Policy actions for wind, wave and tidal energy in the UK

RenewableUK

MANIFESTO 2010

Contents

Foreword

RenewableUK is the new name for the British Wind Energy Association, the largest renewable energy business association in Britain.

We represent over 540 corporate members in the wind, wave and tidal energy sectors. Our mission is to champion the deployment, generation, and use of renewable power.

This manifesto is our contribution to the debate about the future role of renewables in the energy market and the wider economy. It sets out an ambitious policy agenda to deliver a renewables revolution, so that within ten years one third of the UK's power supply will be generated by clean renewable energy.

The next UK government will direct the transformation of the British economy to sustainability. This will include preparation for the complete decarbonisation of the power sector by 2050, if not earlier. The production at scale of wind, wave and tidal energy will deliver the largest single contribution to this goal, and can help create significant numbers of new manufacturing and service jobs in the low carbon economy.

In addition, by developing new low carbon retail investment opportunities, and by enhancing the ability of individual action through the roll out of small scale Feed-In tariffs, the next UK government can ensure that our transition to a low carbon economy will derive the widest possible public benefit.

We look forward to working with Ministers, Parliamentarians and Officials over the next five years to ensure that we reap the benefits of our fantastic natural resources and secure Britain's sustainable future for all.

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RenewableUK Manifesto

The UK faces a one-off transformation to sustainability.

This transformation will create jobs, enhance national security and deliver long-term economic growth through low carbon innovation. To fulfil international obligations and domestic energy and climate change commitments, the next Government will oversee the deployment at scale of significant amounts of renewable energy generation.

To better enable this deployment, there is a series of public policy objectives that must be delivered. Above all else the UK needs strong political leadership and commitment to deliver its renewables targets:

Public Policy objective	Policy action required
Delivery of new jobs and investment by enabling low carbon manufacturing and service sector development	The Government must take a pro-active lead in identifying and selecting the lead candidate regions and ports to become manufacturing and research clusters for offshore wind and other marine renewables.
Delivery of widespread public participation in the low carbon economy	The Government must enable popular take-up of small scale renewable energy through a realistic Feed-In tariff, and by enhancing individual opportunities to invest in low carbon initiatives through new "Green" retail investment schemes.
Delivery of renewable electricity generation at scale in difficult economic conditions	In the absence of a realistic carbon price, the Government must continue to provide investment certainty by maintaining the RO mechanism.
Delivery of renewable electricity generation at scale at a local level	The Government must retain regional planning structures, or ensure that any reform enables national energy priorities to be delivered promptly at a local level.
Delivery of renewable electricity generation at scale to benefit the consumer	Ofgem's remit should be reformed to make its primary duty the facilitation of the Government's energy policy objectives, including tackling climate change, at least cost to the consumer.
Delivery of renewable electricity generation at scale while safeguarding civil and military aviation	Government should establish a central funding mechanism for upgrading national RADAR assets to better enable the deployment of new wind energy generation without compromising air safety.

01/

The Renewables Challenge

The United Kingdom is facing a one-off transition to energy sustainability.

Driven by the necessity to decarbonise our power sector, this opportunity can deliver new jobs, enhance energy security and deliver long-term economic growth through low carbon innovation.

Within the next 15 years a full third of our existing electricity generating capacity will be permanently retired as the aging nuclear fleet reaches the end of its life and heavily polluting coal and oil plants are taken out of service.

As Britain races to replace this stock with a new power supply the world will also reach the 'tipping point' for climate change. The emerging scientific consensus is that we have little more than a decade to stabilize global temperatures and prevent a rise of more than 2 degrees so as to avoid catastrophic and irreversible climate change. The UK will have to play its part by reducing its greenhouse gas emissions by at least a third from 1990 levels by 2020.

All this will take place against a background of significant spending restraint where rising energy costs over the short-term caused by the need for new infrastructure will challenge the political will to secure our energy supply and tackle global warming.

The UK must find a way of balancing the many demands made on our energy policy. We need new domestic sources of energy which free us from reliance on increasingly costly imported fossil fuels, allowing us to dramatically cut carbon emissions, while at the same time pushing down prices paid by consumers.

Fortunately, Britain is blessed with just such resources. Renewables, led by wind, are the great hope for the future if the UK is to meet its energy needs and significantly reduce its greenhouse gas emissions.

In addition, the UK has the opportunity, by creating new investment schemes such as "Green Bonds" and "Green ISAs", as well as enhancing the opportunities for individuals and communities to take advantage of their own renewable generation through Feed-In tariffs, to ensure widespread popular participation in this transition to a low carbon economy.

The UK is already committed to generating 15% of all its energy from renewable sources by 2020 through its legally binding obligations to the EU, and the majority of this target will be met by the generation of renewable electricity.

This is a tough challenge, but it must be met if Britain is to fully decarbonise its energy sector while ensuring security of energy supply.

Renewables, especially wind, must become an everyday part of our society and economy. Other forms of renewables will play their part too, and some, like wave and tidal technologies, are likely to play an increasingly prominent role in the 2020s and beyond – but for the next decade it is wind that offers the most achievable solution.

By 2020 there must be a seven-fold increase in the amount of total renewable energy used in the UK, rising from a low base of just 2 per cent today to 15 per cent.

Such demands mean total capacity derived from wind, both on and offshore, will have to increase from 4GW today to over 30GW by 2020.

It is easy to be overwhelmed by the task ahead, and to question not just whether it is realistic to expect renewables to expand fast enough to meet the 2020 targets, but whether this is even possible.

But quite simply, the targets can and must be met.

Already there are 4GW of wind installed and a further 9GW are either being built (~2GW) or have planning permission and are going into construction (~7GW. By the end of 2012 there should be 10GW of wind energy operating in the UK.

When the 10GW of schemes that are waiting for planning permission is added to the total there is over 23GW of wind plant in development in the UK.

This does not include the 32GW of offshore wind licences recently awarded by the Crown Estate in the Round 3 process.

Taken together the 30GW by 2020 horizon seems less distant.

Beyond 2020 there is even greater potential for renewables as offshore wind continues to grow, wave and tidal power come into their own, and small-scale on-site systems become more widespread.

The expansion of offshore wind in particular will provide an opportunity to create a thriving new manufacturing sector in the UK over the next decade by attracting wind turbine manufacturers to open factories here and stimulating the creation of a component supply chain produced by British companies. As important as attracting this new investment will be maintaining and enhancing the health and safety of those employed in the renewables sector. The UK wind sector is a world leader in health and safety and will continue to develop safe working systems as the industry moves into more challenging environments.

It won't be easy to deliver the 30GW of wind we need by 2020 and there are plenty of obstacles ahead that will have to be removed, but, given the right commitment, it can be done.

By 2030 the UK will have an energy system that will be the envy of the world – one that enables us to tackle climate change, secure our energy supplies, keep down prices and create thousands of new green-collar jobs.

That is the Renewables Challenge.

02/

The obstacles to building a UK renewables sector

The UK's energy supplies are on the cusp of a revolution, as renewable generation moves away from the margins of electricity production and becomes a mainstream player.

To complete the revolution, onshore wind farms will need to increase the number of homes they supply with electricity from just over two million today to almost seven million by 2020. The task is even bigger in the offshore sector. Wind developers are currently bringing forward nearly 50GW worth of sites, which would represent over £120 billion of private investment and create thousands of green-collar jobs.

However, there are a range of policy issues that could stand in the way of delivering that revolution, such as market stability, planning, aviation, grid access, and skills shortages

The need for a supply industry is another issue that must be addressed.

One of the lessons from the past is that if the UK is to be a world leader in offshore wind, wave and tidal technologies, it must create a support infrastructure.

This means the country needs geographic centres of renewable energy, just as Aberdeen is a hub for the oil and gas sector. Such hubs have been created in Denmark and Germany to support the onshore wind sector with all the goods, services and skills it needs.

As the renewables sector expands it needs a much bigger supply of workers with suitable skills. Failure to train enough people in the right skills will slow or even halt growth. Action is needed to encourage the take-up of science subjects at school, relevant engineering degrees at universities and courses allowing existing workers to develop their skills.

Market stability through an adequate renewable funding and financial support mechanisms and a transparent regulatory framework is also vital to the expansion of the industry; if the UK is seen as an unstable or risky market we will miss out on the huge investment necessary.

Long-term market confidence is crucial to underpinning business investment, and to this end mechanisms are needed to ensure that investors have confidence in the UK's renewables industry and regulatory regime.

The planning system has historically been difficult for the industry to negotiate and reforms are needed to speed up the process – for example, in England, the average onshore wind farm project waits 17 months for a decision by local planning authorities and only 25% of applications are approved.

Streamlining is essential if projects are to avoid becoming trapped in the system for years, and close attention needs to be paid to getting the process right in the developing offshore sector.

Despite the difficulties and complications involved in providing the renewables sector with adequate support

from government and other agencies, the effort will be worth it. At stake is the chance for the UK to build a world-beating industrial base while tackling climate change and security of supply, the two biggest issues of our time.

The tension between radar and the wind industry is one of the biggest issues facing the industry, and must be solved if the UK is to meet its 2020 renewable energy and greenhouse gas targets.

BWEA estimates that at around 4GW of wind farm developments in the UK planning system in 2009 were blocked because of radar issues, and aviation objections are likely for proposed developments of a further 5.5GW still in the pre-application stage of development. These objections, justified or not, cause serious delays to the construction of renewable installations. Radar objections will also be a significant concern for Round 3 offshore wind developments, particularly for the network of MoD Air Defence radar and NATS En Route infrastructure.

The UK's transmission network was built for a different age, developed with large fossil fuel power stations in mind, but with the rise of renewables in the twenty-first century a new approach is needed, especially as much of the grid infrastructure is coming to the end of its life – 60 per cent needs to be replaced or upgraded within the next decade. In addition wind, wave and tidal technologies are dependent on elemental forces which, except for small generating systems, are frequently located well away from established infrastructure.

Financial support

Developing new technologies is an expensive business, especially for an industry dealing with the forces of nature, and long-term confidence is essential if investors are to be attracted.

The Renewables Obligation (RO) has underpinned development, providing investors with confidence in the market. The RO should be retained as the principle support mechanism for renewables. Any move to replace or undermine it will damage investor confidence and create an investment hiatus that would seriously impair our ability to fulfill our climate change commitments. But there are other funding issues further down the supply chain that must also be tackled if the UK is to develop successful manufacturing industries in wind, wave and tidal power.

Failure to secure appropriate support for research and development and manufacturing risks a repeat of the events of the 1980s and 1990s, when a lack of backing resulted in the UK losing out on the chance to lead the world in onshore wind manufacturing.

Instead of the UK it is Denmark which is currently the world leader in onshore wind, with more than 50 per cent of the turbine market. Its number one position and annual revenues of £2.7 billion were secured by the Danish Government's farsightedness in instigating support measures worth £1.3 billion since 1993.

The offshore wind market is now regarded as the big prize in renewable energy and BWEA is determined that this time it will be the UK that takes the lead.

There are further benefits to be gained in the marine renewable and the small wind sectors. Policymakers have advanced the cause of both sectors recently, with feed-in tariffs for small wind and new funding for marine energy, but if the UK is to maintain its lead even more measures need to be taken.

Planning

The planning process offers the UK renewable energy sector the opportunity either to sail ahead of its international rivals, or to become mired in red tape and 'nimbyism'.

With the right measures taken at central, regional and local level the promised streamlined system will fast-track renewable developments – big and small – and create a system which allows wind, wave and tidal energy to thrive.

It is vital that wind and other renewable forms of energy are built and put into operation as soon as practically possible if the UK is to meet its 2020 obligations.

Should the planning system fail to evolve rapidly to meet the needs of renewable developments it is hard to see how the UK can hit its 2020 targets.

BWEA has identified a range of measures that we believe should be taken quickly to improve the planning system.

Among them is the need for the Government to honour its commitment to introducing a streamlined system, a move that should bring about significant improvements in the time it takes to get a development off the drawing board and into operation.

There are other measures which must be taken, such as the introduction of compulsory training for planning committee councillors and adequate funding and resourcing of the organisations that have a statutory duty to assess proposed developments.

Skills and supply chain

Skills and supply chain issues for the renewable energy industries are closely intertwined. Only if a strong UK-based supply chain is established, can we unlock the industry's potential for job creation and foster the business environment to attract, build and sustain enterprises across it. However, the UK needs a strong, constant stream of individuals with core skills in order to attract new industrial investment in the renewables sector.

There is an acute skills shortage in the renewables sector, with a severe lack of skilled technicians and professional engineers. Basic skills in science, technology, engineering and mathematics (STEM) are a requirement for both vocational and higher-skilled roles; however, the funding regime for skills training is

bureaucratic and confusing.

The creation of specialist hubs along the coast to support offshore wind developments and the emerging wave and tidal sector are vital to the future growth of a UK manufacturing base. Efforts have already begun to encourage coastal towns to show interest in becoming renewable energy hubs, just as clusters of wind power businesses have become established in Jutland in Denmark, and Rostock, Bremenhaven and Husum in Germany. Aberdeen, which is at the heart of the UK oil and gas industry, has already expressed interest in becoming the renewable hub port, as have the Humber Estuary ports.

The establishment of a confident, growing supply chain is important, not just to ensure quick and efficient construction and maintenance, but also to bring down costs through increased competition, currency effects and other factors. Quality, fitness for purpose and value for money are the keys to buyer interest and orders being placed.

Grid

Getting connected to the Grid is a problem faced by every type of electricity generator. The renewable energy sector faces some issues specific to its technology.

Getting grid connection is a particular problem for the industry and can delay the construction and operation of wind farms by several years. Rising energy needs alone mean that the grid will need to be extended. The UK's grid infrastructure was built to transmit a maximum of 75GW of electricity, but by 2020 it will need to be able to cope with as much as 120GW.

The renewables sector welcomes the recent changes to Ofgem's remit to make its focus more long-term and strategic. However, Ofgem must still be less risk averse than it is currently, as it must act as a facilitator for the Government's renewable energy objectives and provide incentives to connect renewables to the grid quickly. In effect, what we need is a regulatory regime that encourages network operators to invest strategically ahead of need, which, in the long run, will deliver a lower-cost solution for the customer.

Moreover, a smarter approach to the grid is needed in an era when wind, wave and tidal technologies are expected to play an increasingly important role in keeping the lights on in the UK.

BWEA believes that Smart technology, including monitoring and control centres, must be adopted for the grid to offer the flexibility necessary to maximise renewable electricity generation.

Aviation

BWEA estimates that approximately 4GW of wind farm developments in the UK planning system in 2009 were blocked because of radar issues; furthermore, 1.3GW of projects are consented with radar issues to resolve, and an additional 5.8GW are in the pre-application stage with known objections from military and civil aviation stakeholders.

The wind industry, military and civil aviation agencies and Government departments are already working together to resolve this issue. After signing a Memorandum of Understanding with these parties in 2008, BWEA members set up a special industry-funded company – the Aviation Investment Fund Company Ltd – with a £3 million budget to research new technical solutions to radar issues, and 2009 saw the two first contracts committed.

However, wind industry investment into research and development alone will not solve this issue. Serious consideration needs to be given to the upgrading and replacement of ageing national radar infrastructure in order to cope with the reflections from wind turbines.

There are 17 NATS En Route radar sites and in excess of 40 military Air Traffic Control radar; upgrading each would cost approximately only around £0.5–0.75 million. Upgrading all of these would require an investment of between £30-50million. If only the sites currently affected by turbines were upgraded that figure would be approximately halved.

03/

Onshore Wind

Onshore wind farms in the United Kingdom supply electricity to more than two million homes and are playing a vital role in reducing the nation's dependency on fossil fuels.

In less than 20 years since the first wind farm was built at Delabole in Cornwall with ten turbines and a total capacity of just 4MW, onshore wind has expanded to become a 3.4GW industry.

There are now more than 240 wind farms in the UK with a total of well over 2,500 turbines, reducing the nation's carbon emissions by almost 4.5 million tonnes annually. The innovative Cornish development completed at the end of 1991 was modest compared to most modern wind farms which comprise significantly greater generation capacity.

Turbine technology has advanced rapidly and turbines now generally stand up to 125 metres high. Most have a capacity of between 2MW and 3MW (five to seven times larger than those at Delabole). In the UK we have the best wind resource in Europe so the country is uniquely placed to tap into it as a source of renewable energy.

Developers are keen to play their part in helping the UK limit the extent of global warming by transforming Britain into a low-carbon economy. A succession of projects is already in the pipeline as the industry expands rapidly, and the sector is confident that it can more than treble onshore capacity to 14GW by 2020.

Reaching that figure, which will be crucial if the UK is to meet its 2020 renewable target of 15%, will require assistance from policy-makers in removing the four main obstacles currently hampering progress: market stability and project finance; planning, community involvement and aviation objections; skills shortages; and grid.

Finance

Issue

The fundamental attractiveness of investing in onshore development has deteriorated significantly in recent times: Sterling–Euro devaluation, leading to increased turbine costs, expensive financing and falling power prices have dealt the industry a 'triple whammy'.

Access to capital has been severely hit by the credit crunch, with a dramatic fall over the last year in the number of projects securing backing. Only one major project financing deal closed in 2009 amounting to 24MW of capacity and £36 million of debt. The European Investment Bank (EIB) initiative, launched in November 2009, is a welcome development but has yet to open the floodgates of capital and is restrictive in terms of conditions and beneficial rates.

Rebuilding investor confidence will require consistent policy and long-term continuity. The UK is already seen as a potentially risky place to invest because of regulatory uncertainty, and care should be taken not to further discourage investment through unnecessary changes to the policy and financial support framework.

The continued development of the wind industry is essential if Britain is to meet its 2020 renewable targets. The following two measures are essential for continued investment in onshore wind.

Solution

1. Maintain the Renewables Obligation (RO) and keep it at its present level for onshore wind at least until the scheduled five-yearly RO review, due to happen in April 2013.

2. We urge the Government to refrain from imposing any additional financial burden on the industry, such as the proposed rise in business rates.

3. The contribution made to local economies by renewable energy projects should be recognised by the Government in the form of ring-fencing the full amount of business rates they pay.

Planning

Issue

Regional structures and decisions can often seem distant from communities that they affect, however they play an important role in coordinating decisions which impact on more than one council area. The English regions are already 50 per cent short of their own 2010 targets, and without some form of standardised mechanism for coordinating decision-making there is a real danger that the UK will not be able to deliver the scale of development needed for 2020.

Studies designed to identify potential capacity and targets at regional level fail to follow the same assessment criteria. This causes delays and wasted time and money, especially when planning applications go to appeal.

Multi-million-pound renewable schemes, which can be vital to the UK's drive to meet 2020 targets, are being assessed and often unfairly rejected because many of the councillors considering them have no training in their rights and responsibilities as planners. This is unacceptable. The Government promised after the Killian Pretty Review to support steps to improve engagement of councillors and communities in the planning process, but this does not go far enough.

Secondly, wind energy developments can produce significant benefits – financial, environmental and social. However, questions have been raised as to whether the communities which host wind farms are sharing sufficiently in these benefits of developments.

Radar objections are affecting over 4GW worth of onshore schemes in planning; however, the vast majority of onshore projects do not have the funds to invest in major radar upgrade or refit programmes, which would have wider benefit for a multitude of projects.

Statutory agencies have a right to be consulted in the planning process but are typically under-funded, under-staffed and lack appropriate skills to deal with planning applications. This means responses are often last minute, giving developers no chance to address their concerns and making a mockery of the pre-application discussion process.

Solution

1. Regional planning policies serve a valuable role in coordinating and guiding strategic decision-making, and we strongly support their retention. Any replacement must enable national priorities to be reflected in local decision-making and allow for the measurement of delivery on the ground.

2. Compulsory training should be introduced for all elected members serving on planning committees.

3. Encourage voluntary part-community revenue sharing schemes for new wind farms so that local people can share the financial benefits from local schemes.

4. Statutory consultees should be given training similar to that given to elected planning committee members, and three months to respond to any application consultation. If they do not respond in that time they should be deemed to have no-objection.

5. The national radar assets need to be upgraded or replaced via a central funding mechanism with Government taking the lead in ensuring that affected industries make fair and appropriate contributions.

Skills & supply chain

Issue

Although the UK missed out on establishing an onshore wind manufacturing base in the 1990s, largely because of our restrictive planning regime, businesses active in other areas of the project life-cycle have set up and grown in the UK. As new wind farms are given planning permission, there is opportunity to develop significant UK based employment within the sector, as up to a half of jobs in wind energy come from construction, operations, maintenance and support services. 14GW of onshore wind could support as many as 15,000 UK jobs.

The expansion of the onshore wind industry is vital if the UK is to meet its 2020 targets, but there is a severe skills shortage in recruiting turbine technicians and experienced professional engineers. The absence of nationally recognised wind-technology training standards and suitable vocational training routes are key problems. The lack of graduates is seriously hampering the recruitment of engineers.

The UK skills funding regime is confusing and bureaucratic, many employers simply do not know what funding is available for training and who to apply to in order to receive it.

Solution

1. Government needs to streamline and consolidate training provision, reducing the number of agencies.

2. Streamline access for employers to apprenticeship funding, along the lines of the successful Scottish Executive model.

3. There is a need for a centralised wind/renewables funding stream to consolidate/coordinate funding and identify and select lead training institutions – this should be ring-fenced for a selected number of institutions.

4. Continued support is needed for Undergraduate STEM courses and centers of postgraduate training and research excellence relating to wind and marine energy. Provision of publically funded new industry related courses should be limited to designated centes of excellence.

Grid

Issue

The UK grid network was built for a different era – it was designed to connect large conventional power plants to homes and factories, and as a consequence it rarely extends to the locations where the best wind resources are found. The Electricity Networks Strategy Group (ENSG), an industry regulator and Government taskforce, has prepared a report mapping out in broad terms how the network would have to be developed to connect 29GW of wind energy. There needs to be a single authority with the final responsibility for ensuring that the ENSG report is implemented in time to achieve the 2020 renewable energy targets. We believe that the Government should be this single authority. However, in order for this to work we need a regulatory regime which will facilitate this; this means that Ofgem's remit will have to be amended to ensure that it prioritises the delivery of the Government's long-term policy objectives.

New energy generators cannot get a date by which their development is to be connected up to the grid until the planning application gets consent. This creates delays – and consequent damage to investor confidence – because connection dates are arranged several years in advance. Ofgem has introduced an interim mechanism to encourage grid investment ahead of final planning consent; however, a permanent regime needs to be put in place.

The grid network and its management was designed for a system based on conventional power stations built from the middle of the last century. It needs to be updated to cope with 21st Century renewable energy, which cannot be switched on and off at will in the way a gas-fired power station can.

Solution

1. The ENSG proposals, which set out a broad-brush map for new onshore infrastructure development, should be implemented, with a strong single authority given responsibility for keeping it on schedule.

2. The Government must keep to its timetabled commitments for reform of transmission access in June 2010. It must resolve the enduring arrangements for transmission access, as set out in 'Improving Grid Access'.

3. Distribution Network Operators (DNOs) must invest in 'smart' network control systems with the investment being rolled out over the next ten years. This will require a paradigm shift in the way we manage the electricity network.

4. The ENSG onshore grid proposals would cost £4.7bn – a significant sum which OFGEM should allow to be funded through customer bills. This would only add £1.50–£2.00 to the average household bill.

5. Ofgem's remit should be reformed to make its primary duty to facilitate the Government's energy policy objectives of consumer protection, energy security, tackling climate change and affordability, with least cost.

04/

Offshore Wind

Less than a decade after the first marine wind farm went operational in the North Sea off Blyth in Northumberland, the United Kingdom's offshore capacity will exceed 1GW.

The UK now has more offshore wind energy capacity than any other nation, having taken over from Denmark as the world leader in 2008. Offshore wind farms have expanded in both size and capacity since the two 2MW turbines at Blyth started generating electricity. Wind farms constructed at sea can have dozens of turbines which, when the blades are included, tower 120m above the waves. The capacity of most turbines being erected today is 3MW or 3.6MW but Round 3 is likely to include models with up to 10MW capacity. Each one is fixed to the seabed, usually using metal piles. In the future some deep-water models could have floating foundations. Total capacity by the end of 2009 was forecast to be just under 1GW with at least 800MW more under construction, but the sector will expand even more rapidly over the next few years. There are over 40GW worth of offshore sites currently being brought forward by developers in UK waters – enough to power in excess of 25 million homes. This could bring over £120 billion of private investment to the UK. A report by Bain & Company commissioned by BWEA in 2008 showed that 50GW of wind energy could create 45,000 jobs.

The first two rounds of offshore development overseen by the Crown Estate should provide 7GW capacity and Round 3 will add another 32GW. A further 6.5GW will be built in Scottish territorial waters and up to 2GW is expected from extensions to early wind farms. In order to develop this longer-term capacity the UK needs to maximize early delivery of Round 2 and Round 2.5 projects so that there is a sufficiently robust supply chain to deliver Round 3.

However, for the sector to realise its potential, obstacles to rapid growth must be removed. In particular, the sector needs Government help to provide the incentives to attract investors and to bring costs down. However, above all the Government needs to provide a stable long-term policy framework which boosts investor confidence and minimizes regulatory risk. Key to this will be robust, realistic sector targets to maximise offshore wind capacity as part of the National Action Plan to deliver 2020 targets which is due in June 2010.

Finance

Issue

Rising costs have been one of the biggest headaches for the offshore sector in the last few years, with the fall in the value of Sterling, the lack of competition in the supply chain and the steep rise in the price of steel among the biggest contributors. However, the key to bringing down costs is creating confidence in the supply chain, where investors will bring forward the capacity needed to create proper competition if they know that there will be a market for their goods and services.

The market for new offshore wind projects must therefore be supported to provide a consistent flow of work to the industry. While we welcome the increase in the level of Renewable Obligation Certificates (ROCs) awarded per MWh during the credit crunch, it is only temporary. What is most welcome in this initiative is the signal that the Government is sending that it will ensure that new projects continue to be economic.

Solution

1. Government should keep the support for offshore wind under review and (if necessary) be ready to extend the period for which offshore wind receives 2ROC/MWh. This should be alongside investment in innovation and research and development aimed at reducing capital and operating costs and minimising the need for RO support.

2. The RO must be maintained in order to underpin investor confidence in the sector. A move away from the ROC system at this stage would only serve to confuse and discourage investors, causing a hiatus in projects going forward.

Planning

Issue

The expansion of the offshore wind sector will put huge pressure on the government departments and statutory bodies that need to assess each of the proposed projects. They already face staff and funding shortages and this will become much more serious as their workload increases.

We welcomed the creation of the Infrastructure Planning Commission (IPC) as a body with the power to foster a streamlined, transparent and fair consenting process, especially with the introduction of a nine-month timeline on decisions once an application has been made. While accepting that there is genuine concern over the democratic accountability of the IPC, we strongly believe that however the debate is resolved there must be a streamlined planning regime which enables nationally significant projects such as offshore wind to be considered fairly and quickly.

The Marine and Coastal Access Act regime is intended to consider all marine interests in one place. The extensive guidance and many policy tools being drawn up will indicate how the offshore environment will be protected and what areas can be developed. The offshore renewables industry is competing with a large number of interests for the use of the seabed, including the fishing, oil and gas industries, maritime industries, the Ministry of Defence and conservation.

Solution

1. Adequate funding must be made available by the Government both to make sure the bodies assessing offshore applications have adequate funding to complete their work without delay and to ensure enough people are adequately trained to carry out the assessments.

2. Should any changes be imposed it is essential that the IPC's strict time limit on deciding applications must be retained. Similarly, if ministers are given the power to decide nationally significant infrastructure project applications, there must be a legal requirement introduced to ensure decisions are taken within a reasonable length of time so that projects are determined within a nine-month horizon.

3. The designation of Marine Conservation Zones should take into account the likely impact on the ability to site wind farms and therefore tackle climate change

4. The radar issues facing offshore developments can be addressed by upgrading NATS and MoD infrastructure. It is vital that future radar upgrades are required to take account of wind farms to enable wind and aviation interests to co-exist.

Skills & supply chain

Issue

Wind developers are currently setting out plans to deliver nearly 50GW of capacity offshore, but they currently lack the supply chain that would keep the UK at the forefront of the industry. Without the rapid growth of a supply chain, the promised investments of up to £120 billion and up to 45,000 jobs are at risk of being captured outside the UK. Ideally, the UK needs coastal manufacturing hubs for offshore wind, much like Aberdeen is a centre for the North Sea oil industry, with a number of smaller bases facilitating construction, operations and maintenance in strategically important areas for industry.

Even though the industry is only at the start of its expansion phase there is already a skills shortage which threatens to become more acute over the next decade. There is a need for technician level entrants and experienced professional engineers and the funding regime must be streamlined to reduce confusion and bureaucracy. However, the training needs of the sector are compounded by the challenge of working in an offshore operating environment, and by the fact that the rate at which offshore businesses need to expand to meet 2020 installation targets exceeds that of the on-shore industry.

Solution

1. The Government must take a pro-active lead in identifying and selecting the lead candidate regions and ports to become manufacturing and research hubs for offshore wind.

2. Incentives need to be provided by the Government and regional development agencies, either in capital funds or in tax breaks and other cost-reducing measures to encourage the growth of an offshore wind supply chain and hub manufacturing ports in the UK rather than rely on imports – this could be funded from the £170 million identified in the RES and the pre-Budget report for R&D and manufacturing investment

3. Training funding should be responsive to industry demand. The proliferation of providers must be avoided, with a national strategy on training delivery developed through industry consultation.

Grid

Issue

Over 40GW of offshore wind farm sites are currently being pursued by developers. This massive expansion could be limited by the inability of wind farms to plug into the grid network. OFGEM, as the regulator, should be less risk averse, acting to facilitate these new connections and deliver the Government's energy policy objectives at least cost.

The new grid connections will be managed by Offshore Transmission Operators (OFTOs), and the system is designed to encourage competition and reduce prices. Round 3 offshore wind farms will be grouped in nine zones and the new grid connections should be tailored to the needs of each zone. If the transmission regime is not right the scale and timing of delivering those grid connections could reduce the efficiency of the process.

The current proposed regime would promote individual connections for each wind farm. We believe that this would result in more cables being laid than are necessary, resulting in cost and environmental implications and slowing the pace of Round 3 development. However, we do not believe that handing offshore grid management over to a single transmission operator would improve the situation as this would undermine projects already underway, creating severe uncertainty in the market. Additionally, we do not believe that any one operator can marshal the resources to invest the £15 billion required to provide offshore grid for 40GW of projects.

Solution

1. Round 3 consortia should be given the choice to adopt the grid connection regime which best suits their circumstances by allowing them to choose either an early adoption of an OFTO, where the operator would design and build the connection, or a late appointment where the developers would build the connection and then hand over to an OFTO.

2. National Grid should have a strong coordinating role, issuing clear advice on the need for onshore upgrades to support an offshore network and the general formation of the offshore network.

3. The UK Government should commit to the development of an integrated subsea grid connection to the European continent.

4. Ofgem's remit should be reformed to make its primary duty to facilitate the Government's energy policy objectives of consumer protection, energy security, tackling climate change and affordability, at least cost.

05/

Wave & tidal

Harnessing power from the sea has long been proposed as a source of renewable energy, but it is only in the last decade that it has become much more than a pipe dream.

With one of the best tidal stream and wave climates in the world, the UK is ideally placed to establish itself as the home of tidal and wave energy and has taken the lead in developing the technologies.

The sector is in its infancy, but nevertheless, the Carbon Trust has reported that it could still create 2,100 jobs by 2020 and have 1–2GW worth of schemes installed.

Our own research shows that by 2030 a successfully supported marine energy sector could be creating as much as £900 million annually for the UK economy.

In the longer term there is huge potential, with the UK's natural marine resources able to provide as much as 20 per cent of our electricity supply. Moreover, there have been solid deployment advances in the UK. Marine Current Turbines installed the world's first commercial-scale tidal generator in Strangford Lough, and Wavegen is the first company to have commissioned an onshore wave turbine, on Islay. The British company Pelamis installed the world's first wave farm off the Portuguese coast and Openhydro deployed a prototype at the European Marine Energy Center in Orkney.

Efforts to create a critical mass of wave and tidal devices have been supported by The Crown Estate, which in 2009 opened the world's first commercial leasing round in the Pentland Firth calling for projects totaling at least 700MW. The Department for Energy and Climate Change (DECC) is in the process of scoping for a Strategic Environmental Assessment of the English and Welsh coasts to identify suitable locations for projects.

But as this is a new and developing sector, wave and tidal companies need the help and support of policymakers at a regional and national level. They need assistance in surviving the current credit crisis and capitalizing on the UK's lead in developing a world-leading industry. In the 1990s Denmark invested over a billion pounds in developing its wind industry, while Japan invested the same amount in solar PV technology. If the UK is serious about leading the world in marine energy, we too will have to invest a similar amount over the next decade to move the technology from prototype to commercial viability.

Finance

Issue

The sector has been facing a funding crisis because most wave and tidal technologies are still in their embryonic stages. Without large-scale private sector backing, the 'technology push' (capital grants) and 'market pull' (revenue support) mechanisms are inadequate, and securing sufficient inward investment is a struggle.

In order to reach the next stage of its development the wave and tidal industry needs in the region of £50–£60 million in annual support over the next 5 years. Through the various current support measures such as the MRDF and MRPF, which are direct capital grant schemes, and the existing 2 ROCs of revenue support, Gov't has already pledged nearly £100 million. This support is of course extremely welcome, but it is short term and cumbersome to access. The industry requires a streamlined and focused support mechanism, and we believe that a further £150 to £200 million pounds will be needed over the next Parliament to get the first generation of arrays into the water.

Without strong leadership and funding from Government, creating sufficient and consistent 'technology push' and 'market pull' mechanisms, the private sector will continue to question the level of support it will provide and once again the UK could miss out on developing a manufacturing base for one of the world's key renewable technologies.

Solution

1. Support for wave and tidal power remains short-termist and poorly focused. Marine energy schemes should receive similar levels of support throughout the UK. The various capital support mechanisms should be consolidated to provide an annual package of support at £50 million per annum for the next five years in order to bring the first generation of arrays to the water.

2. The good work of DECC's Marine Action Plan should be converted into a National Strategy for Marine Renewables which commits the Government to a clear policy agenda, with key milestones, to grow the sector through to 2030.

Planning

Issue

The new Marine Management Organisation (MMO) is to have responsibility for licensing wave and tidal projects with a capacity of less than 100MW. Due to the sector's early stage of development, the environmental impacts of each project are less understood than those of more established technologies.

Statutory consultees have often been hampered in their efforts to process proposed renewable energy projects because resources limit the number of suitably trained staff they can afford. Wave and tidal projects would suffer delays, added expense and possible cancellation if the MMO was similarly restricted in its capabilities.

A Strategic Environmental Assessment (SEA) must be completed before The Crown Estate can call on companies to bid for areas of the seabed for the development of wave and tidal technologies. An SEA has been carried out in Scotland, and Northern Ireland's SEA is underway, but one has yet to be completed in England and Wales. With the SEA complete in Scotland the Crown Estate has launched Round 1 for wave and tidal energy site awards. This has yet to be offered in England, Wales and Northern Ireland, creating a regional imbalance.

Solution

1. The precautionary principle should not be over-applied to planning applications; instead the environmental impact of each project should be considered using a risk-based assessment. Decisions on new devices should be based on lessons learnt from projects in the water.

2. The MMO must be given the resources it needs to employ enough suitably skilled staff to properly assess all the applications in a reasonable length of time.

3. The SEA for England and Wales must be completed as soon as possible, enabling The Crown Estate to open a competitive call for commercial project leasing off England and Wales.

4. The Crown Estate should also be pro-active in developing and consulting the industry on a plan for leasing rounds in Northern Ireland, England and Wales.

Skills & supply chain

Issue

The wave and tidal sector is on the cusp of expansion. However, the industry is still too young to have a fully developed supply chain. This creates significant opportunities for business across the UK. However, without investor confidence in the long term the market opportunities for the UK will be missed. Failure to address the problem will allow companies from abroad to seize the opportunity.

In contrast to the mature wind energy labour market, the short-term skills issues of the marine industry are focused less on the quantity of generic entrants, but more on the supply quality of post-doctoral specialists to drive innovation in wave and tidal energy businesses. Nonetheless, long-term foresight is also needed to pre-empt any potential skills shortages that could affect the sector's growth in the coming years.

Solution

1. UK Government should help to build confidence in the long-term future of the industry and thereby encourage investment in the supply chain by UK companies by mapping out both the future proposed support mechanism for the sector and setting post-2020 targets for its growth.

2. Britain also needs to invest in the skills base necessary to provide the workforce for this new industry. It is vital that Higher Education Institutions remain well funded in order to remain at the cutting edge of research and to engage in post-doctoral training in wave and tidal energy related subject areas.

Grid

Issue

Wave and tidal projects are already facing high development costs because the technology is in its early stages. Any additional burden, such as grid connection costs, will act as a disincentive to development.

A new grid network will have to be built to serve all offshore renewable energy installations. There is a concern that the needs of wave and tidal developments will be overlooked, when they could in fact be relatively easily factored into future planning up to 2020.

Solution

1. BWEA calls on government, industry and stakeholders to develop a strategy to underwrite the costs of initial grid applications for wave and tidal projects.

2. Flexibility should be built into future offshore grid connections to ensure that there is enough capacity to connect wave and tidal energy arrays where appropriate; for instance, pro-active investment will be needed to connect the 700MW of marine power currently proposed for the Pentland Firth.

06/

Small wind systems

In the last four years more than 10,000 small wind systems have been installed in the UK.

BWEA analysis of industry trends show that by 2020 there are likely to be at least 600,000 small wind systems, with a total capacity of 1.3GW. Overall, there is the potential for as many as 4 million units installed, with a capacity of 9GW, in an industry employing 10,000 people by 2040.

Expansion has been driven by UK manufacturers who have seized more than 80 per cent of the home market, which accounts for a quarter of global sales.

In the international market the success of UK companies has been even more striking and in 2008 the country became the world's biggest exporter of small wind technology. Wind is the only area of microgeneration in which the UK leads the world.

Small wind systems, either free-standing or mounted on buildings, include all the wind turbines with a capacity of up to 100kW. They can be used simply to charge batteries or to generate electricity for the grid.

The sector is growing year by year and in 2008 it created 500 new jobs, bringing the total in the UK to close to 2,000. In the future there is the potential, and expectation, of many more.

BWEA analysts believe that as long as barriers to growth are adequately addressed the sector will be generating 3500GWh of renewable electricity annually by 2020, compared to 526GWh today. By 2020 there could be as many as 5,800 people employed in a small wind sector that boasts an annual revenue in excess of £750 million.

However, if UK companies are to continue to lead the world in small wind technology they will need the assistance of policymakers in areas such as grid access, industry standards and planning.

Finance

Issue

The UK has a strong small-wind manufacturing base, but it could suffer irreparable damage if feed-in tariffs are too low to encourage householders and businesses to install their own turbines.

Businesses installing solar thermal units, ground source heat pumps and other small renewable energy generation systems are eligible for Enhanced Capital Allowances. Small wind, however, is exempted from the scheme to allow capital outlay to be offset against taxable profits.

Solution

1. Maintain a strong feed-in tariff. This will encourage small-scale electricity generation. It will also help the small wind industry maintain its place as a world leader while providing jobs.

2. Government should level the playing field to give small wind systems the same tax benefit as other microgeneration technologies, such as ground source heat pumps, by introducing Enhanced Capital Allowances for small-scale renewable electricity generation.

Planning

Issue

Planning officials and councillors have been issued technical guidance to help them decide the merits of large-scale wind developments. There is no such guidance for small wind systems.

Every year thousands of householders and businesses are discouraged from installing small wind turbines because the planning system is too complicated and does not cater for the specific nature of small-scale renewables.

Solution

1. Issue clear planning guidance for small-scale wind systems as soon as possible, and support overburdened local planning officials.

2. BWEA urges the Government to keep its promise to streamline the planning system and introduce a permitted development regime for small wind systems with appropriate levels of noise protection (45dB) that will encourage innovation and market growth.

3. Government support to fund industry research into the levels of wind resource at small-scale systems level.

Skills & supply chain

Issue

Over the past four years, BWEA members have invested significant resource in the development of robust product and installer standards to provide a strong foundation to a sustainable market. Experience shows that without certification, rogue installers can seriously damage an industry's reputation and consumer confidence. However the cost of getting a product certified will be prohibitively high until the sector is more established. Every country looking at certification, except the UK, is offering financial support to their businesses.

Solution

1. The Government should offer one off financial support of £2–4m to companies needing to get products through the certification process if the UK is to maintain its lead in the sector.

2. The Government should offer financial support to manufacturers and installers, through sector skills councils, to develop a new qualification framework for the training of installers.

3. UKTI should develop a special programme to promote British exports for UK-based manufacturers.

Grid

Issue

Households which install small wind systems and have old-style metering are required to have three meters – one for generation, one for exporting to the grid and one for consumption. This is a cumbersome and costly system and could be replaced by a single 'smart' meter which would provide electricity companies and householders with real-time information.

Householders installing a small wind turbine have to comply with grid connection rules which are out of touch with the current state of small wind technology. They are costly, time-consuming and unnecessarily demanding for householders or businesses seeking to generate their own electricity.

Solution

1. The Government must keep its promise to roll out 'smart' meters, and make microgeneration customers a key priority for early deployment of this enabling technology.

2. Grid connection requirements for small-scale renewables should be reviewed, refreshed and updated to better support the deployment of distributed energy generation.

07/

Conclusion

As we have seen Britain has the chance to build a world-class renewables industry.

From onshore and offshore wind, to wave and tidal power, to small wind systems, renewable electricity is well placed to play its role in reaching our 2020 commitments and building a low-carbon economy.

With the right policy framework we can deliver the 2020 targets, build a world-class renewables manufacturing industry, fill the energy gap, and tackle climate change. However, if we fail to meet these challenges over the next decade there could be devastating consequences.

In the 1990s Britain missed out on creating a domestic industrial base for onshore wind. Our lack of support for innovation, our restrictive planning system and our weak financial support stifled the market and led manufacturers to base their factories on the continent. Today, as a result, Denmark has over 20,000 people working in the wind industry, Spain over 30,000 and Germany over 80,000, while here in the UK we have just 6,000. History could repeat itself if we fail to take advantage of the Round 3 offshore wind leases and miss the opportunity yet again to develop a UK industry which would provide 60,000 to 70,000 jobs.

With a third of Britain's existing power stations due to be permanently retired over the next decade there is a pressing need for a new generation of power. Without large-scale wind the replacements will be fossil-fuel based; unless we build more renewables, by 2020 up to 80 per cent of our electricity will come from gas and 80 per cent of that will be imported from a world market dominated by countries such as Russia, Iran and Algeria. Keeping the lights on – and keeping prices affordable – is dependent on developing our domestic supply of clean green energy.

The consequences of missing this opportunity would be bad enough for our economy and our energy supply, but they could be far worse for the long-term future of the environment. Unless industrialised countries like Britain cut greenhouse gas emissions, global warming will continue. We have little over a decade to avoid the tipping point and prevent an increase in global temperatures of more than 2 per cent. Once we reach that point it will be too late to stop a chain reaction of environmental disasters which will fundamentally change the planet's climate. Changing the way we use and produce our energy is a vital step to preventing global warming, and that means making the green switch to renewables.

The UK has the advantage of rich wind and marine resources, and we also have a history of innovation and manufacturing which could allow us to harness them. What we need now is the policy framework to foster that change. This manifesto has set out the steps we believe are now needed and below are the five key policies which, more than any other, we believe are vital to ensuring that the UK fulfils its potential and answers the Renewables Challenge.

renewableUK
Leading the way in clean energy

RenewableUK was formerly named BWEA

BWEA

RenewableUK Manifesto—2010

Policy actions for wind, wave and tidal energy in the UK

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