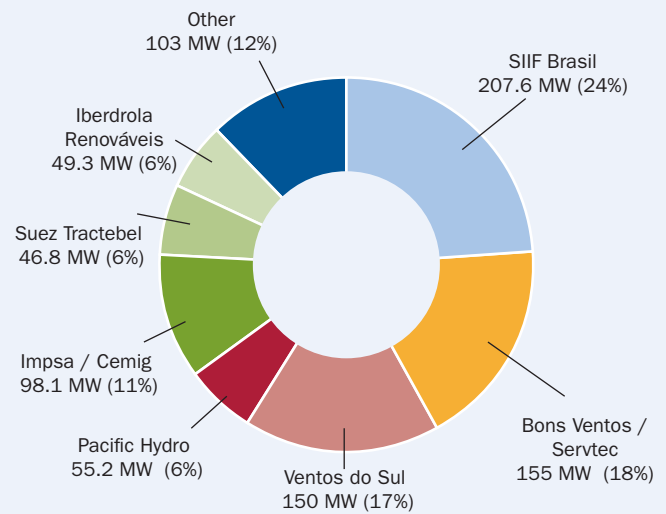
We believe that the policy of the national banks local content requirement is very effective in helping the development of Brazilian wind industry, generating an increase in suppliers, new jobs, and creating a solid scenario for the wind energy business in Brazil.

**By November 2010, Brazil had 865 MW of installed wind energy capacity, and 47 wind farms
Brazil's total wind potential is estimated at over 350,000 MW**

Top manufacturers by installed and operating capacity



Top developers by installed and operating capacity, and pipelines



Graphs: Make Consulting

of 1,800 MW. Two additional auctions took place in August 2010, resulting in more than 3 GW of tendered capacity for September 2013. But without a long-term regulatory framework, it is hard to know whether this is a one-off, or whether these wind-only auctions will become regular. Fernando Pessoa, Director of Renewables for the State of Ceará Development Agency, certainly believes there will be regular federal tenders for wind power of between one and two GW per year at least for the next few years. However, nothing has officially been stated at federal level.

The other major issue surrounding the auction process concerns the pricing. The fierce competition at the auctions resulted in a low average price of \$72/MWh (€53/MWh), which will “only be sustainable because of the phenomenal wind resource in Brazil”, point out specialists Dan Shreve and Brian Gaylord from Make Consulting.

“In the auction, you had some quite inexperienced developers taking part in a race to gain access to wind sites”, says Shreve. “So some of them were quite aggressive in the bids they made. The question is, were they too aggressive?” He believes that a “rebound in pricing” is needed to ensure the participation of experienced vendors.

“Some of the projects from the auction won’t be feasible economically and corners will be cut”, says Sawyer. But he points out that even so, there is now a hefty development pipeline of up to 5,000 MW up to 2014.

Scott Stalica, GE Energy’s Manager of Commercial Operations for the Wind Americas, anticipates some free market activity will start to

take off outside the auction process. “It is natural for developers to start looking for alternative means of securing power purchase agreements”, he says. However he commends the auction process heartily for the activity it has kicked off in the sector, saying “The auctions have shown to be a very effective way to spur renewables and local industry, at a very competitive price for wind energy.”

Certainly, whatever happens in the future, the number of big international players now flocking to the Brazilian industry is going up, showing as the realisation grows that Brazil is a sleeping wind energy giant. While previously only one wind turbine manufacturer, Wobben Windpower, a subsidiary of Enercon, was manufacturing in Brazil for the Brazilian market, many other turbine suppliers have are now planning factories there, including Vestas, Suzlon, GE, Gamesa, Alstom and Fuhrlander.

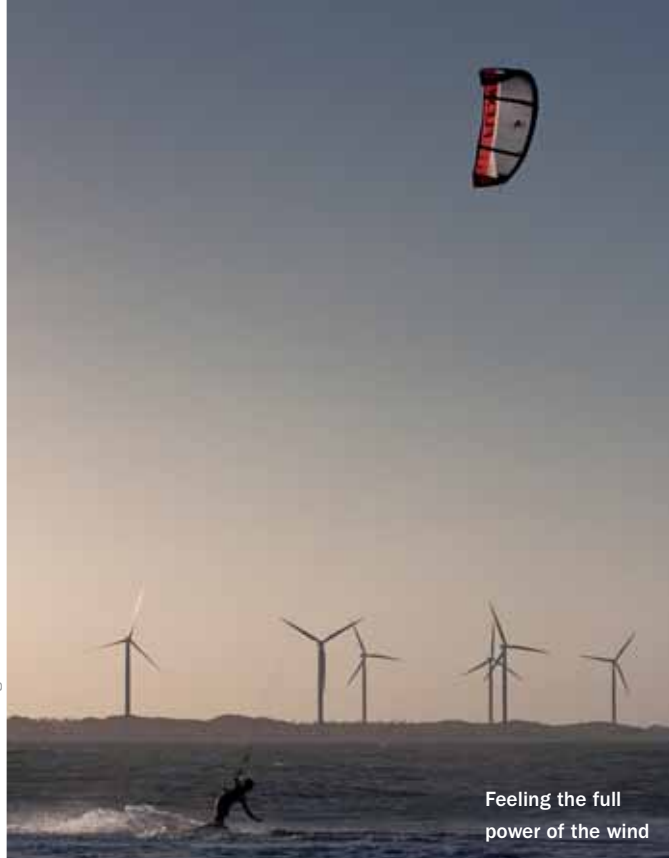
Barring the way

If the Achilles’ heel of Brazil’s booming wind industry is the reliance on wind power auctions rather than a longer-term legislative framework, there are also other obstacles to be overcome.

In such a big country, it was perhaps inevitable that transport and supply would be an issue. Shreve points out that the supply chain in Brazil is not yet fully mature, and that there are logistical bottlenecks concerning cranes to install the turbines, for example. Another crucial issue for Shreve and Gaylord is the near monopoly situation on steel, which is clearly linked to what is known as the national bank’s “local content requirement”.

Continued on p. 34

Photo: James Cummings



Feeling the full power of the wind



Bruce Douglas with the Suzlon maintenance team at the Icarai wind farm

Kite surfing the waves

Bruce Douglas explains his experience kite surfing 300km along the Brazilian coast.

Why did you decide to take this trip?

I had three objectives: to investigate the challenges and opportunities facing the wind industry in north-east Brazil, to take photos of wind farms and to kite surf. I went with eight friends from the UK, all experienced kite surfers, who have been on kite surfing trips to Brazil for the last five years. They have got to know the best spots along the coast and the most efficient way to get there, and I went with them for the first time.

What were your first impressions of Brazil?

We arrived at night, and although it was dark we ventured on to the beach. My first impression was how peaceful it was, how clear the night sky was and how windy it was, even at night. Then as we set off, the landscape quickly got empty of people. It was stunning, and the light was incredible; we saw some amazing sunsets. We were following the beach the whole way, and behind the beach there were kilometres of sand dunes and behind them, the rainforest. We kite surfed past four wind farms on the journey, which were located right next to the beach.

How and where exactly did you travel?

We had a jeep so one of us would be driving along the beach while the others kite surfed down the coast in the waves just next to the beach. We followed the beach almost the whole way, coming inland occasionally to cross rivers and avoid mangrove swamps.



The kite surfers' route north-west

What were the biggest challenges?

Physically, it can be tough spending that amount of time on the water, and after a while the fatigue really builds up. Psychologically, there is always the fear of something going wrong, as you're in the middle of nowhere. But we always kept close together and the person in the jeep kept an eye out. Equipment broke on a few occasions and people had to be dragged ashore by someone else. There were a lot of minor cuts and bruises, but thankfully nothing major. It is the first holiday I have been on where someone has brought an inflatable neck brace - the nearest hospital would be a long and bumpy ride!

Do you want to go back?

Definitely! I've already booked two weeks next year.



Recent wind energy projects have provided computers in schools

“The overly strict environmental rules will contribute to Ceará falling from its number one spot.”

“Brazil’s national bank requires 60% of the turbine (calculated by weight) to be sourced locally in order to allow subsidized financing for a project”, explains Douglas. “This means that most manufacturers produce towers locally to fulfill the requirements, and so there is a run on Brazilian steel. However, the country’s steel market is dominated by a company called Usiminas, which can, to a certain extent, dictate prices”.

Local steel costs around 70% more than imported steel.

Another issue that particularly affects Ceará state are the strict environmental license requirements. The state’s federal prosecutor has gone beyond the national regulations used elsewhere, introducing additional and stricter conditions, which add unnecessary insecurity to the project and cost more to fulfill.

“The overly strict and uncertain environmental rules are one of the main reasons that the state of Ceará will fall from its present number one spot for installed wind capacity to fourth position over the coming years”, believes Lauro Fiuza, President of Brazilian developer, Servtec, and Vice President of the Brazilian Wind Energy Association. He stresses that “The state prosecutor must not be allowed to

interfere as much in the licensing procedure. The state governor must step in to simplify and stabilise the rule in order to seize the opportunity presented by some of the best wind resources in the world.”

The question is already being addressed. “A new streamlined methodology and zoning plan are being developed in consultation with industry and the state prosecutor,” explains Pessoa. The methodology and plan were due to be presented to the environment secretary by the end of 2010, so any fruit they bear may take a while to ripen.

Other possible issues concern high import duties of around 14%, complex internal taxes between different states, and the need – not unfamiliar to the European wind energy industry – for further development of electricity infrastructure.

Another problem that often rears its head in any country with wind farms is public acceptance, particularly in areas where citizens are unfamiliar with wind energy. Various surveys reveal that as soon as communities experience living within sight of a wind farm, their support shoots up from already high to almost 100%. But in Brazil, where wind turbines are a newer phenomenon, such familiarity is less likely.

Armando Abreu is CEO of Brazilian consultancy Braselco. He highlights that regular discussions take place between developers and local community so that the local people can reap some of the benefits of wind energy. Recent projects have provided schools with computer lessons, roads, a refurbished church and a doctor two days a week to communities – tangible improvements to the social welfare of isolated settlements. And Maria Tereza Cunha Meirless, Marketing and Communications Coordinator at Suzlon, explains that the company runs education programmes in the municipal schools close to the wind farms, providing information on the wind farms and explaining why they are needed.

Across the pond and beyond

Despite the wrinkles – thick and thin – still waiting to be ironed out, the growing number of international companies looking for a slice of the Brazilian market is a sure sign of its huge potential.

Tulsi Tanti, owner and chairman of Suzlon, which is planning to build its own blade factory in Ceará next year, met up with Bruce Douglas in Fortaleza. He said: “Although we are the leading manufacturer in Brazil at the moment with 47% of all installations we expect to lose market share in the coming years as other manufacturers enter the market. However, we predict that the overall market growth will provide us with increasing levels of orders.”

The wind auctions are proof of this increasing diversity, especially within the project developers: two-thirds of the wind projects contracted belong to developers that had not participated in previous PROINFA auctions in 2004. But with more

Building an industry – GE Energy

Scott Stalica is the Manager of Commercial Operations for Wind Americas at GE Energy.

What are your plans for manufacturing/factories in the coming years?

We’ve received just over 1 GW of capacity commitment in Brazil for turbine supply. Just over 400 MW of this is from the auction of December 2009.

What are your predicted domestic production/installation rates (MW/year) over the coming years?

In 2011 we expect to install 150-200 MW, and 2012 will be a huge year for us – we expect to install around 600-700 MW in 2012.

What effect has the national bank’s local content requirements had on your plans?

Our blades are manufactured in Brazil, as are towers and hubs. We do import the nacelles. The local content requirement driven by financing does not make the turbines low-cost, but the competitiveness of BNDES’s financing is still very attractive to developers.

and more companies setting up in Brazil, could the country actually start exporting turbines?

Pedro Vial, CEO of Wobben Windpower, says that their focus is now the Brazilian market. "Export turbines and components were an alternative during the last years when the Brazilian market was small", he says.

Arthur Lavieri, President of Suzlon Brazil, explains that their forthcoming blade factory, "will allow us to quickly serve customers in selected markets in Latin America, the United States and Canada. The factory will be built with that in mind." Yet to start with, they will be dealing with demand at home. "We believe the factory will be busy in serving Brazilian customers in the first two years," he says.

What about Brazilian manufacturers? Some components are already being made by local manufacturers. Companies like Tecsis, which produces blades, are already established, and there is even now a Brazilian wind turbine manufacturer, Renobrax, which now started up. Yet it is the European and North American companies who are really ramping up production in Brazil.

Building an industry – Suzlon

Arthur Lavieri is President of Suzlon Energia Eólica do Brasil.

What are your plans for manufacturing/factories in the coming years?

We have already announced the building of a blade factory in Ceará State, Brazil. We plan to invest up to BRL 30 million (€12.7 mn) and employ up to 200 people directly. Capacity will go up - in steps - to 600 blades per year. The factory shall start serial production in the first quarter of 2012 at the latest.

What are your predicted domestic production/installation rates (MW/year) over the coming years?

Today, Suzlon enjoys a 47% capacity share in the market. As the market grows, Suzlon plans to work in the 30 to 40% market share range. Suzlon is structured to install 500 – 600 MW a year in Brazil.

What effect has the national bank's local content requirements had on your plans?

The local content finance terms incentive given by the bank is for sure an advantage for our local customers. By increasing the local content in value and weight, Suzlon is better serving them, while fulfilling one of its core objectives of creating sustainable value in the countries we do business in.

Politalk

What happened at Brazil's recent presidential elections?

Dilma Rousseff from Brazil's Workers' Party was elected to be the first female president of the world's eighth biggest economy.

What impact will this have on the country's wind energy industry?

This should have little impact on the prospects for wind energy. Rousseff's approach, especially on energy issues, is expected to be business as usual, not least because she was the handpicked successor to the hugely popular outgoing President Luis Inácio Lula da Silva and was his former energy minister. It is the outcome of the State elections, with their power over environmental and planning rules, and the decision on future auctions that will have more effect.

"The enthusiasm with which international manufacturers have leapt in reflects the fact that the EU market is really tight right now and the US a mess," says Sawyer. "The Spanish companies have seen their market dry up and want to establish new markets. For these companies, Brazil can become the fourth leg of the table – Europe, North America, China and Brazil".

Long distance thinking

Given manufacturers and developers have such enthusiasm for its potential, and given the impressive growth in the last couple of years, what is the outlook for the South American giant? Pedro Vial and Scott Stalica believe 2 GW of wind energy could be added in a yearly auction for the next eight to ten years provided there is no change of direction, and Lavieri also says that "Brazil is well prepared for 2-3 GW annual auctions and this could even grow above 4 GW with the proper adjustments the country needs in regards to infrastructure and steel prices."

Sawyer is more cautious, underlining that although Brazil has massive potential, "the government has refused to commit" [to a yearly auction], which means "the long-term signal is missing".

Douglas agrees that "The low off-take prices in recent tenders and the lack of any long term policy drivers could potentially hamper development. However, the fact that numerous large industrial and utility players are now seriously committed to developing the Brazilian market has increased investor confidence and makes it more likely that projects will actually get built".

Overall, it seems clear that as for other industries, Brazil is likely to become a world player for wind energy, providing a hugely important platform for Europe's companies to grow and build up their portfolios. All that is needed in order to ensure that the possible future "fourth leg of the table", in Sawyer's words, is truly sturdy and durable, would be to reinforce it with the vital missing nail: a long-term legislative framework. ■



With a local member of the Suzlon team

"Many large players are seriously committed to developing the Brazilian market."

From a van to a jumbo jet



Photo: GWEC

Sarah Bryce from the Global Wind Energy Council reports on an exciting and growing Brazilian event.

There was a real sense of excitement and anticipation at the Brazil Windpower 2010 conference and exhibition, held last 31 August to 2 September, in Rio de Janeiro. There was a palpable sense of momentum, even an expectation that the fledgling wind market in Brazil was about to take off. This first event of its kind in Latin America was oversubscribed and to everyone's surprise ended up with nearly 2,000 visitors, spurring Brazilian energy minister Marco Zimmerman to joke "If you had held this event three years ago, you could probably have fitted it into a van," during the conference opening session.

With just 606 MW installed in Brazil at the end of 2009, the Brazilian market is still small, and the event had the feeling of an intimate gathering of industry insiders. I imagine that the early European Wind Energy Association conferences in the 1990's had the same feel, with a mix of academics, business people and engineers who knew that they had found something really great.

There is now a real chance that wind power in Brazil can begin to fulfill its huge potential. The government has long been committed to renewable energy, with over 85% of the current electricity mix coming from renewables (mostly hydro), and there is already a strong industrial base. Nonetheless, the market has had false

starts in the past. By a lucky twist of fate, Brazil Windpower 2010 took place just days after the third wind auction in a year and a half. Since December 2009 more than 3,850 MW of wind power has been contracted, spread across 141 projects. As other markets such as the US are slowing, international players are looking to position themselves in the exciting Brazilian wind market. These factors combined to create the perfect conditions for a flourishing conference and exhibition. All of the major international companies were at Brazil Windpower 2010, eager to make their mark early.

The international interest in the conference was fantastic, with excellent high level speakers from the International Finance Corporation (IFC), the Inter-American Development Bank (IDB), consultancies such as EER and MAKE, not to mention journalists from all of the major trade publications.

In addition to international industry, those who have been engaged in the climate and energy debate in Brazil for years took part, including academics and Greenpeace Brazil. With its traditional reliance on hydro for most of its electricity, other renewables in the power sector haven't got much attention in Brazil. But with hydro resources impacted by climate change as well as reaching their limits, the spectre of a new generation of coal, gas and diesel generators in the market has galvanized Brazilian pride in its clean electricity grid in support of wind power. At Brazil Windpower 2010 the session on the environmental benefits of wind power development was one of the most well attended. Overall, the calibre of the one hundred people on the speakers list at the conference would match that at any national event in Europe.

The focus of the conference was on setting the right ground work to enable the Brazilian market to quickly reach its full potential, with sessions on building up the supply chain, operations and maintenance, and different PPA models for the future. While there were conference sessions and representatives from other countries in the region, namely Mexico, Peru, Uruguay and Chile, the exhibition attendees and conference delegates were focused firmly on Brazil, which everyone expects to be the base from which wind power can spread throughout the region.

Brazil Windpower 2011 will be held from 31 August – 2 September 2011, in Rio de Janeiro, Brazil. ■

More information: www.brazilwindpower.org.



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ORGANISING SECRETARY

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Plot No. 44, Hindustan Estates, Road No.2, Kalyani Nagar, Pune 411 006, India

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Wind Worker

Meeting some of the over 200,000 people who make the European wind industry tick.

By Sarah Azau

Martin Mortensen, commissioning engineer, Suzlon



Photo: Suzlon

“At the beginning we were doing maintenance on turbines built by blacksmiths. Now there is a whole modern wind energy industry.”

What does your job involve?

My job involves commissioning turbines and troubleshooting any issues. It can also involve managing smaller projects. It's a wide job description!

How long have you been in the wind energy industry?

For about eleven years. I started off working for NEG Micon, a former Danish company. Then I worked for Vestas for almost eight years, and now I've been with Suzlon for almost three years. For the first eight years, I was working in service departments, but then my kids were older so I wanted to try something new. I knew some guys at Suzlon and asked if anything was going, and here I am.

What does a typical day involve?

There's really no such thing as a typical day for me! Part of my job consists of starting up the new installed turbines and running tests on them prior to the hand-over to the client. In addition I do update work – known as TCI, which stands for technical change instruction - and train up service

staff, passing on my knowledge to the service guys so they can carry on doing the maintenance after our project team has left the site. I also do different kinds of office work.

How much time do you spend on-site?

I'm based in Aarhus in Denmark, and in accordance with my contract I work two months out and two weeks in the office, so I'm on-site quite a lot. Last year I was out of Denmark for 271 days! We're not installing any turbines in Denmark at the moment, so when I'm at a wind farm I'm abroad.

Where are you travelling most to at the moment?

Well recently I was in Sweden, and now [November 2010, ed.] I'm in Romania for four weeks working on turbine upgrades.

Do you work in teams?

Right now I'm in Romania with my colleague Ole Jensen to do TCI work. We just arrived from Sweden where we did commissioning work, but last time I was on site in Romania I led a project for the tower department for two and a half months. The number of people depends on the type of work we have to do and the size and the type of project.

“What's exciting about the wind energy industry is that products develop very fast. So it's a very exciting place to work.”

You talk about enjoying troubleshooting and seeing products improve. Which particular areas of the technology have you seen develop the most over your 11 years in the industry?

I remember when I started, there was a 900 kW machine which seemed huge. Everyone was saying “Wow! We won't be able to get any bigger than that!” Now of

course at Suzlon we have a 2.1 MW turbine, and when I was at Vestas there was the 3 MW turbine.

Also, at the beginning we were doing lots of maintenance on smaller, older turbines which were built by blacksmiths. Now there is a whole wind energy industry employing a wide range of professionals working with modern, large machines.

What is your favourite part of the job?

I really like the fact that you never know what the day will bring; I also like training people and doing the troubleshooting – identifying problems and improving the product is very satisfying. What's exciting about the wind energy industry is that products develop very fast – in that way it's like the car industry. So it's a very exciting place to work.

Do you have a least favourite part of the job?

Yes – it's when my kids have birthdays and I can't be there. Then it can be hard... but luckily Skype is a wonderful thing!



Mortensen recently worked on these turbines in Assjö, Sweden

Photo: Suzlon

Claus Pedersen, assistant site manager, Siemens

What does your job involve?

My current job is working as an assistant site manager on the offshore wind power plant Rødsand 2, which is in Danish waters. This involves various tasks such as planning 500 hours service as well as yearly service on the turbines, getting the different retrofits done, taking action on safety alerts, planning who is to do what.

If a turbine stops, I need to find out what is wrong and identify which spare parts we need to fix it. I also order spare parts together with the stock keeper, make boat transfer plans and find out how many boats we need the next day.

I constantly have to keep an eye on the weather - if the waves are too high, it is going to be a bad weather day off. And sometimes I also

have safety meetings with the client, and report to the client with checklists on the turbines.

How long have you been in the wind energy industry?

I started as a technician two years ago, on Horns Rev 2. I worked as a technician until February 2010, then as an assistant site manager on Horns Rev 2 until November, and now I'm working as an assistant site manager here on Rødsand 2. I work one week, then have one week off.

What first attracted me to the sector was the thought of working offshore. Moreover, I thought that wind turbines would be an interesting choice. And since I have always worked as a technician, in different companies, the opportunity to try a job which would be mostly based in the office sounded interesting.

"I constantly have to keep an eye on the weather."

What does a typical day involve?

For me, a typical day starts one hour before the technicians show up, finding out whether all the turbines are running, finding the parts and tools the technicians need, and then sending them off to the various sites. I then support them by giving advice and whatever they need during the day, to keep the turbines running.

What is your favourite and least favourite part of the job?

The best part of my job is when things are going as planned, and when all turbines are running when the technicians are back onshore. Plus working one week on and one week off is nice.

The least favourite part would be when the turbines aren't running, because that means there is a problem to deal with. ■

Photo: Siemens



Claus Pedersen



Opening up the market

Photo: Digital Vision

To benefit fully from clean renewables and wean ourselves off fuel imports, Europe needs a single market to allow electricity to be traded across borders.

By Chris Rose

It doesn't garner the attention of the financial crisis in Ireland and Greece, last year's flooding along the Danube River, or the death of 1,200 Parisians in the 2003 heat wave, but Europe's long-overdue need for a single energy market has all the ingredients of becoming the key to the region's next four decades of development.

Driven by concerns regarding climate change, paying escalating costs for expensive and non-dependable imported fossil fuels, and trying to make the necessary transition to a green economy based on wind power and other renewables, Europe's politicians have to decide sometime this year which energy path to follow.

While the European Union did adopt its third energy package last year in an attempt to open the sector to increased competition as a way of paving the way to a fully-functioning single market, many observers have said that the package did not go far enough to fully take advantage of the region's considerable renewable energies.

According to the European Commission and others, the usual overly-cautious, business-as-usual, patchwork approach to providing electricity and other forms of energy to the EU's citizens is not only no longer feasible, it is damaged beyond repair.

Instead, if Europe wants to remain a prosperous global leader in this century's industrial revolution it needs to quickly agree on an exceedingly ambitious plan to develop and transmit increasing amounts of energy swiftly and competitively across the region.

It will require vast investments, be challenging and take at least a decade, experts say, but a modern Europe with a historical appreciation of the vast importance of energy usage has repeatedly proven itself up to just such a formidable challenge — and there really is no other choice.

That reality, or warning, was presented by the European Commission on 17 November with the release of its plan for an integrated European energy network — “Energy infrastructure priorities for 2020 and beyond.”

“Europe's energy infrastructure is the central nervous system of our economy,” the communication noted. “EU energy policy goals, as well as the Europe 2020 economic aims, will not be achievable without a major shift in the way European infrastructure is developed. Rebuilding our energy system for a low-carbon future is not just a task for the energy industry.

“Technological improvements, greater efficiencies, resilience to a changing climate and new flexibility

“The business-as-usual approach to providing electricity is damaged beyond repair.”

will be necessary. This is not a task which a single Member State can achieve on its own. A European strategy, and funding, will be necessary.”

The 46-page plan said developing a reliable internal energy market — with an updated grid system and shared market rules — will promote enhanced security of supply, the integration of renewable energy sources and increased energy efficiency as well as benefitting consumers.

Noting that the EU “pays the price for its outdated and poorly interconnected energy infrastructure,” the plan says about €1 trillion must be invested in Europe’s energy system by 2020 in order to meet energy policy objectives and climate goals. About half of that total will be required for networks, including electricity and gas distribution and transmission, storage, and smart grids, the plan said, adding approximately €200 bn are needed for energy transmission networks alone.

“Energy infrastructure is key to all our energy goals: from security of supply, the integration of renewable energy sources and energy efficiency to the proper functioning of the internal market,” Energy Commissioner Günther Oettinger said. “It is therefore essential that we pull together our resources and accelerate the realisation of EU priority projects.”



Today's EU was born
in the ruins of a
destroyed Europe

The foundations of modern Europe

From the ash-covered bombshells of two disastrous wars in three decades, a modern and somewhat unified Europe first began to emerge 60 years ago with the formation of the six-nation European Coal and Steel Community.

Exhausted by two World Wars, and under the shadow of an emerging Cold War, France, West Germany, the Netherlands, Belgium, Luxembourg and Italy agreed to forge a common and cooperative energy market for coal and steel.

Signed on 18 April 1951, the so-called “supranational” Treaty of Paris established the European Coal and Steel Community and set in motion the idea of sharing the resources that were used in war and were so urgently needed to rebuild a badly-damaged Europe.

Perhaps unimaginable at the time, the treaty also laid the foundation for today’s 27-member European Union, the world’s largest trading bloc and home at the beginning of 2010 to an estimated 501 million people.

Six years later, the same six nations signed the Treaties of Rome which established the European Atomic Energy Community and the European Economic Community, setting the eventual stage for the formation of the EU.

The next major amendment of the Treaties of Rome occurred in February 1986, with an agreement on the Single European Act (SEA) which had as its objective the creation of an effective common internal market based on the so-called four freedoms — the free movement throughout Europe of goods, services, people and capital.

Today, 25 years after policy makers agreed to the SEA, Europe has been largely transformed into the successful entity we experience in our daily lives.

Jacques Delors, European Commission president from 1985 until 1994, was significantly involved in promoting the SEA and is known as one of the “founding fathers” of Europe.

After leaving the Commission, Delors started Notre Europe, a thinktank that focuses on visions for a unified region; democracy in action; cooperation, competition and solidarity; and Europe’s role in world governance.

Today one of the subjects that captures Delors’ attention is the need for Europe to have an effective, fair and pan-European common energy system. In April, Notre Europe published a report on the future of European energy policy: “Towards a European energy community: a policy proposal.”

In the report’s preamble, Delors noted that Europe faces “an energy crisis, with human activity consuming more resources than nature can provide; an environmental crisis, with climate change calling for a radical shift in the way we produce and consume energy; and an economic and financial crisis that limits our ability to find solutions quickly.”



Delors added, however, that the crises also present opportunities.

“The development of alternative, sustainable energy sources and green technologies is the key to a new industrial revolution based on sustainable

development and new technologies that will help us emerge from the economic crisis,” he wrote. “Will Europe choose to play a pro-active role in

“The development of sustainable energy sources is key to a new industrial revolution.”

“The EU is still struggling to develop a common energy supply.”

the next industrial revolution, or will it be content to follow the lead set by others?”

Delors said Europe requires a common energy policy so that it can “guarantee access for its citizens to energy at reasonable and stable prices; to maintain its industrial competitiveness; to promote sustainable development and the transition to a low-carbon society; and to ensure security of energy supply for all Europeans.”

He added that the EU is still struggling to develop a common energy supply. The report found that Europe’s existing energy policies are inadequate, resulting in fragmentation and inefficiency.

“When six European states decided in 1951 to integrate two key sectors of their economies to create a Community, their purpose was to replace conflict with cooperation and antagonism with prosperity. Energy was one of the sectors, and almost sixty years later, energy is still at the top of the political and economic agenda,” the report’s introduction noted.

“However, the rules that ensured equal access to common resources no longer exist. Despite increased regulatory activity, Europe has lost its ability to pursue a truly common policy covering the three objectives that are essential to energy policy today: affordable access to energy; sustainable development of energy production, transport, and consumption; and security of supply.”

The report says that a future robust energy policy for Europe should include a well functioning internal energy market, an integrated smart network that supports the internal market while helping Europe achieve its sustainability and security of supply objectives; price stabilisation measures and a diversified energy portfolio through stimulated innovation (R&D) and the use of renewable energy.

In its conclusion, the report proposes moving towards a new European Energy Community that would promote the integration of energy markets for the benefit of the region’s citizens. “Freedom from energy insecurity reduces the seeds of conflict,” the report said. “And peace is what Europe is all about.”

Understanding the problem; moving towards a solution

In early May, Jerzy Buzek, President of the European Parliament, and Delors adopted a Declaration on the creation of a European Energy Community.

“Existing policies — to liberalise energy supply, improve energy interconnection and protect the environment — have been successful and

continue to have an important role to play, but they are not enough,” the declaration said.

“This is a multifaceted problem whose scale requires a bolder new approach, based on more ambitious goals and deeper integration. A unique challenge requires a unique response. We believe that the next chapter in the history of European integration has to involve the creation of a European Energy Community, a new EEC.”

The declaration also said Europe needs to have region-wide upgraded energy networks with greater reliance on renewable energies.

“In the long term, if we are faced with a major energy crisis, common strategic reserves must be available, and managed throughout the continent in a spirit of solidarity,” the declaration said. “Europe cannot afford to wait indefinitely, if its citizens are to continue to believe in the European ideal.”

The declaration sparked a two-day joint parliamentary meeting in Brussels in early June. It also helped keep the idea of a single energy market — with renewable sources of energy a major priority

— at the top of the agenda for bureaucrats and journalists.

European Commission President José Manuel Barroso told policy makers last year that Europe needs “to complete the internal market of energy, build and interconnect energy grids, and ensure energy security and solidarity.”

He said the region needs to “make frontiers irrelevant for pipelines or power cables” and have

the proper infrastructure to handle wind power and other renewables. The internal market is “Europe’s greatest asset, and we are not using it enough. We need to deepen it urgently,” Barroso stated.

Promoting the free movement of energy

The Commission President’s call to action is similar to the opinion of Christian Kjaer, EWEA’s CEO.

“Given the international nature of the energy challenges that the EU is facing, it is astounding that a quarter of a century after the Single European Act was signed — establishing the free movement of goods, services, capital and labour between Europe’s nations — we still do not have an internal market for electricity,” Kjaer said.

“Europe’s current electricity supply structure still bears the characteristics of the time in which it was developed. It is national in nature, the technologies are ageing and the markets supporting it are underdeveloped.”

“We urgently need to establish a fifth freedom within Europe: the free movement of energy across borders,” he said.

“Europe cannot afford to wait indefinitely, if its citizens are to continue to believe in the European ideal.”



Christian Kjaer

For Kjaer, pushing for the streamlined movement of electricity across Europe at the flick of a switch makes a lot of sense — both now and in the future.

Kjaer says discussions on how the European energy

system should look in 2050 have to be linked with political actions needed this decade to prepare for such a dramatic overhaul of the region's energy supply structure.

Kjaer notes that the EU countries' agreement to cut emissions by 80% in 2050 and by 95% if other countries sign up to similar action means that the power sector will need to be 100% carbon-free by mid-century. The residual emissions would be needed for other activities than power production such as agriculture and transport.

He points out that — given the long lifetime of power plants — the 2050 commitments require that no carbon-emitting power plant can be constructed in the EU after 2020.

"We must use the next 10 years to completely overhaul the way electricity is produced, transmitted and consumed in Europe," he said, adding the creation of a modern, Europe-wide grid must be a priority for the EU, its Member States, and the electricity system operators.

"This will allow for the integration of larger amounts of onshore and offshore wind power, improved security of energy supply, more affordable electricity at predictable cost, and a reduction in Europe's dependence on imported and polluting fossil fuels."

Kjaer also said that emissions-free wind power is Europe's leading renewable energy and — in addition to mitigating climate change and helping fuel a new green economy — could meet up to one-fifth of the EU's electricity demand in 2020, one-third in 2030 and one-half by 2050.

To address this issue, EWEA released a new 180 page report at its GRIDS 2010 conference in Berlin in November.

Called "Powering Europe: wind energy and the electricity grid", the report found that the region's antiquated and inefficient grid systems are the main bottleneck to Europe achieving its 2020 targets in a cost-effective manner.

Paul Wilczek, Regulatory Affairs Advisor for EWEA and one of the report's contributing authors, said that the capacity of the European power systems to absorb significant amounts of wind power is determined more by economics and regulatory frameworks than by technical or practical constraints.

"It is harder to add larger amounts of wind power to the grid not because of the wind's variability, but because of inadequate infrastructure and interconnection, as well as electricity markets where competition is neither effective nor fair," Wilczek said.

He said policy makers have to build a suitable regulatory framework and enforce the framework once it's in place in order to trigger the actual grid investments as well as enabling the efficient use of the infrastructure.

Frauke Thies, from Greenpeace in Brussels,



Frauke Thies

says Europe's power system is outdated and about half of the current electricity generation capacity will have to be replaced over the next decade.

"The time for decisions is now," Thies said, adding the urgency of climate change and

the need for secure energy supplies leave no room for delays.

"Will the necessary investments go into a clean and reliable power system that is based on renewable sources and a modern grid? Or will European power producers cling on to last-century power technologies like nuclear and coal, which stand in a way of a clean and flexible renewable future?"

Thies believes today's power markets are still distorted by the lack of full ownership unbundling, outdated market rules and a fragmented grid system that cause economic and technical inefficiencies thereby standing in the way of the optimal renewable energy integration.

"An integrated European approach is necessary to identify critical power lines and create the appropriate investment conditions for infrastructure investments and cross-border electricity trade," she said, noting major restructuring and investments have to take place. "It's a continuous development, but it has to go fast, and it has to start today."

"It is harder to add larger amounts of wind power to the grid because of inadequate infrastructure and inter-connection."

"We must completely overhaul the way electricity is produced, transmitted and consumed."

“Transmission lines are not built because costs and benefits are asymmetrically distributed across borders.”

Saying goodbye to fossil fuels

Georg Zachmann — a research fellow at Bruegel, a Brussels-based think tank on economic policy — is also promoting a functioning European single electricity market.

In a June policy brief called “Power to the People of Europe”, Zachmann said a growing share of wind power, among other things, has put increased pressure on the region’s aging networks.

“In addition, electricity systems operate at national level while the physical network is international,” he said.

“Consequently, at certain borders, almost half of the electricity flows from high to low price areas, and urgently needed transmission lines are not built because costs and benefits are asymmetrically distributed across borders. Current cautious plans for more international network planning and better coordination of national markets will not tap the full efficiency potential.”

Zachmann added that available transmission capacity must be increased and the operation of existing networks and power plants must be improved if a single electricity market is to be created.

“The energy challenge is one of the greatest tests for us all,” Energy Commissioner Günther Oettinger acknowledged in November after the European Commission presented its new strategy for a competitive, sustainable and secure energy policy.

In a communication called “Energy 2020”, the Commission identified five top priorities: achieving an energy efficient Europe; building a truly pan-European integrated energy market; empowering consumers and achieving the highest level of safety and security; extending Europe’s leadership in energy technology and innovation; and strengthening the external dimension of the EU energy market.

That communication sets the agenda for the discussion by Heads of States and Governments at the very first EU Summit on Energy on 4 February 2011. Herman Van Rompuy, the president of the European Council, was scheduled to host that summit meeting.

The communication, which EWEA heartily endorsed, will also allow the Commission to present concrete legislative initiatives and proposals within the next 18 months.

Both the communication and the goal of creating a fully functioning single energy market dovetails with Europe’s economic and climate change policies — especially its 2020 goals of reducing greenhouse gases by at least 20% over 1990 levels; improving energy efficiency by 20%; and increasing the share of renewables to 20%.

“The price of failure is too high,” opens the communication.

Although not directly related to the establishment of a single electricity market for Europe, the International Energy Agency’s 2010 World Energy Outlook, released in early November, presented some alarming findings for politicians reluctant to fully embrace a new green economy based on emissions-free wind power and other renewables.

To the chagrin of those seeking to retain the non-sustainable business-as-usual approach to fossil fuels, the IEA report should also help stamp out the myth that renewable energies are dependent on subsidies.

The report found that fossil-fuel subsidies amounted to \$312 billion in 2009 where as government intervention in support of renewables totaled only \$57 billion.

That prompted Kjaer to point out that renewables got just \$1 for every \$5 to \$6 given to fossil fuels last year.

“In this time of budgetary constraints, governments would be wise to remove the billions of dollars spent in subsidising fossil fuels as well as nuclear,” Kjaer said.

“That in turn would mean less subsidies would be needed to bring in new, smarter and cleaner energy technologies such as wind power.”

Those statistics also caught the attention of Nobuo Tanaka, IEA Executive Director.

“The energy world is facing unprecedented uncertainty”, said Tanaka at the launch of the report. “We need to use energy more efficiently and we need to wean ourselves off fossil fuels by adopting technologies that leave a much smaller carbon footprint”.

The idea of a single energy market recently caught the eye of The Economist, which agreed it would be good for consumers, the environment and energy security.

“Oil and gas are being drained from under the North Sea,” the magazine said in November. “But its time as Europe’s energy reservoir is not over. Along its shores and on its waters, thousands of turbines are being built to harness the winds.”

The magazine went on to say that “this offshore grid is the germ of a big dream: a Europe-wide system of electricity highways.”

Referring to the fact the “European Union was born from a move to pool energy sources in 1951 in the European Coal and Steel Community,” the magazine added that advocates of a single market are today inspired by energy efficiencies, cost savings, security of energy supply and a desire for greener energy.

Recent wind power statistics point to a rapidly expanding industry — and the need to have a properly functioning single energy market with future “electricity highways.”



Europe is at an energy crossroads. Will it choose to liberate the market?

Photo: iStockphoto

Those superhighways are already overdue. For the second year in a row, more new wind power capacity was installed in the EU in 2009 than any other electricity-generating technology. Last year 10,163 MW of wind power capacity were installed across the European Union — a 23% increase compared to 2008 installations. By the end of 2009, the EU had a total of 74,767 MW of installed wind power.

A plan by the European wind energy sector that was partially funded by the European Commission found that continuing development of the industry coupled with support from governments should mean that by 2020 installed capacity could reach 230 GW, with 40 GW offshore.

In 2020, wind energy could represent 20% of EU electricity consumption. A decade later, the capacity installed could reach 400 GW with wind energy representing 33% of EU electricity consumption. By 2050, wind energy could provide 50% of the electricity consumed in the EU.

Standing at the crossroads

What is becoming ever more clear is that the world is already beginning to undergo a massive shift in how it develops and uses energy.

Economists, historians, journalists and environmentalists tell us on a daily basis that nations and regions that are at the forefront of this global metamorphosis will become the first to prosper.

Adding additional pressure to solving problems associated with climate change mitigation,

improved energy security and a new green economy is the long and threatening shadow of

continued population growth. Policy makers have long known that while today's global population is estimated at 6.8 billion, it is expected to grow to more than 9 billion by mid-century.

In addition, much of the world's future population will come from developing economies with emerging middle classes which means electricity and other energy

systems will become even more over-loaded than today.

Everything considered, creating a single energy market for Europe seems logical and necessary despite the expense and national self-interests involved. Increasingly, there is strong consensus about unleashing the tremendous potential of having a state-of-the-art, dependable and affordable electrical system, one that is coupled with a transparent and fair single electricity market, drive the entire region to greater glory and greater security.

Squeezed between China and other Asian nations flexing their growing economic muscles and the US, which is once again retreating into its default position of denial about climate change, Europe, with all its imperfections, has a chance to seize the day.

This next year may well tell whether our politicians are up to that monumental challenge. Delay, fear and equivocation no longer count. All of Europe, including the policy makers' children and grandchildren, will be watching. ■

For more on the single energy market, see the Last Word, p. 58

“This offshore grid is the germ of a big dream: a Europe-wide system of electricity highways.”

Zooming in on the “infrastructure package”

In order to create a proper market for energy inside Europe, bringing down prices and boosting the security of the energy supply, and to increase the amount of wind power that can be transported to consumers, a fully connected European and offshore grid is essential.

By Sarah Azau

In November last year, the European Commission took a major step to address the single energy market issue, releasing a communication setting out ways to build an integrated European energy network.

The communication, “Energy infrastructure priorities for 2020 and beyond”, covers several crucial areas for the renewable energy industry. Below, we examine what the communication says and EWEA’s Policy Director, Justin Wilkes, explains why it matters.

What does the “infrastructure package” say?

Integrated grids

The communication recognises the importance of integrated power grids for Europe’s energy policy goals. It also says that “realising all needed investments in transmission infrastructure would create an additional 775,000 jobs during the period 2011-2020 and add €19 bn to the EU’s GDP by 2020, as well as boosting EU competitiveness and worldwide technological leadership.”

Wilkes says: “The European Commission has acknowledged the fundamental role electricity grids play in meeting EU energy and climate policy targets such as liberalising the energy market and increasing the amount of renewables in the system.”

Electricity corridors

It identifies which grid corridors must be developed as a priority to help integrate more renewable energy.

Wilkes says: “The European Commission has correctly identified the areas, such as the offshore grid in the northern Seas and the completion of the plan to integrate the Baltic states into the European grid, which are a priority to bring more wind power online and open up the European energy market”.

Renewable energy

It says Europe’s grid operators must take the Member States’ renewable energy plans into account in their outline of planned new grid infrastructure (known as the ten year network development plan, or “TYNDP”).

Wilkes says: “The grid operators need to count the Member States’ plans for renewables in the TYNDP, or they will not produce a clear picture of the grid development needed”.

Electricity highways

It highlights the importance of future electricity ‘highways’ and proposes that the grid operators produce a plan to enable the commissioning of the first highways by 2020.

Wilkes says: “These ‘highways’, which will be able to transport much greater loads, are essential for coping



Photo: EWEA, Jason Bickley

with the increasingly flexible and decentralised electricity supply linked to more renewables”.

Offshore grid

It stresses the importance of building the offshore grid in the Northern and Baltic Seas and the importance of countries working together.

Wilkes says: “The offshore grid will allow Europe to harness its largest domestic energy resource, offshore wind, and international cooperation will make the development process quicker and easier”.

Permitting procedures

It suggests ways to streamline the administrative procedures involved in getting permits to build new grid infrastructure.

Wilkes says: “Permitting must become easier and more transparent so it takes less time to build a better interconnected grid”.

Financing

The communication says that about €200 billion is needed for energy transmission networks. An internal energy market will boost private sector investment in energy infrastructure. A legislative proposal will be made to address the cost allocation of cross-border projects.

Wilkes says: “Cross-border infrastructure must be valued according to its benefits to society, for example the benefits to the environment and the economy of being able to bring more renewable energy online”. ■

The communication is available to read at <http://ec.europa.eu/energy>



The infrastructure package should help develop Europe’s grids

Photo: Thinkstock

EWEA Events: The Winning Formula



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www.ewea.org/events

EWEA events:

high quality conference + targeted exhibition + unique networking opportunities = the winning formula

The industry is still growing rapidly, creating exciting opportunities for new and existing businesses. Year after year, the European Wind Energy Association, EWEA, continues to serve the wind industry with the most valuable

and professionally organised events in Europe. The success of EWEA events mirrors the booming wind industry and they are considered "un-missable" for any business serious about its future in the wind energy sector.

Condition monitoring: keeping Europe's turbines spinning

How do wind farm operators know when a turbine part needs replacing?

By Crispin Aubrey
Photos: Nordex

Over its lifetime the average wind turbine will operate for up to 120,000 hours, constantly adjusting its mechanisms to changes in the flow of air through its blades - and with the aim of capturing the maximum amount of energy. It's therefore not surprising that, over 20 years or more, some parts will wear out and need to be replaced. Assessing when that is likely to happen, and ideally taking preventative action, has become an essential element in the toolkit of the committed turbine operator.

Major advances have been made over the last ten years in the system normally described as "condition monitoring" or CMS. Although most wind turbines incorporate SCADA (Supervisory Control and Data Acquisition) for routine daily operation of the machine, more sophistication is needed to forewarn of any potential breakdowns. This is where CMS comes in.

Nordex, Europe's fifth largest turbine manufacturer, first introduced its condition monitoring system in 2003, and has since steadily improved its functions. The system works through a series of eight sensors fitted at various key points in a turbine's drive train. These measure vibrations, temperature changes and other irregularities right through from the main shaft to the gearbox and generator.

The sensors are connected to a data logger in the nacelle and then in turn to the individual turbine or wind farm's communication system. All the resulting data is continuously received at a monitoring centre in Germany, where it's assessed by a team of engineers. If they notice any deviations from the standard values established for the turbine when it first started up then an "alarm" is raised. A message is sent to the company's field technicians to check the turbine, as well as a report to the turbine owner. All owners signed up



The condition monitoring sensors are connected to a data logger in the nacelle



A customer could earn the cost of CMS back with just one or two generator bearings replaced in good time

to CMS receive regular reports on what action has been taken as a result of these alarms.

What sort of issues are most likely to be highlighted? “The most critical problems are likely to start with bearings,” says Ibrahim Oezarslan, who runs Nordex service operations for Europe. He gives the example of the bearings in a generator, where CMS picks up that there is greater slip-page than the manufacturer specifies. This could mean that the generator has been mis-aligned or that a bearing is wearing out. A grease sample should show if it’s the latter. “If a bearing needs to be exchanged, this is not expensive,” he says. “Replacing it can be fitted in with other work or during a no wind period. The main thing is to act before it completely fails and causes a bigger problem with the generator or even the main shaft. This could be very costly.”

Nordex uses two German companies to provide its CMS service - µ-Sen GmbH and Prüftechnik – between them covering the whole of Europe. The system is very similar to the one used by SKF, the Swedish supplier of bearings. To make more economic use of lines, it operates alongside the SCADA system, using the same communication network.

After a two year warranty period Nordex customers can opt for CMS as part of an extended service contract. “At present about 50-60% of our customers are choosing it,” says Oezarslan,



The CMS sensor for the high-speed shaft of the generator



CMS sensor for the low-speed shaft of the gearbox

“but we expect that to increase next year to up to 80%. You have to compare the cost of CMS with the lifetime of a turbine: a customer could earn the cost back in just one or two generator bearings replaced in good time.”

What is clear is that turbine owners are much more concerned about the efficient operation of their machines than in the past. “Our experience is that customers today want to know more and more about the condition of their turbines,” says Oezarslan. “They’re also demanding that they get all the original data from CMS, partly so they can compare it with other sources. That’s something we are happy to supply. After all, they don’t just want a turbine to be running in a field, they want to know everything about it.” ■

“This new way of working means big savings for everybody.”



A breath of fresh air for Europe - coming to Brussels

EWEA 2011 Annual Event
Europe's premier wind energy event
14 – 17 March 2011
Brussels Expo

www.ewea.org/annual2011



Photos: EWEA

EWEA 2011 – a sneak preview

Registration is still open for EWEA's 2011 Annual Event, which will be held in Brussels from 14 to 17 March - to get a taste of what's on offer this year, read on.

What and who?

The four day conference will include over 40 sessions on a range of relevant topics, from financing and technology to grids and social acceptance, with a key-note speech by EU Climate Action Commissioner Connie Hedegaard. The 2011 edition of the event formerly known as EWEC will be the biggest ever, bringing 10,000 key players together; corporate leaders, investors, policy makers and scientists. It is a unique combination of business opportunities, technical discussions and political debates.

The wind potential of *le plat pays*

On 15 March, a 'Belgian day' will allow the host country to showcase its industry.

The Belgian day is organised by the Flemish renewable energy association, ODE - organisatie duurzame energie, and the Walloon renewable energy association, EDORA - the Fédération de l'Energie d'Origine Renouvelable et Alternative. The one day event will offer participants new insights into the latest wind energy trends in the Belgian market and discuss the future of the grid system.

Unrivalled networking opportunities with Belgium's leading industry players will take place at the Belgian day conference and at the Belgian day exhibition stand located in Hall 12, no.12180.

Belgium currently has about 600 MW of installed wind power capacity. The Walloon region leads with installed capacity of more than 330 MW onshore, while Flanders has 239 MW onshore. In terms of offshore

wind energy, 30 MW are operational in the North Sea, with 155 MW in the final phase of completion. Belgium needs to source 13% of its energy from renewables by 2020.

According to a recent study conducted by both EDORA and ODE, renewables could feasibly provide 16 to 18% of gross final energy consumption in Belgium. The 2020 targets for wind energy have been set at 1,500 MW in Flanders, 2,000 MW in Wallonia and 2,825 MW in the Belgian North Sea.

If these targets are met, wind energy would provide more than 50% of Belgium's electricity from renewable sources, corresponding to about 15% of the projected electricity consumption in Belgium by 2020.

The facts of wind

On 13 March, a pre-event seminar will discuss everything there is to know about wind energy. Based on EWEA's 'Wind Energy – The Facts' publication - funded by Intelligent Energy Europe - and aimed at a non-specialist audience, this one-day seminar will give a comprehensive and understandable overview of wind energy and the challenges that the industry faces.

Campaign comes to a close

Both at the event and in Brussels do also look out for the finale to EWEA's 'Breath of Fresh Air' campaign, which saw thousands of people adopting and voting for wind turbines on the campaign website, www.ewea.org/freshair. In addition to this, several high-level campaign debates have been organised in Brussels on hot topics such as climate change and jobs, with speakers including EU Climate Change Commissioner Connie Hedegaard and

Poul Nyrup Rasmussen, former Danish prime minister and current President of the Party of European Socialists (PES). For two weeks in June a wind turbine blade was put up on Rond-Point Schuman just opposite the European Commission and Council to mark the Global Wind Day. In September, coinciding with Car Free Sunday, a two-week photo exhibition called 'Hard Rain' highlighting the problems caused by climate change and how wind energy can help avoid CO₂ took place next to the European Parliament.

"We are extremely pleased with all the activities that took place in 2010 as part of the 'Breath of Fresh Air' campaign", said Elke Zander, EWEA's Campaign Officer. "We believe that we have been very visible and present in Brussels – especially in the EU quarter - throughout the last year. In various ways, we have reached out to a wide audience to help them learn about the benefits of wind energy."

Reaching out

In addition to everything else, the exhibition at EWEA 2011 will be the biggest yet, covering 13,000m². Exhibition visitors will be able to meet the key players in wind power from Europe, North America and Asia – the world's foremost manufacturers, developers, engineering and construction companies, power generators and utilities. The exhibition space will be packed with more than 10,000 attendees and over 400 exhibitors, so be sure to check out the sponsorship opportunities that are still available.

All this, plus numerous side events, social events and a spectacular gala dinner, will make EWEA 2011 unmissable!

More information: www.ewea.org/annual2011

OFFSHORE 2011 is on its way



The world's largest offshore wind event will be held on 29 November – 1 December 2011, in Amsterdam, The Netherlands. Over 7,000 people are expected to attend.

“The timing of OFFSHORE 2011 is perfect as by then the Dutch wind power sector will be in the middle of building 1 GW of new wind farms in the North Sea - where the wind seldom sleeps! There will certainly be a lot to tell and likely even more to show”, commented Jaap Warners, President of the Dutch Wind Energy Association (NWEA).

Europe's offshore wind industry is flourishing. In the first six months of 2010 alone, 118 new offshore wind turbines, with a capacity of 333 MW, were fully connected to the grid, bringing the total installed offshore capacity to 2,396 MW in 43 fully operational wind farms in Europe. In addition, 151 turbines (440 MW) were installed but not yet connected to the grid.

EWEA's offshore conferences are held once every two years in different European countries – OFFSHORE 2009 took place in Stockholm, Sweden - and



contain a wide range of presentations, debate and discussion on Europe's biggest domestic energy resource.

It is also a great place to exhibit: the exhibition at OFFSHORE 2011 will cover 5,400m² and will feature everyone from manufacturers, developers, engineering and construction companies, power generators and utilities.

Not only that, but you can become a sponsor and profile your company, with direct access to your target audience – the offshore wind industry – highly visible branding opportunities such as banners, screen displays, branded gifts and distribution of promotional material, and the possibility of raising your company profile by putting your logo in the key event publications, on the websites and in newsletters distributed to over 15,000 contacts.

Take the chance to help shape the OFFSHORE 2011 event - the call for abstracts is now open.

More information: www.offshorewind2011.info

The opportunities never stop: EWEA 2012

It may seem a while away, but exhibition space is already selling fast for EWEA's 2012 Annual Event, taking place from Monday 16 - Thursday 19 April 2012 at the Bella Centre, Copenhagen, Denmark.

EWEA 2012 will feature a conference covering every key aspect of the wind market – from technical and theoretical to policy and practice.

The call for abstracts and registration will be opened in mid-2011. ■

Contact Sanna Heinonen to book your stand now! Tel: +32 2 213 1837 or email she@ewea.org



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25 January 2011, 10:00 – 17:00, NJV Athens Plaza, Athens (Greece)

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The Mediterranean Stakeholder Workshop is targeted towards policy makers, TSOs, regulators, energy utilities, wind farm developers, energy agencies and other actors involved in offshore infrastructure development in the Mediterranean area.

Attendance is free of charge.



For more information & registration please visit www.offshoregrid.eu

IEE/08/780/SI2.528573

Project duration: May 2009 – October 2011

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14-17 March 2011

Brussels, Belgium

www.ewea.org/annual2011

E-mail: events@ewea.org

Tel: + 32 2 213 18 00



OFFSHORE 2011

29 November – 1 December 2011

Amsterdam, The Netherlands

www.ewea.org/offshore2011

E-mail: events@ewea.org

Tel: + 32 2 213 18 00



EWEA 2012 Annual Event (formerly known as EWEC)

16-19 April 2012

Copenhagen, Denmark

www.ewea.org/annual2012

E-mail: events@ewea.org

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Photo: fotolia.com



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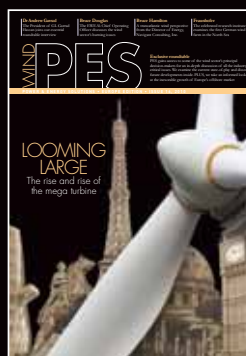
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Competing for power

Nina Niejahr of Baker & McKenzie's European and competition law practice comments on the single electricity market, the importance of competition, and the contribution of EU competition law to the completion of the EU's internal energy market.



Nina Niejahr,
Baker & McKenzie

25 years ago, in February 1986, EU Member States signed the Single European Act (SEA) to add momentum to European integration with the aim of creating the single market by the end of 1992, as proposed by the EU Commission under President Delors, which had identified a total of 279 legislative measures to complete the EU's internal market. The achievement of the internal market has been one of the primary goals of the EU since its establishment in 1957. It comprises an area without internal frontiers of nearly 500 million consumers in which the free movement of goods, persons, services and capital is ensured. In this area, free and undistorted competition ensures that consumers have a wide choice of goods and services at the best prices, because providers are able to compete freely on the merits of their offerings.

Since its formal completion in 1992, the EU internal market has been hailed as a great success story. According to the EU Commission it has created several million new jobs and additional wealth of more than €800 billion. Today, for example consumers pay a fraction of what they did ten years ago for phone calls and air fares.

However, areas remain in which factual completion of the internal market has still not been achieved. In the EU's energy markets, including electricity markets, obstacles to free competition are holding companies back from generating significant additional wealth for society. Energy companies are still not fully able to benefit from free and undistorted competition across the 27 EU Member States. But the EU Commission is gradually pursuing the liberalisation process in the energy sector, starting with the adoption of the first energy package in 1996. This process is ongoing, namely with the implementation of the third package adopted last year.

The third package includes significant steps towards the completion of the internal energy market, for example, introducing legal separation between power distribution and generation. But because full ownership unbundling is not compulsory, access problems may not be eliminated completely. Also, it will take time for the third package to be implemented by all Member States and for it to fully display all desired effects in the market.

In the interim, EU competition law and enforcement can be useful tools to tackle some of the deficiencies and support the creation of the internal energy market. The European Commission is enforcing EU competition law against companies to end the following anti-competitive practices observed in energy markets (including based on complaints by competitors):

- capacity hoarding, i.e. failing to release unused capacity on networks;
- failure to increase transmission capacity in major import networks to protect a dominant position on supply markets;
- blocking access to markets by long-term upstream supply contracts and matching long-term capacity reservations;
- excluding rivals by inflating network costs and imposing stringent balancing requirements in small balancing zones;
- foreclosure caused by long-term downstream contracts between the dominant incumbent and its customers;
- production reductions to the detriment of consumers
- collusion between incumbents to share markets.

In addition, State aid law and control supplements EU competition law. EU State aid law provides the European Commission with the tools and authority to ensure that competition in the internal market is free of distortive State or government intervention. Member States' funding schemes or individual hand outs to energy companies, including support for research or technology development, is prohibited by EU competition law, unless such State measures are specifically approved by the Commission or otherwise specifically exempt from the notification and approval obligation. Also, in the area of State aid control, cases are often triggered by complaints from competitors.

Free and undistorted competition is one of the cornerstones of a functioning internal market. While EU competition law cannot by itself create the internal electricity market, it provides useful tools to support its creation and maintenance. Its increased use by companies and enforcement by the European Commission and national competition authorities is still very much needed and must be encouraged. ■

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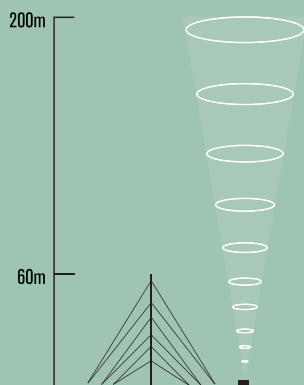
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