

IWEA response to the OFGEM Consultation

**Regulation of transmission connected
non-GB generation to the GB electricity
transmission system**

17 January, 2014

Introduction to IWEA

The Irish Wind Energy Association (“IWEA”) is Ireland’s leading renewable energy representative body representing more than 200 members involved in wind and renewable energy development in Ireland and Northern Ireland (through the Northern Ireland Renewables Industry Group (NIRIG), set up in collaboration with Renewable UK). IWEA represents members with projects across the spectrum, in operation, under construction and awaiting connection. In Ireland IWEA members are involved in the majority of connected projects but also involved in more than 85% of the MW of currently grid contracted projects.

Through NIRIG we represent more than 25 company members that have developed over 85% of renewable generation operational in Northern Ireland today and who will contribute a significant majority of renewable energy required to deliver the 2020 targets.

The IWEA membership base includes all large, medium and many small developers as well as financial, legal advisory, consultancy, contractors and other service providers involved in the renewables sector in Ireland and Northern Ireland.

Context for Our Response

IWEA welcomes the opportunity to respond to the consultation “*Regulation of transmission connected non-GB generation to the GB generation system*”. IWEA feels that this is a unique opportunity to define a series of integrated policies and initiatives to ensure that Ireland and the UK can deliver on their renewable energy potential in a way that maximises the long term benefit to both societies and the economies. Initiatives that utilise the co-operation mechanism are timely and are to be welcomed as part of the EU commission wider plans to integrate the EU energy market.

IWEA notes that while the focus is on 2020 targets, IWEA believes that the regulatory decisions and mechanisms introduced should also take the longer term view into account as the duration of projects with investment decisions made today will extend beyond 2020. Furthermore arrangement made as part of consideration under a potential IGA agreement between Ireland and the UK should look to the collaborative approach and potential of other energy systems beyond 2020, in terms of additional generation and further integration.

IWEA is committed to active on-going engagement as part of this process and additional follow on processes to assist all key stakeholders in Ireland and the UK in defining the integrated policies and initiatives required to deliver renewable energy trading. Initially looking to 2020, Ireland will have enough domestic resources to meet 2020 targets via onshore wind and Ireland will have additional surplus resources which can provide an opportunity to develop an integrated market for the provision of carbon free electricity between Ireland the UK and mainland Europe in advance of 2020.

North West Europe, especially Ireland and the UK, has an excellent wind resource. IWEA recognises that there are significant initiatives underway in the UK to realise the potential of the excellent wind resource available. IWEA believes that Ireland is also well positioned to be able to contribute the UK renewable energy targets in a more cost effective and possible timely manner. In the longer term Ireland and UK can contribute wind power more cost effectively to mainland Europe.

Ireland has one of the best wind resources in the world. It is estimated that there is potential to develop up to c50GW¹ of offshore wind in the Irish waters of which c10GW is in sites that may readily be exploited by current technology in the Irish Sea. This offshore resource is complemented by a substantial land based wind resource and a huge marine energy resource. The EU has repeatedly signalled that the 2020 targets are a starting point on a move towards greater levels of domestic EU energy production from renewable sources. As renewable targets increase it will become increasingly more important to deliver these targets in the most cost effective manner to protect EU consumers delivering price stability, energy security, and addressing EU climate change targets.

Ireland has an onshore wind regime with high capacity factors on coastal land banks and with the application of the latest turbine technologies can achieve high capacity factors also inland. Irish onshore wind in many cases is the same distance or closer to the UK than many of the Crown Estates Round 3 zones. This will mean that Irish onshore projects of scale can be more cost competitive and timely to deliver than some offshore Round 3 zone projects.

IWEA welcomes this timely consultation looks forward to continued engagement on this matter in the coming months Please see our comments on the consultation questions below:

Introduction

Question 1: What are the key milestones for the delivery of non-GB generation and connections pre-2020? How does the decision on the regulation and licensing of non-GB connection fit into this timeline?

It is the view of IWEA that the high level milestones for delivery on non-GB generation into the GB electricity system must cover three main areas:

- (i) Treatment of Grid Infrastructure
- (ii) Market access
- (iii) Access to support mechanism

Certainty is required to be delivered in these areas in Q1 2014

IWEA cautions that projects must achieve planning within 30 months of the signing of the IGA or no later than 2016. This is the latest timeframe that will allow for exporting of generation by the stated 2020 deadline, given the time required to procure capital, technology and services after planning, the construction timelines and the subsequent commissioning and grid connection activities. It should also be noted from a planning perspective that there is currently a targeted review of the Irish wind energy development guidelines which will not be finalised until Q2 2014.

¹http://www.seai.ie/Renewables/Ocean_Energy/Ocean_Energy_Information_Research/Ocean_Energy_Publications/Offshore_Wind_Study.pdf

It is clear that regulatory treatment of the asset/s is the core fundamental building block upon which grid can be considered, designed and eventually delivery which will in effect stabilize and ground the discussion on required market support mechanism.

To deliver non-GB generation and connection into the GB transmission system before 2020 will require the implementation of the indicative high level programme as below.:

2014:

- Prepare EIS and planning application.
- Access to CfD arrangements and off-take agreement.
- Initiate procurement process.

2015 (Q1 & Q2):

- Submit planning application.
- Finalisation of all detailed generation and asset designs.

(Q3 & Q4):

- Planning process Cont'd and conclusion
- Procurement process runs to conclusion

2016:

- Financial close
- Commence Construction enabling works

2017-2020:

- Construction and commissioning of generation and transmission assets

The above indicative development programme highlights how vital it is that all regulatory issues are resolved before the end of **Q2 2014**.

Question 2: From the perspective of a non-GB project developer, how does the decision on the regulatory arrangements interact with Government decisions on renewable support (such as the award of a Contract for Difference (CfD))

IWEA proposes that similar to any large UK offshore wind projects currently in development, projects that will export electricity from Ireland to the UK need clear and predictable off-take agreements and structures need to be put in place. In the context of likely European energy market change in the coming years, regulatory certainty will be crucial. Projects which will be delivering over the next 5 years will therefore need clarity on structure and treatment in the longer term. It is imperative that developers have line of sight of revenue streams and overall policy certainty. Much of the regulatory uncertainty is tied up in grid issues, as such developers need to know:

- ❖ Will all or some of the connections be TSO-led or developer led?
- ❖ Who will be developing the connecting assets, both onshore and offshore?
- ❖ Who will be building the connecting assets?
- ❖ Who will be owning the connecting assets both in the short term and long term?; and
- ❖ Who will be operating the assets, in the short term and long term?

There are multiple parties in the supply chain required to deliver infrastructure and multiple parties that may be responsible for ownership and operation both now and in the future. Without access to this information progress on support via CFD will be limited.

Many of our members are of the view that only a developer led approach to design, construction, commissioning and initial operation can hope to deliver to meet the 2020 target.

Question 3: Are there other factors that Ofgem should be aware of relating to the timing and development of non-GB connections?

IWEA outline that there is a series of integrated issues that must be addressed and continue to have a dedicated focus to ensure the timeline for enabling projects to deliver before 2020 is achieved.

1. It is important that the targeted review of the Irish wind energy development guidelines by the Department of Environment, Community and Local Government is finalised not later than Q2 2014 and that any proposed changes regarding noise and shadow flicker continue to meet international best practice standards while also ensuring that onshore projects remain commercially viable.
2. It should be noted that a number of key project equipment requirements (i.e. transmission cables) have long lead-times and thus full consent and certainty is required as soon as possible to commence the procurement.
3. The Irish Government has started a SEA framework dedicated to export projects from Ireland which will guide An Bord Pleanála (the Irish planning appeals authority) when considering any proposals for large wind energy export projects. This will lead to the development of a clear Irish national planning context for the exporting of renewable energy. This process needs to remain on track to be completed no later than Q3 2014 to ensure that planning application can be submitted at this time.
4. The availability of Power Purchase Agreements in the UK from creditworthy counterparties in the longer-term needs to be further examined. Projects which will be delivering over the next 5 years will therefore need clarity on structure and treatment in the longer term.
5. The mobilisation of the broader supply chain will require certainty in general. More distinctly there are only a limited number of international companies that provide HVDC back to back technology or other suitable alternatives, these same companies may have limited order book capacity within the required timeframe. Project developers will be competing for this window against other interconnection or offshore projects.
6. To deliver necessary general supply chain localisation in the UK and Ireland associated enterprise development aspects would need to be started in Q2/3 2014.

2. Principles of transmission regulation

Question 4: Do you agree these are appropriate principles to take into account in relation to non-GB connections?

Yes. With regard to protecting consumers from exposure to undue cost or risks it is a given that this should be central to the overall regulatory treatment. With this in mind IWEA outline that scope exists for the UK consumer to benefit with savings via the UK Levy Control Framework (LCF) based on onshore, offshore or a blended onshore and offshore proposition/s from Ireland.

On a levelised-cost basis, Irish onshore and offshore projects can deliver power at costs that are very competitive with GB based renewables. Irish export projects are complementary to the deployment of UK onshore and offshore renewable energy aiding the security of supply, lowering costs for consumers and support the wider development of the industry in both Ireland and the UK.

Supplementing the GB system with 5GW of wind energy from Ireland has the potential to avoid additional cost to the UK consumer in the region of £5Bn² over 20 years based on the recently announced indicative CFD strike prices for onshore and offshore wind in 2018-19.

Additionally, some of the Irish energy export projects may reinforce the grid in Wales based on the proposed connection methodology and may also complement existing plans for the facilitation of renewable energy in the UK. Critically, some of these projects may be able to deliver strategic infrastructure in the form of additional interconnectors into Wales potentially mitigating the need for bootstrap³ reinforcements as are currently under consideration in the UK hence providing wider network benefit. This may also have the potential to create significant savings for the UK consumer.

IWEA hold the view that Irish projects can reduce the cost on the LCF. Exporting renewable energy from Ireland to the UK can be a cost-effective option for the UK and additionally can provide a hedge to assist the UK energy deployment plans for 2020 target delivery.

IWEA strongly concur that it is vital that network development is co-ordinated and efficient, and is aware that a number of our members are already factoring in the potential for co-ordination with other successful projects. As such we recognise a role for both TSO's (e.g. via National Grid's COIN process) to ensure that asset infrastructure can be developed and delivered in coordination with project developers in such a manner that it is future proofed to protect the existing and future electricity user in the UK and Ireland. However any such future proofing must ensure that no delays are imposed on generation that will risk meeting 2020 targets. Some of our members feel strongly that, in order to avoid delays and risks to the finance-ability of projects, such co-ordination should be promoted through existing processes such as the CION and should avoid imposing additional processes on developers or moving away from a developer-led approach by requiring grid to be designed by a third party.

Question 5: Are there other principles that we should also we consider?

In considering the non-GB generation connecting into the UK, IWEA are of the view that mechanism should be put in place that are capable of delivering generation in advance of 2020 but are future

² This is estimated based on the delta between UK offshore 2018-19 cfd strike prices and the delta between that and the mid-point between UK onshore and offshore cfd strike prices over 20 years with a capacity factor of 34%. **It is recognised that this is a high level indicative figure as clarity is required on Cfds's and how the transmission assets will be designed and delivered.**

³ EirGrid report outlines potential benefits of offshore grid networks for supporting onshore grids
www.eirgrid.com/media/EirGrid%20Offshore%20Grid%20Study.pdf

proofed for generation and transmission opportunities and further market harmonisation beyond 2020.

IWEA additionally proposes that, in any regulatory principles considered for infrastructure assets, a sufficiently long period of time be agreed to allow for an appropriate return on investment for the respective infrastructure investors, given the long term nature of the investments involved.

3. Legal classification and licensing

Question 6: We invite views on our interpretation of the different asset definitions/boundaries and interpretation of the legislation provided in this chapter. What implications does this have for the regulatory options presented in the next chapter?

It is the view of IWEA that the asset configuration as set out in Figure 3.1 may meet the definition under UK legislation but not EU regulations (as there is no connection to another transmission system (i.e. The Irish system)). The interpretation of the EU Electricity Regulation regarding licencing arrangements could be viewed as more flexible. It is our view that a non-GB generator is not a national transmission system of a member state, and could therefore fall outside the definition of Interconnector. As such we recommend that wider consideration should be given to additional options which could lead to more effective and efficient licensing arrangements. We additionally suggest that legal clarity should be brought to bear on these issues at the earliest to cater for required investor certainty.

Question 7: We are interested in views from stakeholders on what impact alternative interpretations would have on potential projects? Please provide detail where possible.

(As per response to question 6). It can be viewed that flexibility in interpretation exists at present. To ensure project deliverability and the flow of required investment, definitive clarifications may be required to the UK Electricity Act, invariably leading to a potential delay in putting these changes (if so required) in place. These changes should be expedited or the existing flexibility should be clarified and a final position agreed.

Question 8: We seek input from stakeholders on how generation licensing for non-GB generation could ensure appropriate safeguards for the export of renewables to the GB transmission system?

For simplicity one licensing arrangement should apply. Requirements from the country in which the generation resides, should be negotiated with the SO on a case-by-case basis.

4. Asset configuration

Question 9: Are non-GB connections deliverable by 2020 via direct and exclusive connections?

Yes, however all forms of connection are subject to the timely delivery of the IGA, that delivers commercial grid and regulatory certainty. This can be achieved subject to satisfactory timelines as follows. On the basis of the existing proven HVDC back to back technology system being deliverable at 1GW level it is highly conceivable that there will be a need for multiple connections to achieve an overall quantum from Ireland as part of any IGA.

Direct and exclusive connections that are not designed to eventually become market integration solutions are not favoured as this connection would not deliver the transmission savings, grid optimisation on both the Irish and the UK system along with potential saving in system balancing and delivering long term system trading arrangements consistent with expected market coupling.

IWEA believes that asset configuration should be designed and implemented in the near-term so as to meet current and long-term energy and enterprise development criteria.

IWEA outline the following general principles as ones consistent with delivering required flexibility to achieve projected timelines for developers while also planning for the eventual deliverability of long-term benefits to both economies for consumers and enterprise initiatives. These principles will also support broader and emerging European energy policy trends towards the liberalisation of the European energy markets, the increased economic and social necessity for energy security and the decarbonisation of the European energy system.

1. Non GB generation connection to the GB system asset configuration should ensure a route for further Interconnection into the UK and European markets.
2. Non GB generation connection to the GB system should provide a mechanism in the long-term for wider renewable energy trading for all market participants.

Asset configuration/interconnector development and competing grid connections run the risk that they may be costly and therefore economically “inefficient”. If these assets are designed in this way, the developers responsible will have to recoup these costs through a higher CfD prices and therefore risk being uncompetitive compared to other developers and other technologies. We therefore note that there is a very strong incentive on developers to design the most efficient assets possible and we have every reason to believe that this can be achieved.

Question 10: What are the technology challenges of delivering direct and exclusive connections? What are the technology challenges of delivering multi-purpose assets?

There is a technology lead time and supply challenge. This reinforces the need for a sense of urgency in finalising regulatory matters. There is a significant lead time between financial close and project delivery. It is anticipated that non-GB projects would need to complete financial close in a relatively short period of time in order to develop as the DC network or offshore grid is delivered. There is a limited range of suppliers for high voltage (HV) subsea cables due to high investment costs and long lead times for new capacity. This could be in the order of **35-40 months**. Other equipment is generally drawn from much larger transmission and distribution (T&D) industries which are relatively unconstrained, with the exception of HV transformers, where delivery times are set by general world demand.

As mentioned earlier one of the challenges is the existing current market proven application of multi terminal and back to back VSC-HVDC links is now up to around 1GW. This would necessitate several connections to the UK and multiple HVDC stations based on the understanding that the UK are interested in a total quantum in the order of 5GW before 2020.

Question 11: What are the potential benefits and challenges of enabling flexibility for a non-GB connection to also be used for a) market-to-market trading; and b) GB network reinforcement? What are the implications for investment certainty?

Challenges as above – HVDC proven technology scale at present.

The lack of interconnection capacity of scale and the requirement of further interconnection between markets could be addressed and facilitated as part of a non GB generation connection to the UK system. Where possible asset configuration should take into consideration future grid and grid reinforcement requirements on both the Irish and UK systems and would ideally address existing or future transmission constraints in the most cost effective manner to both system consumers. Managed correctly IWEA believe that generation from Ireland connecting to the UK can benefit both systems and consumers as it has the potential to deliver both additional interconnection and has the potential to alleviate the need for system reinforcement in the UK and possibly Ireland.

Benefits of additional Infrastructure (future market integration) include

- ❖ Potential Reduction in wholesale price of electricity. (Closer price coupling between the UK and Ireland)
- ❖ Increased security of supply.
- ❖ A Government and industry led approach may facilitate access to EU funding which would reduce infrastructure delivery cost.
- ❖ Potential mitigation of aspects of planned infrastructure in the UK and potentially Ireland
- ❖ Additionally IWEA believe that significant cost saving for the Irish and UK consumer can be achieved through system reserve sharing.

- ❖ Rapid Frequency Response (within 1-2s) though HVDC links can be used to manage frequency in GB.

To emphasise the asset configuration which will be flexible enough to allow market-to-market trading a recent National Grid/EirGrid study has showing the following benefits from a Integrated network design approach with connection to the Irish transmission system for a HVDC multi terminal connection with a connection sized at 0.5GW with a capital cost of £71M/€88M.

Estimated Annual Benefits and Payback		
Total annual benefits	£61m / €75m	Beneficiary
Trading	35%	GB and IRL
Response	29%	IRL Only
Generation Capacity	40%	IRL Only
Boundary Transfer	5%	GB Only
Payback Period in the region of 15 months		

Project investment certainty is clearly a critical issue, however as it stands based on the EU 3rd energy package the requirement exists to necessitate generation and transmission unbundling. As such project promoters can deliver their projects with financial institutions as per existing arrangements on the basis that at an appropriate point in time ownership of this asset will be removed and be auctioned to leave the project promoter whole in a manner that also protects UK and Irish electricity consumers.

5. Existing and potential regulatory options for application to non-GB connections

Question 12: Is the interconnector licence with exemptions(s), as currently available, a feasible option for non-GB connections? If not, what are the key challenges of applying this route to non-GB connections? How could these challenges be addressed?

This is a feasible option however IWEA note Ofgem’s view that there may be a need to secure approval from the European commission to award an exemption and the need at this late stage to explore this further would be very concerning. IWEA understand that the existing OFTO model in its current form may not be an option to deliver non-GB generation into GB due to its current legal definition in the electricity act. Required change would also take a considerable duration which would potentially negate delivery before 2020.

Project delivery via the interconnector license with exemptions appears at present to be the main option that can be delivered ahead of 2020. IWEA note that “*interconnector license via a derogation process*” may be a more appropriate terminology to reflect the required development needs. Despite this IWEA have concerns regarding the bankability of this option at present as the project developer would essentially be required to fully underwrite the transmission asset which would likely infer a very high cost of borrowing.

As such IWEA recommend that the transmission asset is underwritten to the same level or comparable value of existing OFTO arrangements. This form of underwriting would meet consumer, development and RA needs leading to a lower cost of capital for building transmission asset (and hence a lower cost of energy to the UK consumer).

The project developers of non-GB generation should be insulated from the commercial risk associated with incorporating additional capacity or assets required for market integration as the Project promoter will not directly benefit from this additional investment. IWEA are of the view that it would be appropriate to establish a dedicated project design and review group consisting of both Developers/s, TSO's and RA to ensure any design under this option would be future proofed.

Question 13: Under this route would an exemption (under Article 17 of the Electricity Regulation) be required? If so, which provisions would you seek exemption from? How would your project be affected if exemptions could not be applied for?

IWEA note the general principle that it is important that non-GB generation is treated in a fair and non-discriminatory manner when compared with other offshore generation. IWEA also note that the market has not provided for any significant interconnector investment under the merchant exempt framework and that exemption applications for interconnectors used to connect generation directly have not been vigorously pursued.

Question 14: Given that an application of the regulated Cap and Floor or fixed revenue model would take time to implement for non-GB connections, should these still be explored further?

The initial focus should not be on these options.

Question 15- 21 If so, what are the main challenges and benefits of applying a regulated Cap and Floor or fixed revenue model to non-GB connections? How could these be addressed?

The IWEA is of the view that much of the remaining questions in the consultation are on the basis that the basic asset configuration is an interconnector; and that this would include exemption from the Electricity Directive allowing the project developer develop the interconnector. On this basis IWEA believe that Ofgem should develop the basic principles first and then establish the detail of trading upon this asset platform.

In the interest of expediency IWEA request that Ofgem should now initially focus on options leading to the creation of a regulatory regime to be applied in the short-term, i.e. interconnector license with exemptions that is future proofed for system to system future trading in physical design. IWEA would encourage Ofgem to engage with the other appropriate RA's, TSOs, and project developers to develop an agreed set of principles such that the "basic asset configuration" can be utilised when required for broader renewable energy trading. This approach will more likely establish a bankable revenue model for developers that also appropriately protects existing and future consumers.

Conclusion

IWEA welcomes the opportunity to respond to this consultation and notes that, despite the focus on

2020 targets, IWEA believes that the regulatory mechanisms introduced should where possible take the longer term view into account as the duration of projects with investment decisions made today will extend beyond 2020. From an actual delivery perspective it is clear that the **interconnector license with exemptions as a variant of the** existing OFTO regime would offer the best option for the basic asset configuration to be delivered in advance of 2020. The OFTO framework is well established, industry, financial institutions and stakeholders and both familiar and have confidence that it can deliver projects and importantly allow projects secure funding. This can also be achieved for the **interconnector license with exemptions models**. Other options proposed would likely entail significant commercial, grid and regulatory uncertainty.

IWEA would welcome the opportunity to meet with Ofgem to discuss these views in more detail in the near future. IWEA believes stakeholders in both Ireland and the UK economies and consumers can benefit from trade in renewable energy both up to 2020 and beyond.