real power
from BWEA

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Energy Review Special

The British Wind Energy Association represents over 310 companies active in the maturing onshore wind sector and the emerging technologies of offshore wind, wave and tidal stream, and wind microgeneration.

BWEA's members will be delivering the bulk of the UK's renewable electricity growth in the period to 2020 and beyond, and so the Association welcomed the opportunity to contribute to the current Energy Review. The Government has a key opportunity to ensure that its targets and aspirations for renewable energy are achievable through targeted action following on from the Review. This will provide benefits in the form of enhanced energy security and reduced carbon emissions, as well as opportunities for UK investment and jobs.

BWEA looks forward to working in partnership with Government to maximise these benefits as the conclusions of the Review are implemented.

This first issue of Real Power 2006 has a special focus on the Energy Review, with a full analysis of the Association's response and headline issues. BWEA's research shows that onshore wind, offshore wind, marine renewables, and wind microgeneration can make a significant contribution to our power supplies in 2020.

BWEA believes that the evidence we are presenting makes a strong case for setting a firm target of 20% of our electricity from renewable generators in 2020. If this is done it will show that the UK Government is serious in setting this country on a course towards its longterm carbon reduction goals as well as increasing the security of our energy supplies. □

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Green Light For Europe's Largest Wind Farm

Scotland leading the way in the renewables revolution

Allan Wilson MSP, Deputy Minister for Enterprise & Lifelong Learning at the Scottish Executive, announced on 27 April that ScottishPower's application for the Whitelee wind farm project, south of Glasgow, has been given planning consent under Section 36 of the Electricity Act 1989.

When built, Whitelee will have a capacity to generate 322 MW of electricity, enough to power nearly every home in Glasgow, and will provide over 11% of the 2010 Scottish Executive's renewable energy target (18% of all electricity generation in Scotland), and 2.4% of the UK wide target for 10% of electricity generation from renewables by 2010.

The £300 million, 140 turbine Whitelee wind farm project will cover 55km² of open moorland and commercial forestry. Construction at the site will start this summer, with the first turbines arriving in late 2007 and the first units becoming operational in 2008. The whole wind farm, including the visitor centre, is expected to be completed by the summer of 2009.

The decision was warmly welcomed by BWEA and the Scottish Renewables Forum, as well as Greenpeace.

THE BRITISH WIND ENERGY ASSOCIATION

BWEA Calls on Government to Commit to 20% in 2020

by Dr Gordon Edge, Head of Offshore

The current Government Energy Review, the most important policy assessment in the area since 2003's Energy White Paper, has closed its public consultation period, with BWEA submitting a comprehensive response. In it, the Association has laid out evidence that the resources of on- and offshore wind, small wind systems, plus the emerging marine renewables can together provide 21% of the UK's power by 2020. As a consequence, BWEA is calling on Government to turn its current 'aspiration' to have 20% of the UK's electricity supplied by renewables in 2020 into a firm target. This would be a key indicator of the Government's seriousness in setting the UK on the path to a low-carbon economy.

Glens of Foudland © jkr

On-and offshore wind will play the leading roles in providing the 21% of the UK's projected electricity needs that BWEA believes can be met from renewables, generating 8.8% and 9.4% of projected UK electricity supply from 11,500 megawatts (MW) and 12,500 MW respectively. An additional 2.1% can come from 3,000 MW of wave and tidal power and up to 0.7% from micro and mini wind turbines. These technologies alone could have a combined capacity of 28,000 MW in place by 2020, generating 78 TWh of electricity, equivalent to the needs of two thirds of all UK homes. If displacing gas-fired electricity generation, this would reduce gas imports by 14.6 billion cubic metres annually and avoid at least 32 million tonnes of CO_2 emissions, whilst delivering major economic benefits to the UK of more than £16 billion in the period to 2020 from investment in the construction and operation of the potential onshore and offshore wind capacity.

While BWEA's research indicates that by 2010 around 8% of the country's electricity needs will be met by renewables, primarily from onshore wind, it also shows that 'business as usual' progress, driven by the current support mechanism of the Renewables Obligation (RO), will not be sufficient to drive a major roll out of offshore renewables, without which we will fall well short of the potential identified by the Association. The renewable contribution of 20% in 2020 is deliverable, but the key to unlocking this potential is getting the financial mechanism right for emerging as well as existing lower-cost renewables. If no extra resources are provided for newer technologies or the RO not evolved to direct more resources to them, offshore wind will not be delivered in the quantities required to establish the sector and attract investment in the supply chain that will bring costs down. Should offshore wind not deliver, then it will be difficult for investors to have the necessary confidence in Government to provide the right framework for the nascent technologies of wave and tidal stream; finding a solution for offshore, whether within or without the RO, will be a key test of the Government's resolve to set the UK on the path to a low-carbon future.

The RO is doing well in bringing forward the lowest-cost renewable resources, notably co-firing and landfill gas as well as onshore wind. What it is not doing is providing suitable incentives for technologies that are, at the moment, more expensive or further away from the market, such as offshore wind and the new marine renewables, both of which have potential to deliver significant volumes of renewable energy. BWEA would prefer the RO to remain as it is and the emerging technologies be given extra resources outside of that mechanism. However, should no or insufficient funds be forthcoming, then offshore wind will not deliver and the RO would be open to charges of underperformance. BWEA is thus open to the argument that the RO may need to be evolved to address these issues. However, the RO is still a young mechanism and it has just been subject to a year-long review, so investors would look askance at fundamental change being put forward in the near future without strong protection of their investments, and even then confidence in future development may be affected through the introduction of change. Nevertheless, the Association has reviewed options that are being debated as possible changes to the RO against five key criteria; at present BWEA is not in a position to endorse any shift from the status quo as it is not clear how investor confidence in onshore wind can be assured under any of the options reviewed. This is not to say that this cannot be done, but further work is

BWEA is calling on Government to take action in five specific areas:

1. To turn its current 'aspiration' for 20% of electricity supply from renewables by 2020, into a firm Government target. This is essential to provide strong long-term investment signals and to maintain confidence in the sector

2. To extend the RO to 20% by 2020 to provide the additional financial resources to deliver the 20% target. Extending the Renewables Obligation from its current top level of 15.4% in 2015 would increase its overall cost in 2020 from £1.9 billion/year to £2.5 billion/year, based on today's prices. For an average domestic consumer, this would mean an extra £8/year on top of the existing commitment of about £20/year for the 15.4% Obligation, or an additional rise of about 2% on top of the 6% pre-committed rise on a typical household bill of £400/year

3. To immediately resolve policy issues on offshore wind and marine renewables to ensure they are deployed en masse to meet more than half of the 20% by 2020 target. This may require either additional Government financing outside of the RO or an evolution of the RO to direct additional resources to these key technologies

4. To maintain a robust and positive planning framework throughout the UK and take action on current delays in decision making which are in danger of compromising the role of onshore wind in meeting Government's renewable energy targets. A combination of financial and policy mechanisms and communication initiatives should be introduced to incentivise prompt decision making at both the national and local level

5. To progress with breaking down non-economic barriers, in particular the grid bottleneck which must be resolved in time to allow onshore wind to deliver the shorter term 2010 target, and all the marine renewables to deliver on longer term objectives in 2020.

required to ensure that any possible change to the system continues to support the healthy expansion of the onshore wind sector.

Delivery of 20% of our power from renewable energy will require additional support. This should be done by extending the RO to 20% in 2020 and providing additional resources to the emerging technologies. Extending the RO to 20% in 2020 from its current top level of 15.4% in 2015 would increase the overall cost of the RO in 2020 from £1.9 billion year to £2.5 billion/year, in 2006 money. For an average domestic consumer, this would mean an extra £8/year on top of the existing commitment of about £20/year for the 15.4% Obligation, or an additional rise of about 2% on top of the 6% pre-committed rise on a typical household bill of £400/year. The resources required to support the emerging technologies are of the same order of magnitude as the surplus being generated by the Non-Fossil Purchasing Agency – £0.5-1bn cumulatively up to 2010 – and if this surplus were to be used to provide such support there would be no additional rise in consumers' bills.

Alongside certainty on the economic front, the realisation of the 20% contribution from wind, wave and tidal requires action on planning. With clear steps to reduce the decision times for onshore wind projects, current progress can be accelerated. The current 'criteria based' approach must be retained and strengthened, and further work done to improve local planning departments' ability to deal with applications for this rather unique form of development. Since the numbers of renewable energy project applications will only increase – not just from wind but many other technologies – educating local planning departments in the wider issues of climate change and renewables' place in energy policy is essential in any case.

Outside of policy measures, there is a lack of incentive for planning authorities to make timely decisions. There are a range of initiatives which BWEA has called on Government to promptly employ to accelerate decision making in response (see page 6 for full details). In the near term, the issue of Section 36 of the Electricity Act consents for larger projects in Scotland must be addressed: developers have been awaiting decisions from the Scottish Executive on 4,250 MW of projects, some of which were lodged several years ago. Determinations must be made soon to allow this capacity to be brought forward. Under Section 36, there is currently no right given to the applicant to appeal for non-determination after 16 weeks. While larger projects arguably require longer periods of assessment, the Government should amend legislation to introduce recommended timescales for the determination of on- and offshore wind farms under Section 36. Additionally, developers should be given the right to go to a public inquiry. Offshore renewables will similarly require a strong planning framework resulting from the current Marine Bill consultation.

Renewable development also requires grid issues to be addressed. The widescale uptake of renewables presents challenges for network owners and operators at a number of levels. The large-scale development of

renewables, such as on- and offshore wind and potentially the marine renewables, will take place where the resources are – and these places are generally where the grid is weak. Grid extension and reinforcement has to be planned several years in advance of when developers would want to connect due to long consent and build times for the infrastructure; strategic planning is therefore vital to ensure adequate grid capacity is in place at the right time. Thought will also have to be applied to how capacity can be provided for the new marine technologies or they will risk being squeezed out of the market, particularly in Scotland.

Effective management and regulation of a future energy market will be key to ensure successful delivery of any UK Government Energy Policy. However, the current narrow mission of Ofgem to reduce costs to the consumer is hindering delivery of policy as set out in the Energy White Paper. More appropriate would be for the UK Government to set a market framework that better takes account of wider energy policy objectives. This would start by changing the licence conditions of Ofgem, creating not one primary duty, but four equal duties of affordability, carbon, security and competitiveness.

This would not be an easy task for Ofgem, given the fact that the four objectives will not always sit well together. Instead, Ofgem will need to manage the creative tension between these different goals of energy policy. Expanding Ofgem's objectives would, however, allow it to lead the strategic planning for the electricity networks mentioned above, the principles for the process having been set by central Government.

Also in the institutional realm, BWEA is calling for Governmental responsibility for climate and energy policy to be brought under one departmental roof. Currently responsibility for implementation of that policy and wider climate strategy is spread across several Government departments and a number of quasi-governmental agencies. This leads to diffusion of effort and uncertainty over Government's commitment to tackling climate change in the face of competing political pressures. BWEA recommends that these dispersed responsibilities, primarily at DTI and DEFRA but perhaps including some of ODPM's planning functions, be brought together in one department with a cabinet minister tasked with driving forward the agenda. This would send an unambiguous message of the Government's seriousness in mitigating climate change, and integrating its other three energy policy objectives with climate goals.

At the delivery level, there are different agencies, primarily the Carbon Trust and Energy Saving Trust, which are implementing different parts of the sustainable energy agenda. There needs to be clarity on how the different programmes for energy reduction and encouragement of low-carbon supply inter-relate and cohere. For this reason, BWEA supports the call in the common sustainable energy policy statement (www.r-e-a.net/article_default_view.fcm?articleid=1858&subsite=1) that the delivery of these programmes be brought together under one roof, in a 'Sustainable Energy Agency'. This would function as an executive arm of the 'Department of Energy and Climate Change' described above.

Full details of BWEA's response are available from www.bwea.com/energyreview. □

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Barrow © Centrica & DONG

Barrelling along at Barrow

Work is progressing well at Barrow offshore wind farm for Centrica and Danish energy group DONG with the final turbine being lifted into place at end of April, and the installation vessel Resolution has now returned to Belfast

The project is now undergoing final commissioning work with a view to being in full commercial operation sometime in June. Barrow will be the UK's fouth large-scale offshore wind farm, bringing the UK's total installed capacity offshore to 303.8 MW from 122 turbines.

A Sustainable Energy Policy

BWEA, together with 34 other organisations issued a joint statement in response to the Government's Energy Policy Review. The organisations believe that the priorities of the Government's Energy Review should be to:

- **Uphold the vision, objectives and targets** for sustainability, security, prosperity and fairness set out in the 2003 Energy White Paper. The government should re-affirm its commitment to all related statutory and non-statutory targets and introduce supporting annual milestones
- **Develop the long-term policy framework** necessary to provide enduring investment signals for businesses of all sizes to deliver the major changes needed to our energy system. This includes a long-term carbon market beyond existing emission trading schemes
- **Minimise the 'energy gap'** before trying to fill it. The first priority is to reduce demand; followed by encouraging efficient energy production and usage; then boosting renewables. Incentives and support measures should reflect these priorities
- **Focus on sustainable heat and transport as well as electricity.** Energy is an inter-related system and policy should pay equal attention to all parts of the mix
- **Structure Government and agencies to meet the objectives** by identifying a single body responsible for achievement of sustainable energy targets. The primary duties of the regulator should reflect all national energy policy objectives.

This strategic framework should lead to the following policy actions:

- **Reduced consumption through energy saving.** Conservation is the most cost-efficient solution to energy security, fuel poverty and climate change. Government should implement a package of measures that deliver an absolute reduction in energy consumption in industry, transport and the home
- **Investment in decentralised energy systems.** Integrated community systems and micro-generation deliver clean heat and electricity at the point of use, displacing inefficient production in conventional stations, and increase public awareness catalysing behaviour change. Government should ensure a fair value for distributed energy and provide regulatory and fiscal incentives for consumers, installers and network operators. It should strengthen regulations to require all new buildings to be carbon neutral no later than 2015, and use standards to eliminate the most inefficient products from the market
- **Accelerated renewable energy capacity growth.** Renewables produce low carbon energy without fossil fuels and stimulate agriculture and the economy. The Government should aim to put the UK in the top five EU members for renewable energy contribution by 2025. Coherent transitional support measures are needed to build scale and reduce costs
- **Champion sustainable energy at home and abroad.** The Government should press for international policies to encourage energy efficiency, boost renewables and eliminate barriers to sustainable energy. It must lead by example in its own procurement policies and infrastructure developments. Government should invest in a sustained programme of education to achieve cultural change in energy use.

Individually and together these measures will enhance sustainability, boost UK industry and reduce fuel poverty. They can make a major contribution to energy security by reducing import dependence, maximising local resources and increasing the effectiveness of valuable fuels.

These views are shared by the following organisations:

All Party Group on Intelligent Energy, All Party Parliamentary Climate Change Group, Association for the Conservation of Energy, Association of UK Energy Agencies, British Hydropower Association, British Wind Energy Association, Combined Heat and Power Association, Country Land and Business Association, Energy Saving Trust, Energywatch, Environmental Industries Commission, Friends of the Earth England, Wales and N. Ireland, Friends of the Earth Scotland, Green Alliance, Greenpeace, Institute for Public Policy Research, Institution of Mechanical Engineers, Institution of Engineering & Technology, Micropower Council, National Energy Action, National Energy Foundation, National Farmers Union, New Economics Foundation, Parliamentary Renewable and Sustainable Energy Group, Renewable Energy Association, Royal Society for the Protection of Birds, Scottish Parliament Renewable Energy and Energy Efficiency Group, Scottish Renewables Forum, SERA Labour Environment Campaign, Solar Trade Association, Sustainable Energy Partnership, Town & Country Planning Association, UK Business Council for Sustainable Energy, WWF Scotland, WWF - UK

Onshore Delivery to 2010

by Chris Tomlinson, Head of Onshore

Onshore wind energy alone can deliver almost half the Government's 10% renewable energy target by 2010, supplying electricity for over 3 million homes or the equivalent domestic needs of the populations of Scotland and Wales combined. Onshore wind has been leading the renewables industry for the past decade and the most robust and comprehensive analysis of onshore wind delivery ever produced by BWEA clearly demonstrates the importance of maintaining the momentum. Without it, the Government targets are sure to be missed by a great margin, the opportunity to stimulate a distributed grid network will be missed and investor confidence in the wider renewables sector will falter.

Of course, while the industry is ready and able to deliver an installed capacity in excess of the forecast 6,200 MW, the planning system is the critical factor in determining successful delivery. However, before investigating the future potential, Government can be sure that well over 3,000 MW will be operational by 2010, with 1,368 MW now operating, nearly 500 MW under construction and 1,660 MW consented and yet to break ground, at the time of going to print.

BWEA committed significant resources to conduct this detailed analysis to help inform the Energy Review, the most important review of energy policy in recent times. The wind industry is now in a better position than ever before to accurately forecast what capacity can be delivered in the next four years by taking informed data from the industry and assessing the impact of external factors in ensuring successful delivery. The report takes into account potential barriers such as planning approval rates, timeliness of decision-making and grid capability, to provide a range of delivery scenarios to 2010.

The findings demonstrate that 6,200 MW can be built by 2010 under a 'business as usual' planning scenario. This scenario takes average approval rates and decision times over the last four years by type of application from each country of the UK and applies them to the MW capacity in current and forthcoming planning applications. This scenario also assumes a conservative three year decision time for Section 36 applications. However, perceived worst and best case scenarios produce a range of 4,681 MW – 7,515 MW which can be delivered by 2010.

BWEA is now calling on the UK Government and devolved administrations to help make the onshore wind forecast a reality and deliver nearly 5% of the UK's electricity supplies by 2010. They must maintain a positive and robust approach to planning policy from national down to the local level and more importantly, ensure the timeliness of decision making. BWEA is of the view that a combination of 'carrots and sticks' needs to be introduced to incentivise and accelerate decision making:

- The Government should issue new advice to local planning authorities stressing that the risk of appeal costs being awarded to a developer due to the failure of a local authority to determine an application, will increase over time.
- The Government should introduce a range of targets to incentivise decision making even after the 16 week deadline has passed. Under the current system, it is in the interest of local planning authorities to determine as many applications as possible within the 16 week target and therefore once the deadline has passed, it is in their interest to prioritise more recent projects rather than those applications which have already missed the target. New targets could be for 90% of projects to be determined in 30 weeks and 100% in 50 weeks.
- The Government should publish the statistical performances of local planning authorities on a regular basis to highlight non-performers while highlighting improvements in performance over time.
- Under Section 36 of the Electricity Act, there is currently no right given to the applicant to appeal for non-determination after 16 weeks. While larger projects arguably require longer periods of assessment, the Government should amend legislation to introduce recommended timescales for the determination of on- and offshore wind farms under Section 36.

Alongside additional training, skills and resources for planners and decision makers, this combination of incentives and disincentives should be swiftly introduced to fully utilise financial mechanisms, targets and new legislation. This should result in timely consents, facilitating the meeting of Government targets for wind and other renewables. Of particular concern, and an area where action is urgently required, is the backlog of 4,300 MW of Section 36 projects being considered by the Scottish Executive – almost two thirds of the entire wind energy portfolio currently in planning in the UK. Speeding up determinations here is 'a must' if the UK renewable energy targets are to be reached.

If these initiatives can be introduced, 6,200 MW from onshore wind can be successfully installed which will equate to nearly 5% of the UK's electricity supply, avoid at least 13 million tonnes of CO_2 emissions and generate more than £4.2 billion from investment in the wind industry and contributions to business rates, local communities and landowners by 2020. BWEA stands ready to cooperate with Government in reviewing the current planning system with a view to achieving these goals in the short term and making their targets a reality while developing a thriving, sustainable renewables industry for Britain.

Onshore Wind: Powering Ahead can be found at www.bwea.com/pdf/OnshoreWindPoweringAheadFull.pdf. □

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Latest Statistics

by Georgina Wong, Onshore Wind Officer

New build

2006 is firmly on track to deliver the 665 MW anticipated build for the year, with 261 MW operational so far. 36 MW of this comes from England with Your Energy's 20 MW Burton Wold and Wind Prospect's 16 MW Glass Moor. In Scotland two Section 36 projects became operational – Scottish and Southern Energy's 120 MW Hadyard Hill, the largest operating wind farm anywhere in the UK. Fred Olsen's 55 MW Paul's Hill has also been commissioned and Wardlaw Wood, an 18 MW Community Windpower project in Ayrshire is on course to be commissioned in April. Northern Ireland saw its first commissioning of the year with the ScottishPower owned 17 MW Callagheen wind farm in Co. Fermanagh. In Wales, Tegni have commissioned their third extension at Haffoty Ucha in Gwynedd, and in Powys Renewable Energy System's 14.45 MW Mynydd Clogau project became operational. This first quarter of 2006 has certainly been a strong start, with many more wind farms under construction due for completion in 2006.

Decisions

In England Ecotricity kicked off the approvals with a re-submission granted for 20 MW at Consiholme Fen in Lincolshire, and another approval in Lincolnshire followed with Wind Prospect's 27 MW Bagmoor scheme. In Northern Ireland, the 9 MW Bin Mountain scheme for Airtricity was approved, and a re-submitted 7.8 MW Lough Hill application was approved for Wind Farm Developments, the B9 and RES partnership. Scotland saw approvals for three extensions, 29.75 MW at Dun Law, 26 MW at Hagshaw Hill and 9.2 MW at Paul's Hill, however in terms of capacity the major approval of the quarter was 322 MWs for ScottishPower's Whitelee wind farm, south of Glasgow - the largest approved onshore wind farm to date (see page 1). In total 450 MW have been approved so far in the UK, an impressive start to the year. There have also been 146 MW of capacity refused during this period with 81 MW of this accounted for by a single refusal at Whinash. England has carried the bulk of refusals since the start of the year with, in addition to Whinash, 10.5 MW Denshaw in Lancashire and 23 MW Den Brook in Devon being turned down, and in Scotland 12 MW at Garvock Hill in Aberdeenshire was refused.

New submissions

2006 has started with a series of submissions coming from England, which included Steadings wind farm in Northumberland - a 66 MW Section 36 project from the Banks Group. Also submitted in this period were Wind Prospect's Grise and Green Rig, another urban project from Ecotricity with an application for a single turbine at the Manchester City football club stadium, and a re-submission of Your Energy's Laughton scheme in Lincolnshire, following its refusal at appeal in January. There was a submission in Northumberland of the 36 MW Lynemouth wind farm from Scottish Power, one of a series of projects in the pipeline for the county. In Scotland, Wind Prospect and Banks Group were also busy, with submissions for the 26 MW Burnfoot Hill and 19.5 MW Knowside Hill projects respectively. Fred Olsen with Natural Power consultants submitted a Section 36 application for a 79 MW scheme at the Locan Shira Reservoir in Argyll & Bute, and there was also an application from E.ON for the 45 MW Auchencorth Moss wind farm in Midlothian. The largest project to be submitted this year so far comes from ScottishPower with its 180 MW Arecleoch wind farm in South Ayrshire. The New Year also saw activity begin to hot up in Wales with several applications for test masts in the designated strategic search areas, and an application for an extension to Parc Cynog wind farm in Carmarthenshire. □

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Wind Farms of the UK

Operational Wind Farms

Onshore	Projects	MW	Offshore	Projects	MW
England	51	246.92	England	3	153.80
Northern Ireland	12	106.60	Wales	1	60
Scotland	34	762.04			
Wales	24	269.20			
	121	1,384.76		4	213.80
Total operational wind farms: 125 (1,598.56 MW)					

Wind Farms Under Construction

Onshore	Projects	MW	Offshore	Projects	MW
England	6	75.50	England	1	90
Northern Ireland	1	24.50			
Scotland	13	348.80			
Wales	2	32.25			
	22	481.05		1	90
Total wind farms currently under construction: 23 (571.05 MW)					

Consented Projects

Onshore	Projects	MW	Offshore	Projects	MW
England	35	536.70	England	5	486
Northern Ireland	4	40.00	Scotland	2	180
Scotland	26	1,057.30	Wales	2	189
Wales	4	26.60			
	69	1,660.60		9	855
Total consented projects: 78 (2,515.60 MW)					

Schemes in Planning

Onshore	Projects	MW	Offshore	Projects	MW
England	46	800.28	England	9	3,968
Northern Ireland	28	590.95			
Scotland	74	5,085.70			
Wales	15	191.58			
	163	6,668.51		9	3,968
Total projects in planning: 172 (10,636.51 MW)					

Up to date summaries of UK wind energy statistics are available at www.bwea.com/ukwed

BWEA Reinforcements to Help Meet Welsh Assembly Government Targets

by Llywelyn Rhys, Wales Officer

BWEA has strengthened its presence in Wales by establishing a permanent Wales Steering Committee of twenty members in addition to appointing a Wales Wind Officer to action and represent the views and objectives of the committee.

An interim Wales Steering Committee first met at the BWEA's conference in Cardiff last October. Under Paul Dowling's chairmanship, progress was swift in agreeing the membership and rules as well as determining the main focus and objectives for the industry in Wales. By the end of March the interim committee took on a permanent form with Matt Partridge from Gamesa Energy UK being elected chair and John Woodruff from Natural Power as vice chair. The Committee has twenty dedicated member companies that represent a cross section of industry interest all of whom have an interest in facilitating wind energy growth in Wales. With every member contributing their expertise and experience for common objectives the Wales Steering Committee has certainly become a strong and influential advocate for the development of wind power.

To add to the reinforced BWEA presence, a new full time Wales Officer has been appointed to lead the Committee's efforts and to ensure that everyone works closely together in achieving a sustainable energy solution. Llywelyn Rhys was previously employed by Environment Agency Wales, Federation of Small Businesses and the National Assembly. He has wide experience in policy development, in lobbying

Llywelyn Rhys, BWEA's new Wales Officer

Ministers and their officers, and in representing views to the media. Appointing a committed person dedicated to the work of implementing the goals of the Steering Committee demonstrates once again BWEA's commitment to the industry across the UK.

There are certainly urgent issues that will keep both the Committee and the Wales Officer busy over the next few months. The current 2010 projection for wind power in Wales is 505 MW. An additional 221 MW of capacity from the Strategic Search Areas identified in Technical Advice Note 8 (TAN8), Wales' national planning policy for renewables, is still achievable, although it is subject to a positive and robust local planning policy framework and ultimately, timely planning decisions. This is a relatively low forecast that falls well short of the Welsh Assembly Government 800 MW additional onshore wind target for 2010 that were advocated in TAN8.

The reasons for missing the target are varied. The publication of TAN8 was itself delayed and the time lag of local authority decisions and reduced grid capacity also compounds progress. TAN8 identified 7 Strategic Search Areas (SSA) for wind farm developments as a means to reach the 800 MW additional onshore wind energy target. However, delivering high quality wind farm developments in these areas is becoming ever more challenging as local planning authorities continue to apply restrictive policies in their Supplementary Planning Guidance revisions and reduce the land area of the SSA's – a stark contrast to the spirit of the Assembly's national policy.

To drive forward the 800 MW target in Wales there is a need for the Welsh Assembly Government to oversee the preparation of the Supplementary Planning Guidance and ensure that they remain consistent to national policy on renewable energy. BWEA has already requested a meeting with Carwyn Jones, the Environment, Planning and Countryside Minister for the Welsh Assembly Government to highlight its concerns regarding local planning and to ensure that the spirit of the national policy set out in TAN8 is not diluted.

Grid infrastructure is another key stumbling block for onshore wind generation in Wales. Many of the Strategic Search Areas are simply not served by the grid at present and setting up the capacity could see further delays. By taking a strategic approach with a coordinated effort being made between the wind industry, local planning authorities, Welsh Assembly Government, Ofgem and grid companies, the situation could be greatly improved. Again, BWEA has been proactive in getting the structures in place to ensure co-operation and initiate progress.

There are a number of challenges which must be swiftly overcome to enable wind energy to deliver its potential in Wales and produce the associated economic benefits for rural Wales. With a new dedicated Steering Committee to facilitate progress and with a new Wales Officer having been appointed to take its actions forward, the industry is in a better position than ever before to meet the challenge. □

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Onshore Planning Advisor

Abigail Dodds recently joined BWEA as the new Planning Advisor. Her main priorities are to monitor development plans within the UK and respond to consultations from local and regional authorities in order to promote the use of positive and robust policies relating to wind energy and renewable energy developments, in accordance with adopted national policy. Since graduating with a BA (Hons) Environmental Policy, Abigail has worked as a development control planner with Local Authorities in Buckinghamshire and Somerset. □

Contact Abigail Dodds on 07779 620843 / abigail@bwea.com. Abigail would be pleased to hear from members regarding any development plan queries.

Latest Wind Farm

Your Energy's Burton Wold Wind Farm started operation in April 2006. The planning application for the 20-megawatt (MW) project was submitted in May 2003, with approval granted in March 2004. Construction of the Burton Wold Wind Farm, located in Kettering, Northamptonshire, started in July 2005, and the site consists of 10 Enercon E70-2 MW turbines. □

Burton Wold Wind Farm © Your Energy

Realising the Vision

by Michael Hay, Marine Renewables Development Manager

Unfortunately, following the Energy Review consultation period, there is no time for reflection in the world of marine renewables. No sooner than there was one significant Government assessment on the future of the industry out of the way another arrives, this time from DEFRA.

At 312 pages the Marine Bill consultation is a sizable document but one that cannot and should not be avoided by industry. As the Minister with responsibility for its delivery, Ben Bradshaw, states in the preamble "*the Marine Bill will contribute to the coordination of our activities on, and in, the sea in a harmonized way to ensure that they have minimum impact upon each other and the marine environment*". Any new system of management could therefore have significant implications on how and where offshore renewable energy projects are consented and built in the future and for that reason we must fully engage in this process.

In order to help members understand these implications and formulate their own responses BWEA put together a Marine Bill position paper in February. This represented the conclusions of a year's worth of work by the BWEA Marine Bill Steering Group and was also shaped by discussions with environmental groups, other industries and Government departments. BWEA then set up a Marine Bill Seminar that was held on 2 May and sponsored by Bond Pearce LLP. This one day event provided members with an opportunity to discuss the consultation with relevant Government bodies and stakeholders and was instrumental in helping BWEA pull together its response based on a representative body of its membership. BWEA has now moved into the response development stage and will produce this before the close of the consultation period in order to give members a chance to align their own response with that of the Association.

Since the last Real Power BWEA has held its sold out marine conference 'Power & Opportunity' in The Sage Gateshead, sponsored by npower Juice (see page 14). This event provided an opportunity for the sector to gather and discuss the pertinent issues of the moment, which were triggered by the opening presentations of the day by Malcolm Wicks discussing the Energy Review and Ben Bradshaw outlining the Marine Bill. Both Ministers provided a positive introduction to what evolved into a day full of interesting dialogue and fascinating expert insight into the potential future for this emerging industry. This was also preceded by a drinks reception in the impressive Rooftop Restaurant at The Baltic Centre for Contemporary Arts sponsored by E.ON UK.

The Future of Marine Energy was also the topic on industrial lips in January given that the Carbon Trust adopted this title for the launch of the summary document to their Marine Energy Challenge. Headline messages emerging from this £3 million, 18 month study included the prediction that marine renewables could provide 20% of the UK's electricity needs in the long term (thereby laying bare the raft of speculative figures from the past) and that the sector has the potential to become cost competitive with other generation forms relatively quickly. More detailed analysis showed that up to one sixth of the UK Government aspiration of 20% renewables by 2020 could be met by wave and tidal stream and that central cost estimates for initial wave farms are in the region of 22-25p/kWh and for tidal stream are between 12-15p/kWh. Through cost reduction scenarios it stated further that at least hundreds of megawatts capacity will need to be installed before marine is competitive with other renewables and conventional generation. Given that this does not all have to occur in the UK this study presented a positive outlook for the industry at a vital time in its future.

This evidence formed the core of BWEA's marine renewables submission into the Energy Review and this opening to submit high level recommendations to Government also provided BWEA with the opportunity to highlight that the 'Path to Power' will look deeper into such recommendations. Following over 8 months and 100 interviews with industry, financiers, environmental and conservation groups, offshore stakeholders, Government departments and electrical infrastructure bodies this study will be launched in June. These interviews have centred on the issues of consenting, grid access and financial support requirements and have been conducted by leading experts in these respective areas. They have cumulated in a vision for the sector in the UK that will bring environmental and economic benefits to this country based on both our unique energy strengths in the marine environment and our offshore engineering skills base.

The Path to Power will be the first time such a vision has been so comprehensively presented and BWEA hopes that Government will sign up to the recommendations and put in place the necessary actions and work streams that will be required if the UK is to build upon its natural strengths. Given the potentially significant market for such technologies around the world, a successful UK marine renewables industry would mean that Government action taken now would lead to significant carbon reductions in the energy sector globally and further enhance the UK's credentials as a world leader in the fight against climate change.

This vision is however in danger of stalling before it gets started. In March OPD started transporting the first of three Pelamis devices to Portugal as part of their agreement with Enersis to build the world's first offshore wave energy project.

Grid and Technical

Marine Renewables continued...

As Richard Yemm stated at the time; "*Without a clear route to commercial deployment in UK waters soon, the industrial opportunity is likely to move to Portugal*". BWEA will therefore be using the Path to Power to direct Government thinking towards a longer term outlook in order to ensure the positive signals required happen and are then converted into action.

On a more positive note, in the space of only a few days before Christmas MCT gained consent to build their 1 MW prototype in Strangford Lough and then went on to secure £2 million further funding from EDF Energy. Wave Hub also publicly announced the technologies that will make use of the facility should it eventually be built off Hayle in the South West. These are Pelamis, ten of which are planned for development by Ocean Prospect, OPT, who are looking to deploy 5 MW of their PowerBuoy device and Fred Olsen who would like to connect their Buldra platform to the hub.

Marine renewables are therefore becoming more prominent in the energy debate in terms of importance, credibility and value. Over the past few months there have been numerous stories on this sector in newspapers and television, including a whole week of dedicated industry reports from around the world on BBC2's Working Lunch. Wave and tidal energy is entering the mainstream lexicon with energy commentators as the need to develop all natural strengths becomes unavoidable and marine projects become closer to reality. This credibility will only be reinforced with time. The role for BWEA, as the representative body for the UK, is therefore to ensure this country remains at the forefront of this global movement. □

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Transmission Key

by Richard Ford, Head of Grid and Technical Affairs

Work on grid issues in 2006 has focused on the arrangements for providing access to the transmission grid and the regulatory framework for offshore transmission networks.

Offshore transmission

The DTI published its long awaited decision on the regulation of offshore transmission on 28 March. Last Year's consultation had proposed two possible ways forward: a merchant approach and a price control approach. The BWEA response to that consultation expressed strong support for the price control approach which would essentially extend offshore the existing arrangements for onshore transmission. BWEA was therefore pleased that the DTI decided that this is the appropriate way forward.

Now that the regulatory framework for offshore transmission has been set, attention turns to the work required to implement this. It is important that momentum is established here to ensure that the offshore networks do not introduce delays to the development of the Round 2 offshore wind farms. Ofgem followed up the DTI decision with a proposed workplan which spans the next 18 months and focuses on 5 areas of work that may each result in industry consultations.

Ofgem and DTI have established an advisory group to oversee this work (the Offshore Transmission Expert Group). BWEA is a member of this group.

Transmission access

Gaining access to the transmission system is a concern for many new generation projects. There is already a queue of projects in Scotland seeking grid connection, some of whom have been given connection dates of 2016 and beyond.

Ofgem has been reviewing the arrangements for access to the transmission system. For example in a consultation document published in March 2006 they said that the existing approach has "failed to provide a mechanism to prioritise projects and is seen by many as a barrier to entry". To develop thinking in this area, Ofgem hosted a seminar on 16 February and followed this up with an industry group to discuss options for Access reform. The outcome of this group is a consultation paper on possible reform to the arrangements for transmission access which Ofgem is expected to publish in May 2006. Responses to this consultation will guide the development of the next transmission price control which takes effect in April 2007. □

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2nd BWEA Health & Safety Seminar

The 2nd annual Health & Safety seminar, sponsored & organised by GE Energy and ScottishPower Renewables, was held in Glasgow on 22 March. Over 130 delegates attended the day with a broad mix of health and safety professionals and operational staff from the wind industry, the Health & Safety Executive (HSE) and the Maritime & Coastguard Agency. Speakers at the seminar included Rich Lubert from GE Energy who spoke on the importance of H&S and how it can add value to clients. Dave Chaplin from HSE endorsed the work of the BWEA H&S Steering Group and highlighted the importance of developing practical and legally sound programmes. The day included a demonstration on how to rescue someone, and escape from a wind turbine. GE Energy will sponsor the seminar again in 2007, ensuring that the work the BWEA H&S Steering Group undertakes continues to develop practical solutions to H&S.

Micro Wins

by Mari Martiskainen, Communications and Small Wind Officer

Since the last issue of Real Power it has been an exciting few months for the microgeneration and small wind industry. The sector now has a new Government Strategy as well as a new grants programme, with additional funding for microgeneration announced in the 2006 Budget, while the UK's whole energy policy is under scrutiny with the Energy Review consultation.

The Government's Microgeneration Strategy was published in March following a 6-month consultation period with industry and key stakeholders, with an objective "*to create conditions under which microgeneration becomes a realistic alternative or supplementary energy generation source for the householder, for the community and for the small business*".

The good news is that the Strategy aims to give long-term support for microgeneration technologies, with annual reports on the industry's development. The Strategy outlines key actions, some of which the Government wishes to act upon together with industry. These include initiatives such as a campaign for schools to install microgeneration technologies, further research into consumer behaviour, route maps on all technologies and a review of the permitted development rights order, which BWEA lobbied for in its submission to the consultation. With the latter, BWEA's newly established Small Wind Planning Policy Sub Group is leading work on the permitted development criteria for small wind turbines, including both the rooftop and free-standing technologies. Some of the detail in the Strategy is however lacking, particularly in how the Government intends to take all the actions forward and by when, but its commitment to review the Strategy on an annual basis is welcome.

Much of the Microgeneration Strategy also relies on the Climate Change and Sustainable Energy Bill going through. The Bill finally passed its Report Stage in the House of Commons on 17 March, going forward for its Third Reading scheduled for 12 May. Not only is the Bill supported by Parliament, it is also backed by all the major environmental and fuel poverty NGOs and all the relevant trade associations, acting through the Sustainable Energy Partnership. The Bill passing through Parliament is crucial for the microgeneration industry and will for instance allow the Strategy to introduce targets for the sector and provide a review of metering arrangements.

Low Carbon Buildings Programme

Together with the Microgeneration Strategy, the Government also announced details of the Low Carbon Buildings Programme (LCBP), which replaced Clear Skies in England, Wales and Northern Ireland in April 2006 and offers grants for domestic, community and larger microgeneration installations. The new programme is managed by the Energy Saving Trust, with technical consultancy provided by the Building Research Establishment.

In November 2005, Energy Minister Malcolm Wicks announced £30 million of funding over three years for the LCBP, which was followed by an additional £50 million from the 2006 Budget statement. The Government intends for this to be an opportunity for extra money to be spent by local authorities, schools, and other public bodies using their bulk purchasing capability in order to boost mass production and accelerate reductions in cost of mass market microgeneration technologies.

Under the LCBP there are two streams of funding available, Stream 1 (£10 million) offers funding for householders, small to medium enterprises and the non-profit community. Stream 2 (£18.5 million) offers grants for large projects from non-profit community organisations, businesses, building developers, energy services companies and the public sector. From the original £30 million, £1.5 million was carried forward to ease the transition between the PV and Clear Skies programmes, while DTI is still consulting on how best to allocate the additional £50 million.

The LCBP will also incorporate a new accreditation programme, which the industry expects to come online at the end of 2006 and will cover all technologies under the LCBP. BWEA's Small Wind Technical Sub Group will contribute to this work, particularly in the areas of small wind Health & Safety and technical standards, with BWEA/DTI stakeholder meetings set for the first week in May. These will look at the technical issues of small wind turbines, particularly in an urban environment. This is an area of work that requires the input of both manufacturers and other players in the industry, such as BRE, Loughborough University and the CCLRC Rutherford Appleton Laboratory. This work is expected to report to the BWEA Steering Group in the summer.

Energy Review

As part of BWEA's response to the

BWEA Small Wind Steering Group

The BWEA Small Wind Steering Group, chaired by Nigel Crowe from PMSS, had its first meeting in February 2006, and works towards agreed terms of reference with the ultimate goal of helping the small wind industry reach sustainable and commercial mass market status. Key objectives for the Group include accreditation and Health & Safety, planning, metering issues and bringing down the costs of technology. The Steering Group, and its Sub Groups in planning, technical, policy and communications, will meet four times a year, feeding into the wider work of the Association.

Events

Small Wind continued...

Energy Review, which calls for the Government to set a target of 20% of the UK's electricity to come from renewables by 2020, the Association estimates that small wind could provide 0.7% of that target, equivalent to around 0.5 terawatt hours (TWh) from the microgeneration sector by 2020, plus an additional 1,200 MW of small wind (20-100 kW machines) (2 TWh). At this early stage of the market it is not easy to predict the future level of market penetration for small wind, however, BWEA estimates that the sector may reach 5 TWh by 2030. More importantly the role of small wind will be crucial in adding to awareness building of energy issues at local and domestic level, and acting as a potential tool for behaviour change in energy consumption patterns.

Microgeneration, particularly small wind turbines have certainly reached an awareness point in the minds of policy makers', NGOs' and the general public. There has been a great deal of publicity in the media in recent months, most of it positive, though a few contradictory stories have started to appear in the press recently. BWEA's role is to provide a platform which allows the industry to develop and work towards best practice standards to ensure that this exciting sector reaches its full potential, creating a long term, sustainable market. □

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Small wind at bwea.com

BWEA has launched a dedicated section for small wind at its website. www.bwea.com/small has been designed as a first port of call to help anyone interested in installing a small wind turbine, including information on technology, grants, planning issues, frequently asked questions and case studies.

BRE/BWEA Small and Building Integrated Wind Event

On 30 March 2006, BWEA supported the second BRE/BWEA Small and Building Integrated Wind Event at Watford. The event attracted the interest of over 200 delegates ranging from Government and industry to local authorities, architects and construction companies. Speakers included Government officials (DTI, Ofgem), local authorities, wind turbine manufacturers and research bodies. The feedback from the day was that building-integrated wind still has several issues to deal with, including product standards, installation and communications. Since the event, BWEA has set up stakeholder meetings with the DTI regarding product standards and the promotion of small wind.

BWEA Annual Regatta 2006

BWEA's Annual Sailing Regatta, sponsored and organised by npower renewables, will take place on Tuesday 5 September 2006 at Port Solent, Hampshire. Last year over 40 boats participated and we hope to get an equally good turn out this year. SeaRoc were awarded the winners trophy at the BWEA Annual Gala Dinner, part of the annual conference & exhibition. An email will be sent to members with details on how to enter the 2006 Regatta shortly. Information will also be posted at the website - www.bwea.com/28. □

2006 Events Proving to Be a Hit with Industry and Stakeholders

by Helen Barnes, Head of Events & Marketing

Since the last edition of Real Power BWEA has held two successful conferences – one on wave and tidal energy and one on offshore wind.

Power & Opportunity

BWEA's sold-out marine conference 'Power & Opportunity' was held on 7 February at The Sage Gateshead, sponsored by npower Juice (see page 10). This event provided an opportunity for 250 representatives of the sector to gather and discuss the pertinent issues of the moment, which were triggered by the opening presentations by Malcolm Wicks discussing the Energy Review and Ben Bradshaw outlining the Marine Bill. Both Ministers provided a positive introduction to what evolved into a day full of interesting dialogue and fascinating expert insight into the potential future for this emerging industry. The conference was preceded by a trip to the New and Renewable Energy Centre followed by a drinks reception in the impressive Rooftop Restaurant at The Baltic Centre for Contemporary Arts sponsored by E.ON UK. BWEA would also like to thank Bond Pearce for sponsoring the name badges and the following companies who exhibited at the event: Bendalls Engineering, E.ON UK, Econnect, EGS Ltd, EMU, Faber Maunsell, Halcrow Group, NaREC, npower Juice Fund, Ocean Power Technology, PMSS, ReNews and TidalStream.

Offshore Conference

340 delegates gathered at the QEII Conference Centre in Westminster on 4-5 April to hear a wide range of detailed presentations on the development, construction and operation of offshore wind farms. These were sandwiched between lively debates on key topics in current energy policy debates, particularly the future of the Renewables Obligation, which is vital to the economics of offshore.

The opening session gave high-level perspectives from Government Chief Scientist Sir David King, Liberal Democrat Chris Huhne and Energy Minister Malcolm Wicks, as well as an insider's view from Anders Søe Jensen, recently appointed head of Vestas' offshore business. A number of respected commentators pitched in during an Energy Review debate chaired by the BBC's Stephen Sackur before parallel sessions took delegates into highly detailed territory.

Among presentations on foundation design, environmental impact assessment and health and safety, one of the most eagerly anticipated topics was grid connection. Only the week before the conference, Government had finally announced its decision on the regulatory regime for offshore transmission, and Ofgem put out a scoping document on the next steps in implementing this decision on the very eve of the event. Last-minute speakers from DTI and Ofgem gave the details.

BWEA would like to thank E.ON UK for sponsoring the official launch of the BWEA Wind Turbine Safety Rules at the evening reception. Members can find details on the WTSR at www.bwea.com/safety/wtsr_docs.html. Thanks also to the following companies, who exhibited at the event: The Concrete Centre, The Engineering Business, Engineering Magazine, Garrad Hassan & Partners Ltd, GE Energy, npower renewables, Oceanteam Power & Umbilical B.V., Siemens and SLP Energy. □

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Delegates at BWEA's marine conference at The Sage © BWEA

BWEA's marine conference was held at The Sage

Events Diary 2006

16-19 May 2006
WindEnergy International Trade Fair, Hamburg
www.hamburg-messe.de

24-25 May 2006
All-Energy Conference and Exhibition, AECC, Aberdeen
www.all-energy.co.uk

26-27 August 2006
Wind Weekend, accross the UK
www.bwea.com/events

18-21 September 2006
Global Windpower 2006, Adelaide, Australia
www.auswind.org/global06

10-12 October 2006
BWEA's 28th Annual Conference and Exhibition, SECC, Glasgow
www.bwea.com/28

BWEA28: Securing Our Future

10-12 October 2006, Glasgow

BWEA's 28th annual conference and exhibition will be held 10-12 October 2006 at the SECC in Glasgow, sponsored by ScottishPower Renewables. This event will see the gathering of around 1,000 representatives of the UK wind, wave and tidal energy sector, to discuss up-to-the-minute developments, meet new faces, do business and have a good time too.

Secure Your Stand – book and pay by 1 June 2006 for reduced rates

Over one-third of exhibition space has already been sold. To secure a good location at the only exhibition dedicated to the wind, wave and tidal sector, go online now to choose your stand and download the fax-back application form. Companies already signed up to exhibit include: A2SEA, Aberdeen Renewable Energy Group, Airtricity, Camcal Ltd & Western Isles Enterprise Co, Climate Change Capital, Clipper Windpower, Collett Transport, Densit, Econnect, Econnect, Envirolink Northwest, Enviros, Faber Maunsell, Gamesa, Garrad Hassan, GE Energy, LDA Design, Nexgen, Nordex, npower renewables, Nsure, PMSS, Proven Energy Ltd, ReNews, Repower, RES Group, ReSoft, RPS Group plc,

Scottish Development International, ScottishPower, SLP Energy, SLR Consulting Ltd, Tensar International Ltd, Triodos, Vestas Celtic, West Coast Energy, Wind Power Monthly, Wind Supply, WindPro and WindProspect.

Submit an Abstract – demonstrate your products and services

If you would like the opportunity to speak at the conference, which will include sessions covering offshore wind, onshore wind, wave & tidal energy and small wind systems, please go to www.bwea.com/28 and complete the new online submission form. The deadline for submission of abstracts is 30 June 2006. All abstracts are reviewed by a conference committee made up of BWEA Heads and Board Members.

Sponsorship – raise the profile of your company at BWEA28

BWEA is very grateful to all of the event sponsors signed up so far – ScottishPower Renewables (core sponsor), RES Group (lanyards/ name badges), GE Energy (delegate bags), npower renewables (conference programme) and WindPro (exhibition manual). If your company would like to raise its profile to the 1,000 industry representatives in attendance please contact Helen Barnes (helen@bwea.com).

Attending BWEA28

Online registration will be available shortly, along with information about getting to Glasgow (including how to offset carbon emissions if you have to travel by plane) and where to stay.

Embracing the Revolution in 2006

by Alison Hill, Head of Communications

With the obvious focus of BWEA's work on the Energy Review since the start of the year, the Embrace the Revolution campaign has been left to tick over by itself. However, BWEA is very pleased to report that new supporters are continually signing up to the campaign – an average 14 daily since the start of the year - meaning that over 19,000 members of the public have now pledged their support and are out there spreading the message.

And there's plenty more to come in 2006. BWEA will soon be commissioning the next in the series of the unique NOP Wind Tracker to establish if there has been any significant change in public opinion on 2005's average 77% of respondents who agree that wind farms are necessary to help meet current and future energy needs in the UK.

Meanwhile, BWEA is always on the look out for new celebrity champions for Embrace and is currently following up several good leads. If you hear or see anyone famous talking positively about wind energy, then do let us know and they could be the next to join the 'bank' of 34 celebrities from the worlds of design, architecture, music and media.

The big event in the Embrace calendar is of course Wind Weekend, to be held on the August Bank Holiday Weekend from Saturday 26 to Monday 28 August. BWEA already has several wind farms lined up to open their gates to members of the public and will be circulating full details to members shortly. BWEA will be preparing a support package for wind farm owners and operators who wish to take part in this year's Wind Weekend, including a toolkit on how to organise a public open day, suggestions for fun activities and prizes on the day, and pre-packaged messages and advertising for local media to raise public awareness about what's going on.

Last year's Wind Weekend saw 6,000 people visit 15 wind farms across the UK, from Aberdeen to Aberystwyth: this is a great opportunity to get local communities engaged with and interested in wind energy by providing them with a fun-filled and exciting day out, so BWEA hopes that even more wind farms will be welcoming even more members of the public during the second national celebration of wind energy! □

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In the News

Climate Change Watch

According to NASA, 2005 was the warmest year recorded on Earth's surface, with unusually hot temperatures recorded in the Arctic. All five hottest years have occurred in the last decade - the highest global average annual temperature years were 2005, 1998, 2002, 2003 and 2004. Visit www.giss.nasa.gov.

Warming temperatures are believed to be behind several glacier meltdowns across the world. Glaciers in Greenland are now releasing twice as much ice into the Atlantic Ocean than 10 years ago, according to research by NASA. As glaciers slide off the land faster, this could mean even faster than predicted sea level rise. In the meantime, large chunks of ice fell off Argentina's Perito Moreno glacier in March 2006, following an earlier 60 metre high wall falling off in 2004. It was the first time a significant piece had fallen of the glacier since 1986. In Switzerland, 84 out of 91 glaciers being observed during 2005 have retreated, with only seven remaining unchanged in the past year. Visit www.jpl.nasa.gov and www.glaciology.su.se/ICSI/general/wgms.html for more information.

Raising sea levels are leaving the UK's capital vulnerable according to the Government's Chief Scientific Adviser Sir David King. Speaking at a conference on climate change and investment in March 2006, King said "*The Thames Barrier was designed to be used once every two or three years and in that period after it was built in 1980, it was indeed used once every two or three years. We're now using it six times a year*."

According to the World Meteorological Organisation (WMO), greenhouse gases have reached their highest ever levels in the atmosphere. In 2004, CO_2 emissions, which account for around 90% of warming over the past 10 years, were 35% higher than in the pre-industrial age before 1750. CO_2 emissions in Britain are following suit and rose for a third successive year in 2005, though overall greenhouse emissions remained constant. Visit www.wmo.ch.

A study by the Energy Saving Trust has shown that local authorities in the UK are struggling to battle climate change. A poll of over 300 local authorities has shown that 82% do not believe they are making significant progress in tackling climate change, whilst 48% claim lack of support from councillors to be a key factor in limiting progress. 34% also said that they have experienced local resistance to some environmental schemes. Visit www.est.org.uk/housingbuildings.

Scientists have found that plants as well as animals may face extinction due to climate change resulting from CO_2 emissions linked to the burning of fossil fuels. The research, conducted by University of Toronto, found that global warming may be the worst case impact linked to human activity, worse than for instance deforestation, and may result in catastrophic species loss across the planet, but in particular in the tropical Andes, southwest Australia, California and South Africa. For more information, go to www.utoronto.ca.

Wind Power Intermittency Blown Out of Proportion

A new report from the UK Energy Research Centre (UKERC) on the costs and impacts of intermittent renewable energy has shown that variable generation from sources such as wind and other renewable technologies need not compromise electricity system reliability at any level of penetration foreseeable in Britain over the next 20 years. The report, *The Costs and Impacts of Intermittency*, is the most comprehensive assessment of the evidence on intermittency ever undertaken, reviewing over 200 studies on the subject.

Among the key findings of the report are that renewable energy, such as wind power, leads to a direct reduction in carbon dioxide emissions; 100% 'back up' for individual renewable sources is unnecessary; and that if wind power were to supply 20% of Britain's electricity, intermittency costs would be 0.5 - 0.8p per kilowatt an hour (p/kWh) of wind output, with the impact on electricity consumers around 0.1p p/kWh, or 1% of electricity costs. More details of the report are available at www.ukerc.ac.uk/content/view/258/852. □

Durham 1st County to Meet Renewables Target

The approval of a 12-turbine wind farm has made County Durham the first county in England to hit its renewable energy targets. The Banks Development project, located between Tow Law and Lanchester, was passed by Derwentside councillors in December 2005 meaning County Durham will hit its target of 82 MW of renewable energy generation by 2010.

In the News

EAC Report Embraces Renewables

The Environmental Audit Committee's (EAC) report "Keeping the lights on: nuclear, renewables and climate change" was published on 16th April 2006. Key conclusions from the report, which consulted widely with industry and stakeholders, show that by 2016 a quarter of the existing generating capacity in the UK will need to be replaced, while radical cuts are required in UK's carbon emissions to combat global warming. The report also shows that the earliest date on which nuclear could begin to contribute to the need for more generating capacity or to carbon reductions is 2016. Overall, the potential energy generating gap will need to be filled largely by an extensive programme of new gas-fired power stations, supplemented by a significant growth in renewables. After 2016 there are a number of alternative options, of which nuclear is only one. The report also calls the Government to establish a framework in which investment flows to lower carbon electricity generation technologies. Furthermore, the report recognises that more effort must be devoted to energy efficiency. The EAC was established in November 1997 and monitors the environmental impact of all Government departments. More details of EAC's reports are available at www.parliament.uk/parliamentary_committees/environmental_audit_committee.cfm.

Scotland on Track for Renewables; More Money for Wave & Tidal

Scotland is determined to become a world leader in renewable energy and has announced a £300,000 grant to help the European Marine Energy Centre (EMEC) in Orkney. The additional funding will allow EMEC, the world's first testing centre for wave and tidal energy technology, to establish the world's first quality control standards. First Minister Jack McConnell said the announcement will further position EMEC as a worldwide centre of excellence: "*I want to see Scotland lead the world in renewable energy. We may be a small country, but our renewable energy potential is massive. Scotland has both the natural resources and the talent to make that happen.*"

Meanwhile, a study has shown that Scotland is on course to meet its renewables target of generating 40% of its electricity from renewable sources by 2020. *Matching Renewable Electricity Generation with Demand* study by Edinburgh University found that to supply around 40% of renewable energy generation in Scotland would be equivalent to around 6 GW of capacity, which could be met by a mix of renewables including onshore wind, offshore wind, wave and tidal energy, hydropower and biomass. To download the study, go to www.scotland.gov.uk/Topics/Business-Industry/infrastructure/19185/20646. □

Shell Launches 1st Wind-powered Offshore Gas Field

Shell is developing the world's first offshore gas field which will be powered entirely by renewable energy. The Cutter project, which started up in the UK North Sea in April 2006, uses a platform powered by wind and solar energy. The project, which cost £80 million to develop and is jointly owned by Shell and ExxonMobil, is expected to produce around 1% of daily UK demand for at least 15 years. □

£50 Million Predicted to Local Economy from Highlands Wind Farm

The construction of a 43-turbine wind farm proposal for Lochluichart, Ross-shire, in the Highlands and Islands is predicted to make up to £50 million to the local economy. The Lochluichart project is estimated to benefit the local economy for around £10.4 million worth of civil engineering works and turbine foundations, with further £6.6 million estimated from electrical works and grid connection. Around £30.3 million are expected from the manufacture and installation of turbines and towers, and up to £600,000 from the design and development of the scheme. Once up and running, the Lochluichart wind farm is expected to generate enough renewable energy to power around 72,000 homes. □

EDF Starts Smart Meter Trial

EDF Energy, together with fuel poverty charity National Energy Action (NEA), has launched the EDF Energy Smart Metering Trial. The two-year trial will see the installation of up to 3,000 domestic electricity and gas smart meters, which will provide a means of generating accurate bills without estimating and provide customers and EDF Energy with information about how energy can be saved in the home and the impact on household bills.

In the News

Wind Businesses Scoop Awards

SCS Wins New Business Award

SCS, Solent Composites Systems Ltd, which was established in March 2004, was announced the Winner in "Best New Business" category at the Isle of Wight Chamber of Commerce Tourism & Industry Business Awards for Excellence 2005. The event, now in its 20th year, brings together the most successful Island based companies. SCS provides a portfolio of services in design development and manufacturing of wind turbine blade moulds and related component using its composite technology.

SCS was initially nominated for an Award in three categories, including the overall winner Business of the Year Award. Huw Radley from SCS commented on the win: "*Achieving the New Business Award is a fantastic result for our people who showed great faith and determination to perform as a world class business. Having been nominated for the overall winner category too is quite extraordinary and provides us with an exciting new challenge for next year*".

Queen Recognises ScottishPower

Scottish Power has been awarded the Queen's Award in Sustainable Development for its approach to renewables development. The award recognised that ScottishPower has adopted a highly sustainable and inclusive approach to wind farm project development, going beyond standard practice and regulatory requirements. Two particular wind farms were highlighted by the Award, the 97 MW Black Law in Central Scotland and 30 MW Beinn an Tuirc in Argyll. Black Law was constructed on the site of an old opencast mine which was completely restored to shallow wetlands during construction, while Beinn an Tuirc was designed to cater for the local environment through a detailed habitat management plan.

Good Energy Founder Wins Women in Ethical Business Awards

Founder and Director of Good Energy, Juliet Davenport, has won the Women in Ethical Business Awards - an award which celebrates the best female run ethical businesses in the UK. Good Energy supplies 100% renewable electricity from the power of wind, sun or running water, buying a unit of electricity from a renewable power source for every unit of electricity used by a Good Energy customer.

GE Invests in Wave Energy Company

GE Electric Co's Technology Lending unit, together with GE Energy Financial Services, is lending $2.6 billion to Ocean Power Delivery Ltd (OPD), a developer which GE describes as the first commercial facility to generate electricity from offshore ocean waves. GE will also take an equity position as OPD's $22.5 million equity raising with the aim of delivering first commercial contract for a wave power farm.

OPD manufacturers a 750 kW Pelamis Wave Energy Converter. The company's first project is developed by a Portuguese consortium that will install the system to generate enough electricity to meet the demands of more than 15,000 Portuguese homes while reducing carbon dioxide emissions by about 60,000 tons per year. □

Livingstone Plans Britain's Largest Eco-development

The Mayor of London Ken Livingstone plans to build Britain's biggest eco-development in east London. Greenpeace, the London Development Agency and engineering consultancy Arup are developing the project, which is modelled on a sustainable city being planned in China. The project will involve up to 1,000 homes at standard cost, with an objective to make zero emission homes that are powered by renewable energy such as micro wind power.

Simon Reddy, Policy and Solutions Director at Greenpeace UK said: "*The UK is way behind the rest of Europe when it comes to energy efficient buildings. By working with the Mayor of London we hope set new standards for sustainable living and set the benchmark for all new developments, something Central Government should have done years ago.*" □

Community Project Shares Sell Like Hot Cakes

Westmill Wind Farm Co-operative's share offer, which ended at the end of February, was immensely popular with around £4.3 million sent in over the 3-month public share period. As the scheme was over-subscribed, investors had to be scaled down to those who live in the local area.

Westmill Wind Farm Co-operative plans to build the UK's largest community-owned wind farm in Watchfield, Oxfordshire and is in final stages of contract negotiations starting on site late Summer 2006. □

In the News

2005 Record Year for Global Wind Power

According to figures from the Global Wind Energy Council (GWEC), 2005 was yet another record year for the global wind industry. A total of 11,769 MW of new installed capacity were installed, equivalent to a 43.4% increase in annual additions .

The total installed wind power capacity now stands at 59,322 MW worldwide, an increase of 25% compared to 2004. The countries with the highest total installed capacity are Germany (18,428 MW), Spain (10,027 MW) and the US (9,149 MW). India (4,430 MW) has overtaken Denmark (3,122 MW), while a number of other countries, including Italy, the UK, the Netherlands, China, Japan and Portugal have reached the 1,000 MW mark of installed capacity.

In terms of new installed capacity in 2005, the US leading with 2,431 MW, followed by Germany (1,808 MW), Spain (1,764 MW), India (1,430 MW), Portugal (500 MW) and China (498 MW). Europe is still leading the market with over 40,500 MW of installed capacity at the end of 2005, representing 69% of the global total.

US Wind Industry the Most Productive

According to the American Wind Energy Association (AWEA), the wind industry across the pond grew at a record-breaking rate in 2005, installing 2,431 MW of new capacity across 22 states. The US wind power capacity grew by 35%, to a total of 9,149 MW. Out of the 30 US states which have installed wind energy California has the most capacity at 2,150 MW. FPL Energy is the largest wind farm developer, while GE Energy has supplied most of the new wind turbine capacity. AWEA predicts that the US market will see further growth this year, with 3,000 MW of new capacity predicted to be built in 2006. □

Sweden Plans to Become World's 1st Oil-free Economy

Sweden is looking at becoming the world's first oil-free economy, without building a new generation of nuclear power stations. An oil committee of industrialists, academics, farmers, car makers and civil servants is drawing up plans, whereby the country would replace all fossil fuel generated power with renewable energy by 2020. At present most of Sweden's electricity comes from nuclear and hydroelectric power, and almost all its heating is produced by systems which distribute steam or hot water generated by geothermal energy or waste heat. In 2003, 26% of all the energy consumed in Sweden came from renewables, while only 32% came from oil, down from 77% in 1970. The oil committee is expected to recommend further development of biofuels and the expansion of other renewables such as wind and wave power. □

First Offshore Projects for Germany and the Netherlands

Germany has installed its first offshore project, a 2.5 MW single turbine manufactured by Nordex, just off Rostock Harbour. The project was developed by WIND-Projekt and is a second 2.5 MW Nordex installation, following an installation previously in Frederikshavn, Denmark. The area off Rostock, the Darss peninsula, is the planned site for a 54 MW wind farm Baltic 1.

Meanwhile, the first Dutch large scale offshore project started construction in April 2006. The Noordzee Wind project is a joint venture between Shell and Nuon Renewables, consisting of 36 Vestas V90-3MW wind turbines. The 108 MW offshore project is expected to generate enough power to meet the annual electricity needs of over 100,000 Dutch homes.

India takes over UK in Renewable Energy Country Attractiveness

Latest estimates from the Ernst & Young Renewable Energy Group show that with the exception of offshore wind, UK has dropped to the 4th place in the latest Renewable Energy Country Attractiveness Index as India rises to the top.

The All Renewables Index, which tracks the world's most attractive national environments for forward investment in renewable energy, also shows that growth in the US and Spain also remains strong. The Index also recognises that micro-scale and building integrated renewables offer significant carbon saving potential in the UK but may require innovative financing solutions to be implemented at a large scale.

Jonathan Johns, Head of Renewable Energy at Ernst & Young, said, "*The UK is being left behind in the renewable energy race as the onshore markets of the US, Spain and India experience sustained levels of growth.*" □

Big Players Look to China

Vestas, the world's largest wind turbine manufacturer, is planning to establish a factory for the assembly of nacelles and hubs in Tianjin, China. The factory will employ around 225 people and Vestas expects it to deliver the first nacelles and hubs during the first half of 2007. Vestas is investing around 19 million euros in the plant, which is expected to have an annual production capacity of around 350 nacelles and hubs.

Meanwhile, GE Energy is supplying wind turbines for one of China's largest wind projects to date. The Jiangsu Rudong Concession II Wind Project in Jiangsu Province, due for completion in 2007, will use 100 GE 1.5 MW turbines, adding 150 MW of wind power capacity to China's electricity grid. GE Energy's wind portfolio in China so far includes five projects, with a total of 145.5 MW. Once the Rudong project is completed, GE Energy will have nearly 300 MW of wind energy in China, producing enough renewable energy to power almost 300,000 Chinese homes.

In January 2006, the Chinese Government's Renewable Energy Law came in to force, boosting the country's commitment to renewables. China now has a renewables target of 15% by 2020, including a requirement for power companies which have an installed capacity of more than 5,000 MW to generate 5% of their electricity from renewables by 2010, rising to 10% by 2020. If China continues its renewables drive, wind turbines may one day replace hydropower as China's second-largest source of electricity. According to Beijing's Tsinghua University, China has the potential to install 30,000 MW of wind energy by 2020, and the total wind capacity could reach up to 100 GW, equivalent to nearly one fifth of the country's total current generating capacity. □

BWEA Publications

Onshore Wind: Powering Ahead

BWEA published the most comprehensive and realistic assessment ever undertaken of the UK's onshore wind industry in March 2006. *Onshore Wind: Powering Ahead* shows that by 2010, the onshore wind industry will generate 50% more electricity than previously predicted, delivering nearly half of the Government's 2010 renewable energy target. The industry will have installed 6,000 MW of wind power capacity, generating almost 5% of UK electricity supply and avoiding up to 13 million tonnes of CO_2 emissions. The report, part of BWEA's contribution to the Government's Energy Review consultation, takes into account potential barriers such as the planning process, decision-making and grid capability. The report is available to download at www.bwea.com/pdf/OnshoreWindPoweringAheadFull.pdf.

Offshore Wind at a Crossroads

BWEA, together with Renewables East, the renewable energy agency for the East of England, released a report *Offshore Wind at a Crossroads* in April 2006. The research, which fed into the Government's Energy Review, shows the sector is capable of meeting some 6% of the UK's power needs by 2015 but additional support is needed. Without additional Government intervention the roll out of the UK's major offshore wind programme risks being stalled. As a result the enormous environmental and economic potential of this sector may not be fully realised and the opportunity for the UK to be a world leader could be missed. The full report is available at www.bwea.com/pdf/OffshoreWindAtCrossroads.pdf.

The Wind Turbine Safety Rules (WTSR)

Following the second BWEA Health & Safety seminar, BWEA launched a new set of guidelines for the UK wind industry in April 2006. *The Wind Turbine Safety Rules (WTSR)* specify actions and procedures which have to be followed in order that persons working on wind turbines are safeguarded from inherent dangers that exist from the installed electrical and mechanical equipment in wind turbines. Developed jointly by owners and manufacturers, the WTSR have been successfully trialled and are endorsed by BWEA as representing industry best practice for operational wind farms, and the Health and Safety Executive. For more details, visit www.bwea.com/safety/wtsr_docs.html.

Marine Device Book

Last year BWEA, together with its Marine Focus Group members, produced a *Marine Device Book*, a guide to all the available marine renewable devices in the UK. Due to popular demand, the guide has now been reprinted with updated details on the sector. Printed copies of The *Marine Device Book* are available from BWEA.

UN Wind Map Shows Potential in Developing World

Wind energy has bigger than expected potential to generate electricity in developing countries and help meet energy demand amid rising oil prices. Wind maps produced by the Solar and Wind Energy Resource Assessment show that countries such as Nicaragua and Vietnam have great potential, with around 40% of their land area suitable for wind farms. The maps can help developing countries make reliable judgement on their resource and encourage investment. Previously only 1% of developing nations were estimated to have sufficient wind conditions - for instance Nicaragua's wind resource was previously estimated at 200 MW, while the UN map shows it to be 40,000 MW. Visit swera.unep.net/swera. □

Representations

Consultation Responses and Presentations

BWEA has yet again been busy representing the wind and marine renewables industries at various events and conferences, as well as responding to several consultations that have an effect on the industry, particularly so in this quarter with the Energy Review consultation. BWEA has also been active in its media work, giving several interviews to various local and national newspapers and radio programmes.

In addition to the Energy Review, other consultations responses in this quarter include the Code for Sustainable Homes, and several responses to local planning representations. □

Consultation responses

Subject	Date
Our Energy Challenge Securing clean affordable energy for the long-term - BWEA's response to the 2006 UK Government Energy Review	16/04/2006
Energy Review - Executive Summary	16/04/2006
Energy Review - Appendix A: Onshore Wind: Powering Ahead, an analysis of the UK onshore wind industry to 2010	16/04/2006
Energy Review - Appendix B: Offshore Wind: At a Crossroads, an analysis of the UK offshore wind industry to 2015	16/04/2006
Energy Review - Appendix C: Marine Renewables	16/04/2006
Energy Review - Appendix D: Delivery & economics in 2020: the contribution of wind, wave and tidal power to UK power supplies	16/04/2006
Proposal for introducing a Code for Sustainable Homes	06/03/2006
10 Local Development Plan responses (BWEA members only access)	

Download responses from the BWEA website

BWEA policy and consultation responses are available at www.bwea.com/ref/consultation-responses.html. BWEA's planning representations are available to the members of the Association; go to www.bwea.com/membersarea. □

BWEA Presentations

Presentation	Event/Organisation
Onshore Wind: Powering Ahead - presentation of BWEA's robust analysis of onshore wind delivery to 2010	PRASEG Wind Group Seminar
Making Waves, Turning Tides: The Politics of Support and the Challenges Ahead	BWEA Marine conference, Gateshead
The role of wind energy in delivering the 2010 target and future renewable energy support	SRF annual conference
Offshore Wind: At a Crossroads	BWEA Offshore conference, London
Power & Potential of Small Wind Energy	Ecobuild London
The Future of Marine Energy	Coastal Futures Annual Conference, CMS, London
Offshore Wind in the UK: Status and Plans	Aquaculture Stakeholder Workshop, London
An Offshore Renewables Perspective	Socio-economic Objectives Workshop, CMS/Cefas, London
Embracing the Revolution	Children's Society, London

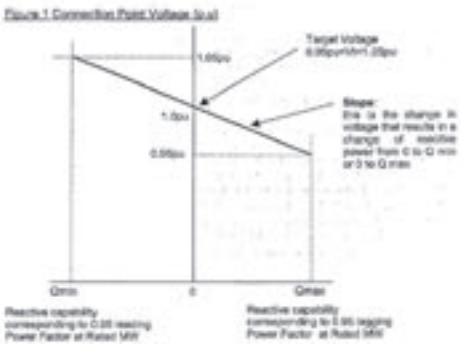
Grid Code Compliance - Voltage Aspects

by Paul Glendinning and Mark Halliday, Econnect Group Ltd

Changes to both the Irish and GB Grid Code in 2005 have brought about additional technical requirements for wind parks, which include reactive power and voltage control. These particular requirements have brought about a fair amount of concern and frustration to wind farm developers.

We in the Econnect Group have been following these changes and working closely with both manufacturers and grid operators to clarify the technical requirements and to assist wind farm developers by providing cost-effective solutions. Our strategy has been aimed specifically to ensure that developers can connect the maximum amount of wind generation to the electrical networks of Great Britain and Ireland.

The voltage control requirement is made up of two main aspects, that of steady state performance and transient voltage control. With respect to the steady state performance requirements (section 6.2.2.1 of a Bilateral Agreement) for voltage control the wind farm is required to provide continuous steady state voltage control of the voltage at the User System Entry Point with a 4% voltage slope characteristic to a target voltage of between 0.95pu to 1.05pu.



Source of illustration: National Grid

For the transient voltage control requirements (section 6.2.2.2 of the Bilateral Agreement) of the Grid Code the wind farm voltage control system is required to be capable of achieving 90% of the steady state change in reactive power, in a time not exceeding 1 second.

This is an onerous requirement for most wind turbines and we have found that, even if the wind turbine as an individual unit can get close to the requirement, the wind park as a whole requires co-ordination and further compensation. This is due to the electrical impedances in the network between the connection of the project at the 'User system entry point' and the LV connection of the prime movers. The technical data submitted from wind turbine manufacturers to developers mostly encompasses information given at the LV terminals of the converter / machine, however, this then needs to be modified further to include for transformers and reticulation system losses.

Many technical solutions proposed require a DVAr unit and/or other compensation requirements to be installed at the wind farm substation, which forms the controlling point for the grid operator. This substation equipment is surprisingly large and wind developers will be required to apply for planning permission for the space in the substation. Econnect has found that the space required is more than double that of a 'normal' substation.

Econnect Construction Ltd, part of the Econnect Group, has the capability to design and build the 'Grid Code Equipment' necessary to meet the requirements for voltage control and reactive power capability. Econnect Construction is currently involved in the first project of this type, the 37.5MW Earlsburn project located in Scotland, where the turbine supplier is Nordex and the distribution network operator is Scottish Power.

Figure 1 shows a graph from a study that was performed at Econnect Construction, with the assistance of Durham University, to illustrate the voltage recovery of Econnect Construction's proposed step change design using a 'Hybrid' solution. This hybrid solution does not use a fully rated DVAr unit, but it is ably assisted by the use of capacitors and reactors, which allow for both reactive power and voltage control operation in either direction (leading or lagging) from unity.

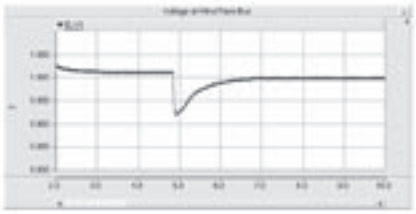


Figure 1 – Voltage Recovery Graph

The technical requirements for voltage control, and subsequently the solutions, are becoming clearer as time moves on. The key aspects for any wind developer are to ensure that they allow sufficient substation space for the required electrical equipment and to budget for the costs of Grid Code compliance into the project finance. The Grid Code compliance testing required at the commissioning stage of a wind park is three to four times that previously carried out on typical wind farms, therefore developers should also allow for this in terms of cost and project programme. □

Real Power is published by BWEA, the professional association championing the UK wind and marine renewables industry, representing over 320 companies active in the sector.
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