Date: 27 March 2012

Jon Parker
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Ofgem
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Dear Jon

Offshore Transmission: Consultation on potential measures to support efficient network coordination (Ref:26/12)

ABB welcomes the opportunity to comment on this latest Offshore Transmission consultation. We consider that coordinated transmission development will be critical to the long term future of the offshore renewable sector in the UK and Europe.

About ABB

ABB (www.abb.com) is the global market leader in power and automation technology. The ABB Group of companies operates in around 100 countries and currently employs about 135,000 people worldwide. In the UK and Ireland, ABB currently employs around 2,600 people and continues to invest in jobs and facilities to help build a Greener Britain.

ABB has an excellent track record in the successful development of offshore grid connections and interconnectors across Europe, where we have delivered a number of large and complex projects in a cost effective and timely manner. We have pioneered several key developments in both HVAC and HVDC systems over many years, and have developed extensive in-house capabilities to offer a complete design, build and service offering to the market using the latest power technology and delivery processes. Moreover, we remain committed to an extensive programme of R&D to support the growth in sustainable energy production and consumption worldwide.

ABB is a recognised world leader in HVDC equipment and systems. HVDC technology is being used to build a number of high capacity links to enable efficient transfer of power over long distances. ABB pioneered the first commercial HVDC link over 50 years ago and since then we have developed and refined the technology to support the growth of modern grid systems.

ABB is using HVDC Light (Voltage Source HVDC) Technology to connect a number of offshore wind farms off the German coast, where the distance from shore and environmental factors prevent the use of conventional HVAC equipment. In this area, ABB successfully completed the first offshore wind connection using HVDC Light in 2009. Since then, we have secured contracts to develop other offshore wind connection projects using this technology, including the world's largest single connection, the 900MW Dolwin 2 project.

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As the number of these point-to-point HVDC connections increases, it is becoming apparent that it would be beneficial to connect them directly. We are already seeing proposals for the development of HVDC grids, which is being driven by the growth in low carbon power generation which is often located far from load centres. The development of multi-terminal HVDC systems is the first step in making large scale HVDC grids possible. ABB will be delivering the world's first multi-terminal UHVDC (Ultra High Voltage DC) link to transmit 8,000 MW of clean hydroelectric power from the north-eastern and eastern regions of India to the city of Agra across a distance of 1,728 km. The four terminals will create power pooling points in north-eastern region before transporting the power to consumers. This concept could also be applied to offshore HVDC systems where the pooling of large amounts of offshore wind generation may be required.

ABB is also actively developing HVAC electrical systems and equipment to connect a number of near shore wind farm developments in Europe. We recently announced that we had secured the contract to design and supply the 132kV HVAC export cables that will connect the Humber Gateway offshore wind farm in the UK. ABB is also delivering the electrical system for Phases 2 and 3 of the Thornton Bank offshore wind project in Belgium and the Nordergründe offshore wind transmission connection in Germany.

ABB is building on years of project experience to expand our offering to the UK offshore renewable market. We have committed to an ongoing programme of investments that will expand and upgrade existing European manufacturing and service facilities to support the growth of the UK and European markets. Moreover, we are making significant investments in UK jobs and skills development in the UK to establish local delivery capabilities to design, construct and service offshore grid systems.

Offshore transmission coordination project – high level remarks

Offshore wind generation is an important element of UK government policy. The growth of the offshore renewable sector has the potential to secure local jobs, establish key skills and support economic growth while meeting the UK's binding renewable energy and carbon reduction targets.

The effective development of the transmission network is critical to the success of the UK's renewable energy ambitions. This means that onshore and offshore developments need to be considered together when identifying those investments that will deliver best value to consumers. ABB considers that coordinated transmission development will be critical to the long term future of the offshore renewable sector in the UK and Europe.

ABB welcomes the publication of the conclusions report to the joint Ofgem and DECC Offshore Transmission Coordination Project, which sets out the likely benefits of a more coordinated approach to transmission network development in the UK. We strongly support the conclusions that effective coordination of network development can deliver a secure and reliable energy system.

The conclusions report identifies a number of potential barriers created by the UK legal and regulatory frameworks that will prevent or restrict coordination benefits being realised. It is

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important that measures are introduced that incentivise and enable effective coordination to happen. It is important not to lose sight of the underlying purpose of Transmission and Distribution networks which is to facilitate the interface between energy production and energy consumption. We are concerned that taking a narrow perspective in resolving these issues will merely add costs and risk in other areas of the value chain.

We note that several industry parties have commented that the planning and consenting system is one of the key barriers to the development of a coordinated transmission system. ABB supports the comments that have been made by other stakeholders. We are engaging with a number of developers and are already seeing that well defined projects are having difficulties in securing appropriate planning approvals and consents in a timely manner. The prospect of getting consents and approvals for projects that seek to deliver wider but often less tangible benefits appears to us to be significantly more challenging.

We had hoped that planning reforms would streamline the consenting process for renewable and transmission schemes that support the Government's renewable energy commitments. Nevertheless, we consider that the planning process is creating additional uncertainty, increasing project development risk and failing to deliver timely consents.

ABB considers that a key principle of the planning framework should be to evaluate the cumulative impact of development on the environment. From the joint conclusions document, we understand that the planning framework does not allow developers to put forward proposals that take account of potential longer term development that might be likely to occur. ABB considers that this is a fundamental flaw in the system which is having the perverse impact on the development of renewable generation by restricting potentially attractive options.

We welcome the confirmation that the Department for Communities and Local Government intend to address this issue. We would like to see appropriate amendments made quickly as prolonged delays will undermine the development of the UK renewable sector.

Consultation response

ABB fully supports the aim of delivering best value for current and future electricity consumers. The UK regulatory framework must therefore achieve an appropriate allocation of risks and rewards if this objective is to be achieved. We consider that the drive to deliver a low risk offshore transmission sector, while successfully attracting transmission investment, has led to a disproportionate increase in risk to offshore generators and is imposing unnecessary costs to society as a whole.

We welcome the decision to consult on reforms of the UK offshore regime to encourage greater transmission coordination. We believe that measures to improve transmission network planning and enabling transmission investment to begin ahead of need have the potential to provide new impetus to the renewable energy market.

Coordinated transmission system planning

ABB recognises that one of the major challenges to the effective development of the transmission network is the high level of uncertainty surrounding the main drivers of network capacity. The volume, timing and location of generation build out are continuously changing in response to volatile market conditions. In the longer term, we anticipate greater demand side participation in the market. This unprecedented level of uncertainty is making transmission system planning far more complex.

There has been extensive discussion regarding the potential role of National Grid, as National Electricity Transmission System Operator (NETSO), in securing coordinated development of the transmission system in the UK, taking account of the opportunities for cross border developments. ABB considers that a central transmission coordinator is critical to the development of a secure and efficient transmission system. We therefore welcome the decision by Ofgem to consider whether the role of the NETSO should be enhanced and whether there is a need to provide better incentives to encourage more effective planning of the transmission system.

ABB notes that National Grid is already taking steps to consolidate the various planning documents. We agree that a single holistic transmission planning document could greatly aid transparency and drive investment in the right areas of the transmission system. However, we consider that external stakeholder input will be critical if the document is to be effective and the benefits of a holistic document are to be realised.

Ultimately, those investing in new generating plant will need confidence that transmission capacity will be made available when expected. We are keen to understand the impact that these changes have on the wider industry framework.

The concerns of the industry regarding the user commitment rules, charging framework and connection process are well documented. ABB supports the need to protect the interests of consumers from unnecessary costs and understands the principles that form those rules that encourage generators to minimise their impacts and limit assets stranding. However, to be effective the correct balance needs to be struck between exposure to transmission costs and the long term cost of energy. ABB is concerned that the desire to minimise transmission costs is only adding unnecessary development risk, delaying renewable generation projects and increasing costs to consumers. We urge therefore Ofgem to reconsider the allocations risks and rewards from a holistic perspective to ensure that the correct balance is achieved.

Framework for anticipatory investment

Grid infrastructure is a critical interface between producers and consumers of energy. It is important to those wishing to produce or consume electricity that they have access to a secure and reliable transmission system. From the perspective of an offshore generator, any delay in the delivery of a grid connection will remove a generator's route to market and, in the absence of adequate compensation, result in a significant loss of income. Investors will therefore assess the

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likelihood of a transmission delay occurring and will often impose large risk premiums on the cost of finance. These premiums are ultimately factored into the cost of energy that is paid for by the consumers once the project is completed.

Early commitments to construct the grid infrastructure ahead of need may provide investors with greater confidence and therefore substantially reduce the overall cost of energy to the consumer. We therefore welcome the decision to develop a framework to enable anticipatory investment for the purposes of developing transmission infrastructure offshore. Such an approach will bring the offshore network in to line with existing onshore arrangements.

ABB broadly supports the principles for an anticipatory investment framework. We believe that certainty is critical to the success of any investment framework. Our view is that the framework should ensure that certainty is provided at the time any investment commitment is made based on known information. This is a key principle as it removes a significant element of regulatory risk from the process and ensures that timely investment can be delivered. In the absence of certainty, the anticipatory investment framework may be seen as complex and potentially fraught with additional risk such that the investment is not brought forward.

Annex A to this letter sets out some further detailed comments on the subject of the anticipatory investment framework.

Closing remarks

Throughout the development of the offshore transmission enduring regime, ABB has highlighted the need for a simple and robust regulatory framework to ensure that the UK's offshore renewable energy potential is realised. The global transmission market is experiencing a sustained period of rapid growth. The UK is currently competing in global markets for capital, transmission equipment and skills as several countries embark on ambitious investment programmes to deliver electrical networks for the 21st century.

ABB is actively engaging with key industry players to ensure that we are able to meet the requirements of their projects in a socially and environmentally responsible manner. We consider that the regulatory framework must be sufficiently flexible and pragmatic to enable the offshore industry to deal with new challenges as larger and more complex projects are developed. Such an approach will enable key lessons to be learned, which will ultimately help drive down costs in the longer term. What is more important however is that the UK regulatory regime provides certainty throughout the entire value chain in order to deliver a sustainable offshore renewable sector in the UK.

Substantial investment in manufacturing capability and skills will be needed to develop a supply chain that has sufficient capability to meet global demand. Nevertheless, we are concerned that new Government initiatives and the revisiting of policy proposals is creating additional uncertainty, undermining confidence and deterring necessary supply chain investment. As a consequence, we risk creating further barriers to the successful delivery of a secure and reliable low carbon energy system.

ABB remains strongly in support of the development of the UK offshore wind sector and the wider growth of the green economy. We are keen to work with Ofgem to assist in further developing these proposals to ensure that we have a robust regulatory framework that will deliver secure and sustainable energy supplies.

We welcome the opportunities to engage with Ofgem and other stakeholders on such significant issues. We look forward to contributing further to this debate.

Yours sincerely

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Annex A: Responses to Specific Questions

Question 3: Do you agree with our initial proposal for a definition of AI and the types of AI set out are those that need to be captured in an approach to AI?

We note the proposed definition for anticipatory investment as "capital expenditure that supports anticipated future network requirements, rather than the immediate needs of a single offshore generation phase". ABB considers that anticipatory investment should be allowed where there is a robust case for undertaking the investment earlier than need that is likely to deliver benefits for consumers. We therefore believe that the proposed definition for anticipatory investment potentially too limiting.

We can see that for consenting reasons, there will be projects that require investment in advance of need to enable a second phase of a project to be delivered but without wider network benefit. It is not clear whether the intention of the proposal is to capture this type of anticipatory works or not. Our concern is that investment for a single future phase would not be treated as an anticipated future network requirement because it does not have wider impacts, even though it may be necessary for a current and future phase of development to go ahead. We would therefore welcome clarity on what would constitute anticipated future network requirements.

Question 4: Do you agree with our initial proposed objectives and regulatory design principles for an approach to AI? Are there some which you see as more important than others?

ABB broadly supports the principles for an anticipatory investment framework. Many of the principles reinforce the general obligations on companies to develop a system in an economic and efficient manner. Nevertheless, we would welcome clarity on what is meant by these principles in practice as they could be interpreted in a number of ways. A narrow interpretation may limit investments to those proposals that lead to lower capital cost, whereas a broad view would potentially suggest that proposals that are likely to have positive consumer benefits will go forward even though transmission costs are potentially higher in the short term.

We believe that clarity and certainty are critical to the success of any investment framework. Our view is that the framework should ensure that parties understand the rules and that certainty is provided at the time any investment commitment is made based on known information. That way, Ofgem can remove a significant element of regulatory risk from the process.

Question 10 - What are your views on whether a longer revenue stream for assets that have wider network benefits could create better value for consumers?

ABB considers that those investing ahead of need should be rewarded for that investment in a timely manner. We believe that anticipatory offshore works should receive an ex ante funding allowance. We note the Ofgem are seeking views on the length of funding commitment. We do not have a strong view on the duration of any commitment to revenues. Nevertheless, it is important that parties have clarity and certainty to those making the investment. For example, Ofgem could

maintain a 20 year revenue stream and adopt a 40 year asset life. The critical element would then be to provide certainty over the arrangements that will or are likely to apply in years 21 onwards.

Question 16 - Do you agree with the proposed high-level criteria for use by Ofgem if considering whether AI would be economic and efficient?

It is important that in assessing the need for anticipatory investment that an assessment is made of the impact on the cost of energy to consumers, current and future. ABB fully supports the aim of delivering best value for current and future electricity consumers. We consider that the emphasis placed on delivering low cost, lean electrical systems will only serve to increase costs to consumers. We urge Ofgem to adopt broader assessment criteria, potentially including cost of carbon impact over the project life cycle and reduction in security of supply risk.