EWEA
THE EUROPEAN WIND ENERGY ASSOCIATION

Public consultation on EIB's Energy Lending Policy – European Wind Energy Association response

1. General energy and economic context:

Particularly in the current economic climate, is there a trade-off between promoting a competitive and secure energy supply and one which is environmentally sustainable? Where should the balance lie and what implications does this have for energy sector investments?

Wind energy provides a competitive and secure energy supply, and at the same time is environmentally sustainable. It is not a question of balance as stated in the question.

The wind energy industry is a proven recession-busting industry and investment in the wind power sector should be seen as a way to restore Europe's economy to health. The EIB should therefore see wind energy as not only a solution to climate change and a way to improve energy security, but also a way to boost economic growth and competitiveness.[1]

As such, investment in the wind industry should be seen as a strategy to deliver economic growth, and financing from the EIB of the wind industry should be maintained and enhanced, even in times of austerity.

The EU stands out as an energy intensive region heavily reliant on imports, which meet more than 50% of the EU's primary energy demand. Additionally, the use of fossil fuel fired power plants exposes consumers and society as a whole to the risk of volatile fuel and carbon prices and climate and environmental degradation. Investments in renewable energy bring considerable benefits in terms of both macroeconomic advantages and improved energy security, through replacing energy production based on imported carbon-based energy carriers with high price volatility, thus enabling the EU to meet its renewable energy and climate targets.

However, regulatory uncertainty post 2020 and retroactive changes to support schemes significantly undermine investor confidence and, needlessly, increase the cost of capital for capital-intensive technologies, such as wind energy. EIB funding will play a crucial role in offsetting these risks and in promoting wind energy as an opportunity to plan the economic future of Europe on the basis of known and predictable costs, which is not only fossil-fuel free, but also free from any economic risk emerging from fuel and carbon price volatility as experienced in recent years.

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[1] As shown in studies comparing the macroeconomic benefits of wind with CCGT/gas technologies:

http://www.acciona.com/media/660111/en_wind_energy_policies.pdf

http://www.camecon.com/Libraries/Downloadable_Files/A_Study_into_the_Economics_of_Gas_and_Offshore_Wind.sflb.ashx

Green Growth: The impact of wind energy on jobs and the economy. EWEA, 2012

How does investment in the energy sector contribute to growth and employment? Are investments in all energy sub-sectors equally valuable? And how does investment in the energy sector rank relative to other investments in the economy which support growth and employment?

In 2010, the wind industry contributed €32.43 bn to EU GDP, an increase of 33% since 2007, which equaled 0.26% of the EU's GDP. The wind industry paid €3.59 bn in taxes, an increase of over 50% since 2007 and exported €8.8bn worth of products and services, an increase of 33% since 2007. Direct and indirect employment in the wind industry accounted in 2010 to 238,154 people in the EU, an increase of 30% since 2007. The wind industry spends over 5% of its turnover in R&D, three times more than the economy-wide average. If adequate investments are made, the sector is forecasted to create 520, 000 jobs by 2020 and 794, 000 jobs by 2030[2].

Between 2007 and 2010, the number of jobs in the sector grew by nearly 30%, whilst EU unemployment rose by 9.6%[3]

Further evidence on employment creation was provided through the mid-term evaluation of the European Energy Programme for Recovery (EEPR) which has provided €4bn for economic recovery through supporting low-carbon energy sectors (CCS, offshore wind and gas and electricity infrastructure). The evaluation revealed that in the offshore wind sector, 4,066 direct jobs were created, with the EEPR co-funding 9 projects, totaling €556 million. The CCS sector, which has received €1bn for 6 projects, had created just 411 direct jobs. This shows that with approximately half the amount of the EU funding, offshore wind projects have created 10 times more jobs than CCS projects.[4]

What impact do you consider the current economic crisis will have on the energy sector (demand, policies, supply)?

The economic crisis has had a dramatic impact on the energy industry. The economic situation has led to drop in energy demand, and thereby demand for new generating capacity.

Project financing has become increasingly difficult to raise. The cost of debt has increased from approx. 5.43% on average in 2007 to approx. 6.28% in 2009 and can reach up to 7.5% post 2012. While inter-bank interest rates have been reduced, banks are not lending much and the risk premium has very much increased since the crisis, which makes capital intensive investments, such as wind projects, more difficult to finance. Banks are less willing to enter syndicated loans, which was the main financing model for the large capital needs of the offshore wind sector. In addition to reluctance to lend, there has been a reluctance to borrow caused by regulatory uncertainty.

These factors are expected to influence project finance availability, which is set to decline by 15% over the next 5 years, whereas the wind sector's financing needs could increase by 50% in 2016, compared to 2011 levels. This is due to changes in pricing, debt and equity requirements, and growth of cumulative installations by 33%, with greater proportion of capital intensive offshore wind projects in the pipeline.

In these conditions, the participation of the European Investment Bank is crucial in filling the gap of the missing capital finance from the traditional sources and at the same time promoting the wind sector as a safe investment asset, given the typically strict due diligence and AAA credit rating of the Bank.

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[2] Green Growth: The impact of wind energy on jobs and the economy. EWEA, 2012

[3] August 2011. Source: Eurostat.

[4] http://ec.europa.eu/energy/evaluations/doc/2011_eepr_mid_term_evaluation.pdf

2. Renewable energy:

The Bank's economic justification for supporting emerging renewable energy technologies, whose cost is significantly above that of conventional and mature renewable energy technologies, is that continued investments in these technologies will eventually lead to cost reductions and will ultimately be the least-cost approach to meeting the EU's renewable energy targets. Do you agree with this approach? Is there an alternative approach to the economic justification of these technologies which you consider more appropriate?

The evolution of costs of onshore wind shows a good example of a steady downward path due to economies of scale and technology learning curves. The European Commission, in its Communication "Renewable Energy: a major player in the European energy market" highlights that "Onshore wind investment costs fell by 10% between 2008 and 2012." In addition, according to Bloomberg New Energy Finance, the average O&M costs since 2008 saw a cumulative decrease of 38%, or just over 11% per year.

The economic benefits of supporting offshore wind as an emerging sector go beyond sheer cost reduction. Over the coming two decades, offshore wind will move rapidly from an emerging, technology to a key component of the EU's energy mix. To offset the costs involved in developing complex and challenging projects, there is a clear trend towards reducing the cost of energy through lessons learnt, improved reliability and structural efficiency. Design trends are driving the supply chain towards specialisation – partially decoupling it from the onshore wind industry and developing specific offshore solutions. This leads to emergence of a new industrial sector in Europe, which provides significant opportunities, particularly in the current economic climate, for growth and job creation. By 2020, according to the Member States' National Renewable Energy Action Plans (NREAPs), 43GW offshore wind will be installed. EWEA estimates that offshore wind power will produce 148 TWh annually, meeting over 4% of the EU's total electricity demand and avoiding 87 million tonnes of CO2 emissions, thereby significantly helping EU to meet its energy and climate targets.

Secondly, from an economic perspective, the efficiency of EIB investments into the offshore wind industry is immense, as the different components (substructures, towers, converter platforms) bring significant amount of supply chain value. In addition, the offshore wind sector as an emerging industry requires a lot of low-risk investments in infrastructure, such as ports, test facilities, manufacturing facilities, etc. It is therefore not necessary for there to be a wind turbine manufacturer in a country for that country to take advantage of offshore wind development and benefit from job creation.

Last, but not least, Europe needs to sustain its competitive advantage it has in this field: following in the wake of substantial success in the onshore wind industry, Europe as a first-mover could exploit future export opportunities to other emerging markets (Japan, South Korea, China, Taiwan, India, the USA).

To conclude, EIB's support to offshore wind will provide multiple economic benefits through cost reduction, incentivising emergence of a new industrial sector in Europe, creating thousands of jobs, reducing GHG emissions, and helping Europe reap the economic benefits of its global leadership in this field.

What evidence is there that the cost of emerging renewable technology is falling?

Currently, the CAPEX is estimated by EWEA in the range of €2,800/kW – €4,000/kW. The increase in offshore costs up to now has been driven by underlying cost increases (commodity price increases and currency fluctuations), by bottlenecks in the supply chain, sub-optimal reliability as well as by the move into deeper waters, further from shore. In the future, costs are expected to decrease as a result of

technology learning curves, economies of scale and increased competition, as has already been experienced by the onshore sector. Work undertaken recently in the UK, by the Offshore Cost Reduction Taskforce and the Offshore Wind Cost Reduction Pathways by the UK's Crown Estate, sets out key actions for industry and Government to cut the cost of generating electricity in the sector by over 30% by 2020. Similar work is currently being carried out in Germany. The work shows a clear path to industry on how the industry can reduce the cost of generation, covering Supply Chain, Innovation, Contracting strategies, Planning and Consenting, Finance and Grid.

What level of investment in RE do you expect in the short and medium term?

Based on the EWEA scenarios for installed capacity up to 2020 and 2030, the annual investment needs in 2020 are €16.2bn onshore and €10.4bn offshore; in 2030 the annual needs are €8.2bn for onshore wind and €17bn for offshore wind development.

What are the barriers to investment in renewable energy outside Europe? How might these be overcome?

Free trade on a level playing field is critical for the wind industry to develop an optimal supply chain to drive down costs and increase competitiveness, allowing the wind industry to compete. Therefore tariff and non-tariff barriers should be removed. The EU should enter discussions on an international free-trade agreement, tackling both tariff and non-tariff barriers, ensuring a level playing field for renewable energy products and services, with all willing parties. The recently signed APEC agreement, and free-trade negotiations with the US, provide the ideal forum for the European Commission to develop such an agreement.

EU-based wind energy companies will only benefit from free-trade with a level playing field as the sector exported €8.8 bn worth of products and services in 2010, up 4.2% on the previous year and up 33% since 2007. In contrast, the sector imported €3.2 bn worth of products and services in 2010, making it a net exporter of €5.7 bn worth of goods and services.

Do you agree that there is significant scope for investment in renewable heating and cooling?

Outside of the scope of work of EWEA.

What are the barriers to investments in this sector and how might these be overcome?

The main constraints to raising investments for wind projects are:

- The decreased availability and increased cost of capital due to the economic crisis and the consequent changes in the regulatory framework for investors (Basel III, Solvency II);
- For offshore wind, growing risk perception in line with the increasing scale and complexity of the projects;
- Policy changes to support mechanisms introduced by several governments in the past 12 months which have led to increased regulatory risk.
- Proposed market reforms introduced by several governments which have led to policy uncertainty.

The European Investment Bank has already provided support to wind energy projects in particular through non-recourse lending as well as corporate financing and currently covers up to 15% of the

wind sector investment needs[5]. This has been and will continue to be key to fill the gap of the missing capital finance from the traditional sources. The support of the EIB is particularly important for the offshore wind industry given its higher technological and construction risk, where the EIB can act as "anchor lender", facilitating the creation of lending groups both through the reduction of the number of parties needed to close a deal and through the creation of consistent and understandable underwriting standards for such projects.

At the same time, EIB provides lower cost liquidity to wind projects, either directly in large projects where EIB acts as direct lender (whether on a project finance basis or on a corporate basis), or indirectly in various countries where funding envelopes are allocated through commercial banks. This is valuable as the costs of EIB funding are still substantially lower than those of most commercial banks and lower cost of debt directly translates into lower cost of electricity, providing high quality and unbiased technical vetting of projects in emerging sectors.

In parallel to the EIB support, a long term and stable policy framework including stable support mechanisms and an ambitious 2030 target for renewable energy is key to provide investors with the necessary stability for investments.

3. Energy efficiency:

What do you think are the main barriers to energy efficiency investments? What might be done to overcome these? What role can Energy Service Companies (ESCOs) play in developing energy efficiency investments? What is the potential for energy efficiency outside Europe? Do you consider the criteria used by the Bank to categorise projects as Energy Efficiency projects appropriate (see Annex 1)? What alternative would you propose?

Outside of the scope of work of EWEA.

4. Security of supply:

Is the traditional model for electricity transmission and distribution changing? What implications does this have for future investments in electricity networks?

The model of transmission and distribution of electricity is inevitably changing: this is due to the need to complete the internal electricity market; decarbonise the energy system; improve the flexibility of the power system; the large-scale integration of, in particular variable, renewables; and improve Europe's energy security. This is reflected in the investment needs of electricity infrastructure which have been identified by the European Commission at €140bn by 2020.

Electricity infrastructure projects have relatively low risk of investment pay back, since regulators authorise the project owners to recuperate the investments through regulated grid tariffs. Despite this, transmission system operators lack own financial means to strengthen and build new infrastructure and without credit rating they face in general very low access to equity and are often not recognised as an attractive, low-risk and long term investment opportunity. This needs to be tackled by the EIB through financial instruments, which would, firstly, respond to the significant investment needs and, secondly, serve to attract additional capital, in the form of equity or loans.

[5] MAKE Consulting

What is the future role of smart grids, offshore grids and energy storage solutions?

The offshore grid is needed to more efficiently connect power harvested at sea with the onshore transmission system, while at the same time building a system which can actively contribute to stability and security of supply by enabling further integration of the European power market, and increasing trade in electricity. With the expected offshore wind power capacity reaching 40GW by 2020, an integrated offshore grid is a prerequisite for the EU to meet its climate and renewable energy targets in a most cost-efficient way by enhancing the creation of an Internal Energy Market through both providing the connection of large amounts of offshore wind power as well as an increased transmission capacity for power exchanges.

While technological challenges are not considered as a direct showstopper, transmission projects making use of new and innovative technologies come along with first-mover risks. High voltage-direct current technology suitable for meshed offshore grid design is a good example of such. As these investments are borne by consumers, regulators are in some cases reluctant to acknowledge and reflect such risks adequately in the grid tariffs. In this regard, the EIB financing will be crucial in alleviating the risk and unlocking private capital. Also, the EIB should complement in financial terms the coordinated EU policy - driven approach to building a meshed offshore grid, rather than building radial connections of offshore wind farms. EWEA estimates that building “hub connections” and planning the grid in a coordinated, integrated manner would allow reducing the amount of unutilised network, with capital costs saving of about €14bn by 2030.

Smart grids, and in the medium- to long-term energy storage solutions will play a key role in providing flexibility on the demand-side in Europe’s future power system.

5. Fossil fuels:

Gas is an important bridging fuel source in the transition to a low carbon economy: to what extent and under what conditions should gas-fired generation be supported?

What role will coal and lignite fired generation have in the EU power system in the medium term, with or without CCS, and how is this consistent with the EU’s Climate Action goals and its security of supply objectives?

What will be the role of local coal supplies as input for highly efficient CHPs?

What evaluation criteria should the Bank use to assess the economic, environmental and financial viability of coal and lignite fired generation?

What is the scope for the development of shale gas resources in the EU?

Do you expect the share of natural gas in EU primary energy consumption to grow further?

What would be the best approach to increase security of gas supply and reduce import dependency?

Given the large uncertainty on future gas demand, what is the risk that investment in natural gas infrastructure may be stranded?

Between 2005 and 2011 15% of the total value of EIB loans went to conventional generating technologies. In order for an increase in future loans to offshore and onshore wind energy, the EIB should end the provision of low cost public finance to conventional technologies. European Investment Bank money should therefore not be available for conventional generation technologies.

6. Nuclear:

What role do you expect nuclear power to play in the European energy market?

As nuclear power stations are ageing, should their life be extended (where possible) or should they be replaced with other generation sources?

What will be the impact on electricity generation and climate action of the reconsideration of nuclear policies within EU member states, in particular after the Fukushima accident?

Between 2005 and 2011 15% of the total value of EIB loans went to conventional generating technologies. In order for an increase in future loans to offshore and onshore wind energy, the EIB should end the provision of low cost public finance to conventional technologies. European Investment Bank money should therefore not be available for conventional generation technologies, such as nuclear power, which have benefitted from subsidies over the past decades. This technology is mature; therefore providing support is not best use of public money as efficiency gains are likely to be minimal.

7. RDI:

Which are the key innovative energy technologies under development? The development of which key innovative low-carbon energy technologies should receive most financial support?

Wind energy, both onshore and offshore, is a key innovative energy technology under continuous development. Wind energy RDI should therefore receive sufficient financial support in order to achieve the penetration levels expected of it by the European Commission,

The European Commission, in its 2050 Energy Roadmap, expects that wind energy will be the key electricity generating technology, providing between 31.6% and 48.7% of electricity production by 2050, more than any other generating technology. The wind industry considers this expectation feasible, if RDI support, and long term deployment targets, are in place.

In its Communication on offshore wind energy (EC, 2008) the European Commission expects that "offshore wind can and must make a substantial contribution to meeting the EU's energy policy objectives through a very significant increase - in the order of 30-40 times by 2020 and 100 times by 2030 - in installed capacity compared to today."

In order to ensure that offshore wind reaches the expected share in the EU future energy mix, offshore wind technology development needs to be prioritised as a sector with positive track record of fast technology learning curves, high leverage effect on private finances, potential to bring down costs of technology and creation of both direct and indirect jobs through built up value chain. The existing EIB financial instruments as well as other EU funds (R&D and innovation funding, structural funds, market deployment funds) need to be upscaled to reflect these political priorities.

The EIB should therefore play its role in implementing the European Commission's Strategic Energy Technology (SET) Plan, The European Commission has identified wind energy as a strategic energy technology, and has highlighted that wind energy contributes to all of the EU's energy policy objectives: increased competitiveness, energy security and fighting climate change. In 2010 European Commission has initiated and launched, together with the industry and the Member States, a 10 year Research and Development plan for wind energy – the European Wind Initiative (EWI) with the ultimate objectives of maintaining Europe's wind technology leadership, making onshore wind the most competitive energy source by 2020, with offshore following by 2030, and enabling wind energy to supply solid share of Europe's electricity in short to long term future.

For the period 2010-2020 the implementation of this ambitious strategy requires a yearly investment of public and private resources in wind energy R&D of approximately €600 million (totalling €6 billion by 2020).

Which barrier(s) are hindering the deployment of innovative, low-carbon energy technologies most significantly?

The main barriers to large-sale deployment of innovative wind energy technology, onshore and offshore, are:

- structural market distortions;
- regulatory uncertainty post-2020;
- retroactive changes to support mechanisms which have led to increased regulatory risk;
- the decreased availability and increased cost of investment capital due to the economic crisis;
- inflexible consenting process;
- inadequate provision of demonstration sites.

Power market liberalisation, creating an internal market and changing the market rules, is a precondition for the cost-efficient deployment of wind energy. Addressing these barriers is crucial for unlocking private investment and creating an enabling environment for market uptake of wind energy.

Should financial support be spread across a large number of small research projects or be selective and concentrated on a few promising large research projects?

The EIB needs to strike the right balance, taking into account inherent characteristics of renewable energy technologies.

There is no definitive answer to this question. Large demonstration projects with significant share of high-cost hardware and risk are difficult to finance and this is where the EIB financial instruments are necessary, to alleviate the risk through the Access to Risk Finance facility and thereby to attract private investments. However, smaller research projects can have significant potential and should therefore not be neglected. The decision on the financial support should be based on the projects' contribution to implementing the SET Plan's European Wind Initiative research priorities. In this regard, the recommendations of the European Wind Initiative should be taken into account to the maximum possible extent.

The Access to Risk Finance facility should cater for substantially more technological risk than the energy projects that have been financed by the Risk-sharing Finance facility so far. This should be achieved by the EC guaranteeing and alleviating reasonable amount of the risk, thus protecting the EIB's credit rating. If a project financed through Access to Risk Finance facility fails to generate revenue, the EC should allow (part of) the payment not to be reimbursed.

8. EIB external and Cotonou mandates:

In a developing market context, where should the balance lie between meeting local energy needs at least cost and reducing global greenhouse gas emissions – the trade-off between affordable energy for all and sustainable energy for all? What should be the role of the EIB in promoting new technology and helping to transfer existing technologies to new markets? Where can sources of low-cost finance be more effectively used by the private sector to develop energy projects? What are the main barriers to developing sustainable energy sources in developing markets?

The EIB should support wind energy projects in ACP countries. Wind energy offers both affordable and zero-carbon renewable energy.

This is all too clear in small island systems heavily reliant on expensive polluting diesel generation. The International Renewable Energy Agency's (IRENA) Malta Communique on accelerating renewable energy uptake for islands (September 2012) highlights renewable energy deployment in [Small Island Developing States (SIDS)] as an important element of energy security, employment generation, and economic and social wellbeing. Islands are increasingly defining targets and developing energy plans to realise their renewable energy potential and stimulate economic growth.

Most islands around the world today depend on imported fossil fuels for the majority of their energy needs, which are expensive at the best of times and subject to drastic price fluctuations. Comparative isolation, small market size, and reliance on fuel imports leaves islands highly exposed to global economic fluctuations. Small Island Developing States (SIDS), such as those in the Pacific, Indian Ocean and Caribbean are particularly vulnerable. Increased use of renewable sources and technologies would strengthen energy security, generate employment and boost social and economic well-being.

Africa needs ambitious financing for renewable energy projects of all sizes in order to stimulate investment, maintain rapid economic growth and provide universal energy access around the continent. In order to meet its rapidly growing energy needs within the next two decades, Africa requires vast investments in new energy projects, from large investments to feed national power systems, to innovative, localised off-grid solutions to bring power to people and areas that are currently not served.