

Ian Marlee  
Senior Partner, Smarter Grids and Governance  
Transmission  
Ofgem  
9 Millbank  
London  
SW1P 3GE

Martin Simpson  
Head of New Energy & Technology

Tel: 020 7851 5395  
E-mail: [martin.simpson@thecrownestate.co.uk](mailto:martin.simpson@thecrownestate.co.uk)

14 December 2012

Dear Ian,

**Second open letter on the Integrated Transmission Planning and Regulations project: Response from The Crown Estate**

Thank you for the opportunity to respond to the second open letter on the Integrated Transmission Planning and Regulation (ITPR) project, published on 6 November. As we have set out previously, The Crown Estate welcomes this initiative and we believe that addressing issues associated with the interaction between the regulatory frameworks is essential if transmission is to be an effective enabler to maximising the deployment of offshore renewables in the UK. Our response addresses some of the specific questions raised in the open letter. We also attach as an annex the key findings from a report we commissioned from Poyry on potential barriers in the regulatory frameworks – and potential solutions – to enabling the connection of offshore generation in a progressive way. We trust this is helpful in developing and refining policy in this crucial area.

**1. The Crown Estate**

The diverse portfolio of The Crown Estate comprises marine, rural and urban properties across the whole of the United Kingdom valued in total at £8 billion (2012 figures). Under the 1961 Crown Estate Act, The Crown Estate is charged with maintaining and enhancing both the value of the property and the revenue from it consistent with the requirements of good management. We are a commercial organisation guided by our core values of commercialism, integrity and stewardship. The Crown Estate's entire revenue surplus is paid directly to HM Treasury for the benefit of UK citizens; in 2012 this amounted to around £240 million.

Our marine estate comprises virtually the entire UK seabed out to the 12 nautical mile territorial limit, in addition to the sovereign rights to explore and make use of the natural resources of the UK continental shelf, with the exception of oil, coal and gas. We own around half of the foreshore and beds of estuaries and tidal rivers in the United Kingdom. Our expertise includes marine resource management (e.g. marine aggregate extraction, marine renewable energy installations, seabed infrastructure, aquaculture and new activities such as gas storage and carbon capture and storage) and its interplay with other marine activities such as defence, energy, navigation and marine safety. We have a strong understanding of the needs of a broad range of coastal and sea users, as commercial partners, customers and stakeholders.

## 2. Overview comments

We fully support the aims and objectives of the ITPR project as we firmly believe that all steps should be taken to enable and incentivise the development of a more integrated approach to transmission where this is appropriate. The key messages from our response to the March open letter still hold. As such, so we have attached it for reference as Annex A and request it is read together with this response. Resolving regulatory barriers and reducing uncertainty are essential given how the generation mix is expected to evolve over the coming decades, with generation from projects located offshore making a significant contribution to total energy supply.

However, there are some aspects of the ITPR initiative that are disappointing. Firstly, whilst the initiative followed on quickly from the conclusions of the OTCP project published in March, it has taken several months to identify the core issues that need to be addressed (as set out in the open letter). This is mitigated to some extent by the confirmation that more pressing shorter term coordination challenges will be taken forward through the Offshore Coordination project. However, it will important that the conclusions from that work are not divorced from the longer term frameworks as ultimately both are dealing with how transmission is an effective enabler for all network users. We would like to see a defined programme established and published for the ITPR project as part of the Spring 2013 consultation. In addition to providing further confidence to stakeholders in the forward process, this should also help facilitate stakeholders in mobilising the necessary resources to participate in the ITPR project to ensure acceptable solutions are reached for all.

Secondly, whilst the open letter clarifies the relationship between ITPR and other initiatives more clearly, there is still a wider issue around ensuring all related initiatives are taken forward in a holistic way (including but not limited to transmission charging (both CMP213 and the informal integrated grid charging working group), proposals for anticipatory investment offshore and the recent findings from the NSCOGI project). We believe it would help industry if a mapping exercise identifying inter-relationships between related initiatives was developed, and ask Ofgem to consider how best this is taken forward. We recognise that this would not be a trivial exercise, but consider it would provide further confidence to stakeholders that solutions to related issues are being considered in a joined-up way. We are happy to work with Ofgem to help develop this if you consider this would be appropriate.

## 3. Response on issues raised in the open letter

**Issue1: The obligations and incentives on multiple parties involved in transmission network planning and delivery may not align to ensure that individual networks or assets develop in line with the overall needs of the system**

Q1: Do you think that the key issues, as described above, should be considered? What is the materiality of the issues identified?

We agree that the issues identified are the core issues on system planning and need considering holistically within the context of the ITPR project. We consider two areas should be given sufficient focus within this – (i) ensuring process transparency to give users confidence in outcomes and (ii) clarity over the governance and decision-making framework for design and delivery of transmission infrastructure.

Looking at system planning more broadly, we believe this should be able to take into account competing needs for limited landfall points across different sectors. For example, as the Carbon Capture and Storage (CCS) market develops and commercialises, there will inevitably be a need for new pipeline infrastructure, potentially landing in similar locations to offshore wind and interconnector sites. Enabling this would necessarily require cross-industry coordination, which is likely to become essential as and when there are competing needs for limited suitable landfall points.

Q2: Are there any other issues to be considered in this area?

The issues identified in this section seem comprehensive. One issue we would like to add is consideration of a 'central design authority'. As Ofgem is aware, this is currently being discussed across industry following a recommendation from the Offshore Wind Cost Reduction Task Force in June<sup>1</sup>. We note this is referred to later in the open letter, but explicit consideration should be given under this issue.

**Issue 2: The framework for GB transmission entities to engage in European transmission activities may not provide an effective means for all relevant parties to contribute, giving rise to a risk that the GB system is insufficiently represented at the European level**

Q3: How effective are the current arrangements in representing all GB transmission entities' interests within ENTSO-E?

We do not have any specific comments on this question.

Q4: How material is the impact of these arrangements on representation of the GB transmission system developments in the TYNDP and other related European activities?

A general comment we would make is that it is essential that structures and arrangements for the GB market should be in place to ensure that GB continues to be robustly represented in relevant European dialogue. Given the increasing importance of the European context for the transmission sector (e.g. re EU network codes), this should not be compromised in any way. We further consider a 'central design authority', if established, could provide a useful channel to represent a comprehensive input for GB to the European discussion.

**Issue 3: There is a potential for conflicts of interest for parties undertaking transmission planning and delivery**

Q5: How effective are the current business separation arrangements the transmission entities are subject to?

Q6: How material is the impact of the current arrangements on efficient network development?

Q7: Where networks are increasingly integrated, are there other areas where the question of conflicts should be considered?

---

<sup>1</sup> Offshore Wind Cost Reduction Task Force Report, June 2012, published on RenewableUK's website

Our general comments on Issue 3 and related questions would be in line with our comments for Issue 1.

**Issue 4: The regime interfaces for transmission related multiple purpose projects are potentially unclear, giving rise to a lack of clarity around regulatory treatment for these assets**

Q8: Do you agree that these issues associated with multiple purpose projects should be considered? What is the impact of the issues you identify as relevant? In particular how do they affect multiple purpose projects?

We agree that the issues raised in this section are relevant. Over the longer term, they are all important in their own right, but as we set out in our response to the March open letter, consideration of transmission charging in this initiative is vital given the behaviours it incentivises.

A further issue we would like to raise is that although the OFTO regime has two main features (i.e. 'wet' assets and competition), it is competition that is the core feature. If this is the case, the fact that the assets are 'wet' should not be the fundamental differentiation between OFTO/ONTO ownership. There should not be artificial barriers that would prevent the development of multiple purpose projects if these were most cost effective and/or timely solutions for the connection of offshore generation, as well as for the needs of other network users.

Q9: Do the issues capture all the potential regulatory barriers? Are there any other issues to be considered in this area?

The issues identified in this section are sufficiently broad and therefore should capture some of the potential regulatory barriers.

As Ofgem is aware, earlier this year we commissioned Poyry to undertake an independent assessment on whether the regulatory frameworks support the connection of offshore generation projects to the transmission system offshore (for example to a bootstrap, interconnector or multi-purpose hub) and if not what the specific barriers were to achieving these. The main driver behind this work was to better understand the hard challenges or constraints within the current frameworks which prevent innovative or progressive forms of connection such as this, where enabling them could be the most cost effective and/or timely solution to delivering offshore projects. We acknowledge that connection options such as this are unlikely to be appropriate in all cases, but where they are we believe they should not be prevented by artificial barriers. Enabling this would ultimately be in the interests of consumers.

Poyry's report focuses on the barriers to connecting offshore generation to the transmission system offshore under the different licencing regimes, i.e. the TO regime, OFTO regime and interconnector regime, and is structured as such. It identifies that there are some potentially fundamental barriers within each regulatory framework that would prevent an offshore generator from connecting to the transmission system offshore. The report also offers potential solutions to addressing these that Ofgem may wish to consider in further detail through the ITPR project.

We do not summarise the findings of Poyry's report in this response for reasons of brevity, however we do want to highlight that a key barrier presents itself as a result from the definition of 'offshore transmission' in the Electricity Act 1989. As this essentially is determined by the presence of offshore generation, it presents an endemic asset transfer risk to any party developing transmission asset physically offshore if it is used at any point in time to connect an offshore generation project. Unless this definition is amended or clarified, it is difficult to see how any multi-purpose projects can be developed. A number of approaches for resolving this have been discussed in the Poyry's report.

Poyry's work was informed by structured dialogue with a range of stakeholders including developers of offshore generation projects, TOs and OFTOs. This part of the work was essential as it provided a real context to the analysis. Aggregated summaries of the findings from this dialogue are included in the report.

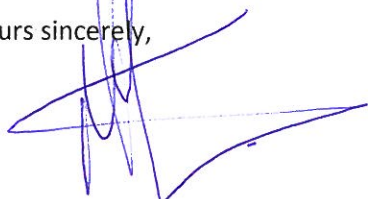
We have attached in Annex B the Executive Summary from Poyry's report. It is important to note that this report does not purport to address all challenges in the frameworks, nor does it try to establish what an 'optimal' framework could be. Furthermore, the opinions expressed in the report are entirely those of the authors and do not necessarily reflect the view of The Crown Estate. Nevertheless, we trust that the findings will be beneficial in your assessment and resolution of the issues.

#### 4. Conclusions

We trust that you find these further comments, and the report we commissioned from Poyry, helpful in developing and refining policy in this crucial area. Given the work we have been doing in this area, we have already had a number of bilateral meetings with the ITPR team, and we would be more than happy to discuss issues raised further with you. If you would be interested in such a meeting, please contact my colleague Richard Clay on 020 7851 5336 or [richard.clay@thecrownestate.co.uk](mailto:richard.clay@thecrownestate.co.uk) in the first instance.

We are happy for this response to be put into the public domain.

Yours sincerely,



Martin Simpson

**Head of New Energy & Technology**



---

**Annex A: TCE response to the March ITPR open letter**

Martin Crouch  
Partner, European Wholesale  
Ofgem  
9 Millbank  
London  
SW1P 3GE

Martin Simpson  
Head of New Energy & Technology

Tel: 020 7851 5395  
E-mail: [martin.simpson@thecrownestate.co.uk](mailto:martin.simpson@thecrownestate.co.uk)

25 May 2012

Dear Martin,

**Open letter on the Integrated Transmission Planning and Regulations project: Response from The Crown Estate**

Thank you for the opportunity to respond to the open letter on the Integrated Transmission Planning and Regulation (ITPR) project, published on 23 March. The Crown Estate welcomes this initiative and we believe that addressing issues associated with the interaction between the regulatory frameworks for transmission is essential if transmission is to be an effective enabler to maximising the deployment of offshore renewables in the UK. This response addresses some of the specific points raised in the open letter, as well as providing some general observations on the key issues identified.

**5. The Crown Estate**

The diverse portfolio of The Crown Estate comprises marine, rural and urban properties across the whole of the United Kingdom valued in total at £7 billion (2011 figures). Under the 1961 Crown Estate Act, The Crown Estate is charged with maintaining and enhancing both the value of the property and the revenue from it consistent with the requirements of good management. We are a commercial organisation guided by our core values of commercialism, integrity and stewardship. The Crown Estate's entire revenue surplus is paid directly to HM Treasury for the benefit of UK citizens; in 2011 this amounted to around £230 million.

Our marine estate comprises virtually the entire UK seabed out to the 12 nautical mile territorial limit, in addition to the sovereign rights to explore and make use of the natural resources of the UK continental shelf, with the exception of oil, coal and gas. We own around half of the foreshore and beds of estuaries and tidal rivers in the United Kingdom. Our expertise includes marine resource management (e.g. marine aggregate extraction, marine renewable energy installations, seabed infrastructure, aquaculture and new activities such as gas storage and carbon capture and storage) and its interplay with other marine activities such as defence, energy, navigation and marine safety. We have a strong understanding of the needs of a broad range of coastal and sea users, as commercial partners, customers and stakeholders.

**6. Context for The Crown Estate response**

By 2020, the UK must generate 30% of its electricity from renewable sources to meet its binding renewables targets. Offshore generation is expected to make a significant contribution to meeting this, and DECC's Renewables Roadmap indicates that offshore wind could have an installed capacity between 11 and 18 GW by 2020. This burgeoning industry is set to become a major UK manufacturing activity, bringing significant new inward investment, businesses and jobs. To help make sure this industry realises its full potential, we are taking a proactive approach. This ranges from co-investment in the consenting of projects through to positive engagement with statutory and non-statutory bodies, regulators, trade associations, local and national governments and representatives of the shipping, aviation and fisheries industries.

## **7. Overview comments**

We welcome the ITPR project as outlined in your letter of 23 March and elaborated on at the industry workshop on 16 May. We believe that reviewing now issues around transmission system planning and the interactions between the regulatory regimes for different classes of transmission asset is essential given the volume of offshore generation – and increase in interconnection – expected in the coming decade. Our perspective on these issues is informed from a number of angles.

As custodian of the seabed, we are required to manage this unique asset on behalf of all users and to maximise value on behalf of the nation. We do this by taking a long term view on development, seeking to minimise the footprint from activities and considering the interests of other users in our decision-making processes. We believe that a more coordinated and integrated approach to electricity transmission infrastructure – be it terms of reinforcements to the onshore system that are routed offshore (i.e. “bootstraps”), infrastructure to connect offshore generation projects or interconnectors – will ultimately optimise seabed usage, for example through providing greater visibility on planned transmission developments.

Our perspective is also informed by seeking to deliver programmes which will help realise the UK's ambition for the deployment of offshore renewables. As you are aware, we have undertaken a number of leasing rounds to date for offshore wind and wave & tidal sites, and for Round 3 in particular we have taken a proactive approach through co-investing in development activities across the zones. We believe seeking ways to enable offshore projects to connect offshore – for example to a bootstrap or to an interconnector – would de-risk offshore projects significantly, for example in terms of the capital outlay that is associated with connection<sup>2</sup> and also in terms of alleviating risk of delay associated with onshore reinforcements. Enabling this to happen may require a step-change in the current regulatory and legal frameworks, but we believe these should be fully examined through the ITPR project to ensure there are no artificial barriers that prevent developments like this occurring in instances where it would be cost effective and timely to do so.

The remainder of this response considers some of the key issues raised in the open letter.

## **8. Scope and objectives of the ITPR project**

---

<sup>2</sup> Predicated on the Generator Build model for offshore transmission infrastructure.



We wish to make three comments on the scope of the ITPR project:

- (i) We welcome the focus on the interaction between regulatory regimes. We would suggest that the scope should also include the transmission charging framework that would be needed to support delivery of a more integrated approach to transmission (including allocation of risk across users),
- (ii) We would suggest that any recommendations for change are implemented in a timely way to reduce uncertainty. To help deliver against this, we would recommend that mechanisms for implementing proposals are identified and agreed as early as possible so that the necessary preparations can be made to ensure implementation is not delayed (for example by ensuring appropriate Parliamentary time is available if that were needed), and
- (iii) In order to focus stakeholder attention on key issues, it will be as important to define what is out of scope of the review as what is included within scope. We would suggest this is made clear in the first full consultation document.

In delivering against the scope of the project it will be essential that:

- (i) any changes put forward should not disadvantage any offshore generation project compared to their current position (including in terms of cost, risks or programme), and
- (ii) existing or impending investment decisions and plans should not be undermined by any new arrangements.

## 9. Framework for network planning

As you will be aware, around 35GW of offshore wind capacity has connection agreements in place, with around 23GW of this total coming from Round 3 projects. Connecting these projects will require significant investment, and effective system planning is essential to ensure optimal solutions are delivered. This challenge is magnified when the connecting interconnectors is taken into consideration. We agree it is therefore timely to re-visit the approach to system planning. We made representations to this effect in our response to the OTCF conclusions document, and these points still hold<sup>3</sup>.

In terms of network planning, we consider two areas should be given sufficient focus – (i) ensuring process transparency to give users confidence in outcomes and (ii) clarity over the governance framework. On this latter point, Ofgem may wish to consider the option of establishing an independent nationwide supervisory body to monitor planning (potentially in a form similar to the existing Electricity Network Strategy Group).

Looking at system planning more broadly, we believe this should be able to take into account competing needs for limited landfall points across different sectors. For example, as the Carbon Capture and Storage market develops and commercialises, there will inevitably be a need for new pipeline infrastructure, potentially landing in

<sup>3</sup> Our response has recently been published on the Ofgem website:

<http://www.ofgem.gov.uk/Networks/offtrans/pdc/cdr/2012/Documents1/The%20Crown%20Estate%20response%20to%20consultation%20on%20potential%20measures%20to%20support%20efficient%20network%20coordination.pdf>

similar locations to offshore wind and interconnector sites. Enabling this would necessarily require cross-industry coordination, but this is likely to become essential as and when there are competing needs for limited suitable landfall points.

#### **10. Interfaces between onshore/offshore/interconnection regulatory regimes**

A key finding from the Offshore Transmission Coordination Project (OTCP) was that there is currently a lack of clarity on the regulatory treatment of assets that involve combinations of onshore reinforcements, offshore generation connections and interconnectors. We commented on these issues in our response to the OTCP conclusions document, and these points still hold. We note the simple diagrams presented in Annex 1 to the open letter, and agree these identify potential future scenarios. We would suggest two others are added – (i) focussing on multi-user projects and (ii) with interconnection via two offshore generation projects (i.e. one located in country A and one in country B).

In order to consider how the scenarios in Annex 1 could be delivered, it will be important that Ofgem considers the legal underpinnings of the onshore transmission, offshore transmission and interconnection regimes to assess whether they remain fit for purpose. We fully appreciate the different origins of each regime, and do not believe that the legal backgrounds should necessarily be the same. However, in order to maximise the benefits from an integrated approach to transmission, there should not be any artificial legal barriers which mean innovative developments (such as those outlined in Annex A) are frustrated. For example, we understand that the requirement in the Electricity Act 1989 to appoint an offshore transmission licensee for transmission assets which are used to connect offshore generation may actually contribute to preventing innovative concepts like offshore projects connecting to “bootstraps” or to interconnectors. If this is the case, we believe the scope of the ITPR project should give sufficient leverage to examine these in detail and make recommendations for change.

#### **11. Conclusions**

We trust that you find these comments helpful in developing your thinking over the coming months ahead of a full consultation in the Autumn. We would be more than happy to discuss the issues raised further. Please contact my colleague Richard Clay on 020 7851 5336 or [richard.clay@thecrownestate.co.uk](mailto:richard.clay@thecrownestate.co.uk) as necessary in the first instance.

Please note that all of this response may be put into the public domain.

Yours sincerely,

Martin Simpson

**Head of New Energy & Technology**

---

**Annex B: Executive Summary from the Poyry report to The Crown Estate ‘Regulatory Challenges to Connecting to Grid Offshore’ (Nov 2012)**

## **EXECUTIVE SUMMARY**

### **Context and purpose for this study**

The offshore renewable generation sector is facing a number of challenges as the UK energy industry responds to changing economic, technological and political priorities. One of the key challenges developers face is the delivery of timely and cost-effective connections to the electricity transmission system. At the same time, there appear to be barriers to connecting offshore generation to existing or new offshore transmission assets, which arise from the existence and relative incompatibility (in some cases) of three very distinct regulatory regimes, namely the ONTO, OFTO and IC regimes<sup>4</sup>.

In the light of these challenges, TCE has asked Pöyry to consider – and propose potential solutions to – three typical cases for connection of offshore generation to the transmission system offshore:

- **Case A:** connection of offshore generation to transmission assets offshore licensed under the ONTO regime;
- **Case B:** connection of offshore generation to transmission assets offshore licensed under the OFTO regime; and
- **Case C:** connection of offshore generation to transmission assets offshore licensed under the IC regime.

In essence, the regulatory barriers reviewed in this study arise from the consideration of two key questions for each licensing regime:

- Is it possible to build offshore transmission assets under the existing licensing framework?
- Does the regulatory framework enable the connection of offshore generation to those offshore transmission assets?

In this context, ‘enable’ refers to a legal and physical ability to connect supported by appropriate commercial incentives.

The primary objective of this report is to focus in depth on each of the three cases in terms of regulatory barriers, and propose potential solutions which could facilitate the connection of offshore generation to the transmission system offshore. TCE has asked us to explore this issue in detail to assess whether changes may be necessary to the regulatory frameworks to allow connections under the cases if they were cost effective and/or timely options for the offshore generator in question, and ultimately for GB consumers.

Our report also touches on the wider context for transmission network development, in particular to avoid case specific solutions which are mutually incompatible. However, the scope of our study means that

---

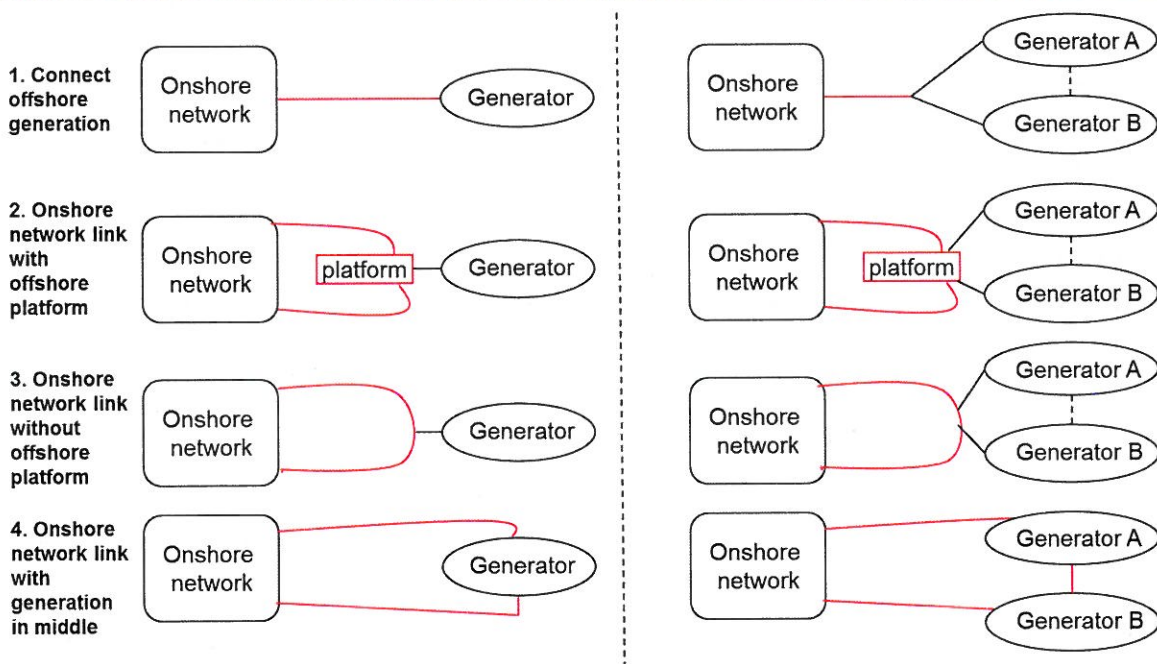
<sup>4</sup> As terms such as ‘offshore’, ‘onshore’ and ‘interconnection’ can be used in a physical sense or a regulatory sense, we use the following conventions throughout this report. We use the full word to denote the physical nature of the transmission assets – i.e. onshore, offshore and interconnection – and we use an acronym (i.e. ONTO, OFTO and IC) to denote the regulatory nature of the offshore transmission assets. We use the following colour coding for assets in all diagrams in this report – ONTO (red), OFTO (blue), IC (green), and black for assets where the licensing arrangements are not central to the discussion of a case.

our report does not seek to propose a radical overhaul to the existing regulatory frameworks (e.g. by developing a single regulatory regime covering all transmission). Instead we focus on potential for improved compatibility between the existing regimes.

### Case A – Connection of offshore generation to transmission assets offshore licensed under the ONTO regime

Figure 1 shows four possible examples that we consider for Case A. It shows two variants of each example, depending on whether there is one or multiple offshore generation projects connected to the offshore transmission assets. Dotted lines are used to denote offshore transmission assets whose existence is not central to the example.

**Figure 1 – Examples of Case A: Connection of offshore generation to transmission assets offshore licensed under the ONTO regime**



Our recommended solutions to the various barriers identified in Case A are best suited to where the offshore transmission assets are providing benefits for the onshore network as well as connecting offshore generation. This is best illustrated in the multi-purpose asset examples (i.e. 2-4). This reflects the fact that enabling example 1 would require the unwinding of the established principle in the GB regulatory framework that the OFTO regime should govern offshore transmission assets with the sole purpose of connecting offshore generation<sup>5</sup>.

<sup>5</sup> The spur linking the offshore generator to the 'bootstrap' in examples 2 and 3 (shown as a black line in Figure 1) is unlikely to be defined as being licensed under the ONTO regime in this context as it is not providing any direct onshore benefits. It would continue to be licensed under the OFTO regime.

**The first barrier identified for Case A is that the ‘Authorised Area’ specified in each ONTO licence is in general limited to onshore areas<sup>6</sup> (Barrier A1).** Therefore, the development of offshore transmission assets under the ONTO regime requires an extension to the Authorised Area through the implementation of a modification to Special Condition (SpC) AA of the relevant ONTO licence. Whilst it is possible that this extension could cover a wide geographical area (such as the UK Territorial Waters), the only precedent for such an extension (the Western HVDC Link) was very narrow, and asset-specific.

Therefore, we believe that the most likely solution to this barrier is further asset-specific extensions to the Authorised Area of the relevant ONTO licence on a case by case basis. This is a pragmatic solution that is consistent with both the single previous example of such an extension, and with the case by case approach we recommend for addressing Barrier A2. The extension of the Authorised Area will not on its own allow the connection of offshore generation to the ONTO assets. This requires an amendment to primary legislation, as discussed below (for Barrier A2).

**The second barrier relates to the inability to connect offshore generation to offshore transmission assets licensed under the ONTO regime (Barrier A2).** This is the result of the definition under primary legislation (s6c of the Electricity Act 1989) that a competitive OFTO tender is required to license offshore transmission assets to which offshore generation is connected (in GB offshore waters). This principle was confirmed by the recent decision to expressly forbid the connection of offshore generation in the extension of the Authorised Areas of the ONTO licences to enable the development of the Western HVDC Link. Therefore, the statutory definition of ‘offshore transmission’ would need to be amended.

Our recommended solution to addressing Barrier A2 is to allow the removal of the OFTO licensing requirement, by exception and with the requirement for approval by the Authority. This would allow the development of multi-purpose assets under the ONTO regime, where it is demonstrated that this approach would deliver a more cost effective and/or timely solution. This approach would not undermine the key principle of the OFTO regime that licences are awarded on the basis of a competitive tender process, but would introduce a degree of flexibility for the Authority to enable an alternative solution under certain criteria. For example, any decision-making under this framework would need to be informed by the scenarios described in high-level system planning documents, e.g. as produced by the NETSO or groups such as the ENSG (or a possible Central Design Authority, if such a body is introduced), as is currently the case for major onshore reinforcements.

**The third barrier identified for Case A relates to the definition of the Main Interconnected Transmission System (MITS) in the Connection and Use of System Code, or CUSC (Barrier A3).** This definition is relevant in the determination of upfront (user) commitment required for network reinforcement, ongoing transmission charges, and the provision of firm access to the transmission network under the Connect and Manage framework.

The current definition of the MITS is based around the type of transmission assets typically found onshore, and so does not extend offshore. This can disincentivise an offshore generator from connecting to offshore transmission assets in a non-radial configuration (i.e. anything other than example 1 for a single generator in Figure 1).

Our recommended solution to addressing Barrier A3 is to introduce narrow amendments where needed to remove short-term barriers, but to introduce a more fundamental change to MITS definition in the long-term. This will need to work across all of the cases (as this barrier transcends the cases we have considered), and ideally would be functionally based – akin to the use of the concept of whether an asset could be shared in defining the boundary between connection and local assets. Even if an offshore-

---

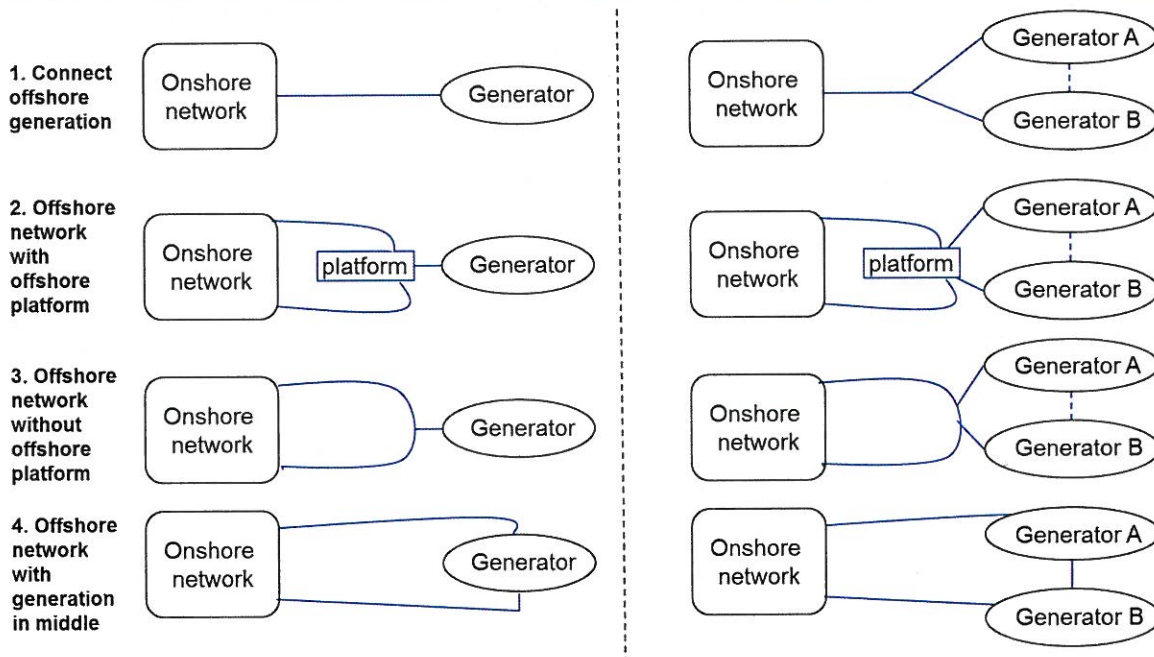
<sup>6</sup> This includes various islands as appropriate. For example, SHETL’s licence covers the Shetland Islands.

specific definition was added to the CUSC, this would likely be a proxy for the functionality associated with the current asset-based definition that works for the onshore network.

### Case B – Connection of offshore generation to transmission assets offshore licensed under the OFTO regime

Figure 2 shows four possible examples that we consider for Case B. It shows two variants of each example, depending on whether there is one or multiple offshore generation projects connected to the offshore transmission assets. Dotted lines are used to denote offshore transmission assets whose existence is not central to the example.

**Figure 2 – Examples of Case B: Connection of offshore generation to transmission assets offshore licensed under the OFTO regime**



In all of these examples, we consider that there is no specific regulatory barrier to building offshore transmission assets under the OFTO licensing regime, as long as the various provisions in the OFTO tender regulations and licenses are satisfied.

The development of these assets are ultimately driven by offshore generation developers, whether they build the assets themselves under ‘Generator Build’ (with the constructed assets then transferring to an OFTO through a tender), or if the assets are built under ‘OFTO Build’.

A number of offshore transmission links have been developed under the existing regime using the simplest asset configuration shown in Figure 2 – the connection of a single offshore generation project (the single generator variant of example 1). Therefore, as expected, the barriers that we have identified do not apply to this example. This is because the barriers are primarily driven by issues around the allocation of costs and risks to offshore generation developers in relation to the development of multi-purpose assets. This would include the connection of more than one generator and/or offshore reinforcement of the onshore network.

**The first barrier identified for Case B relates to the fact that the statutory definition of ‘offshore transmission’ requires connection of offshore generation (Barrier B1).** This means that developers lead the development of assets which will ultimately be licensed under the OFTO regime. This reflected the expectation at the time of the development of the OFTO regime that relatively simple, radial connections would be required. Indeed, the current OFTO regime has delivered those types of connections, with developers favouring the ‘Generator Build’ option for delivery. The focus on individual projects in this approach does not support the development of an offshore transmission asset configuration that could facilitate connection of other offshore generation projects and a more coordinated development of the offshore network.

Our recommended solutions to addressing Barrier B1 would be to:

- amend the Electricity Act definition of offshore transmission to allow the Authority to exempt a development from the requirement of offshore generation connection on a discretionary basis (as part of the development of an AI framework); and
- amend the requirements for a qualifying project in the OFTO tender regulations (on a forward-looking basis and with supporting guidance) so that developers would have to act as if subject to the transmission licence obligations on developing a coordinated network.

**The second barrier is driven by the absence of regulatory provisions to allow OFTO licensees to recover costs associated with Anticipatory Investment (Barrier B2).** This would encourage a more conservative approach with respect to Anticipatory Investment (AI), which could deter investment with benefits wider than a particular project.

Ofgem is currently considering how best to deliver an AI framework, with the key issue being around the risk sharing framework with the need for appropriate sign-off arrangements to protect consumers from excessive risks. There are then various options for the allocation of roles within these sign-off arrangements, with the Authority playing a key role in signing off the AI. If there are expected to be many such applications, then a Network Development Policy style approach could be used to reduce the sign-off burden on the Authority – i.e. rules-based sign-off for relatively low cost AI. This may need to be coordinated across the Round 3 zone developers.

**The third barrier in Case B relates to the definition of the MITS (Barrier B3).** It is similar to Barrier A3, as ONTO and OFTO assets both form part of the GB transmission system (which makes the MITS definition relevant).

The removal of Barrier B3 is expected to require the wider solutions discussed for Barrier A3, where we recommended a move to a functional (rather than asset-based) definition of the MITS.

## Case C – Connection of offshore generation to transmission assets offshore licensed under the IC regime

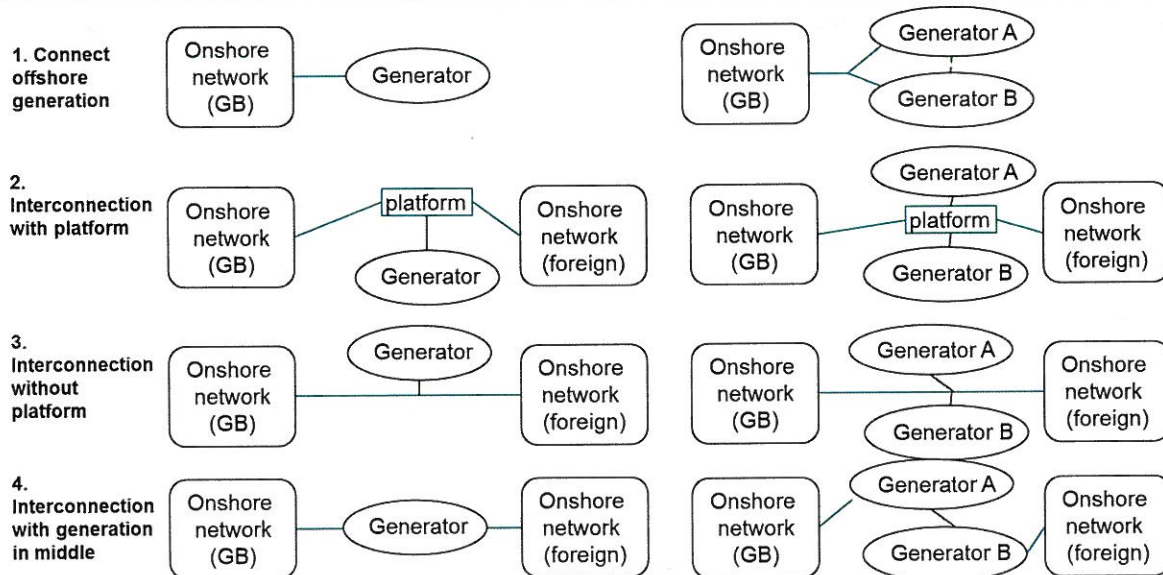
The IC regime in Case C uses the statutory definition of IC in UK (and European) legislation that relates to links between GB transmission and transmission systems in other jurisdictions. It is likely (but not certain) that assets under the IC licensing regime will also be subject to the developing European requirements on the allocation and use of capacity on links between separate price zones ('cross-zonal capacity').

It is also possible that assets under the IC licence may not be defined as a cross-zonal link (e.g. in the case that there was a single pricing zone covering GB and France) or that a cross-zonal link may cover assets under the ONTO or OFTO regime (e.g. in the case where GB was split into two pricing zones).

Therefore, the issues related to European rules on allocation and use of cross-zonal capacity are considered under our discussion of wider issues rather than in relation to a specific case (as the rules on cross-zonal capacity could in theory apply to assets licensed under any of our three regulatory regimes).

Figure 3 shows four possible examples that we consider for Case C. It shows two variants of each example, depending on whether there is one or multiple offshore generation projects connected to the offshore transmission assets<sup>7</sup>. Dotted lines are used to denote offshore transmission assets whose existence is not central to the example.

**Figure 3 – Examples of Case C: Connection of offshore generation to transmission assets offshore licensed under the IC regime**



<sup>7</sup> There is a specific barrier to the licensing of the development of offshore transmission assets under the IC regime in the first example shown in Figure 3. This is that the statutory definition of IC in UK (and European) legislation relates to links between GB transmission and transmission systems in other jurisdictions. Therefore, the link to the offshore generator would only be an interconnector if the generator itself was in a foreign jurisdiction.



**The first barrier identified for this case results from the definitions of the OFTO and IC regimes in the Electricity Act 1989 (Barrier C1).** However, the requirements for offshore transmission assets to transfer to the OFTO regime after the connection of offshore generation are less clear cut for this barrier than for the similar barrier in Case A (Barrier A2). This is because the statutory definition of assets coming under the IC regime in the Electricity Act 1989 states that the IC licensee is not regarded as participating in transmission of electricity, which is an activity that is a crucial element of the OFTO regime definition. However, the issue is clouded by the use in the definition of the IC regime of the word 'primarily' with regards to the conveyance of electricity between GB and foreign jurisdictions.

Our recommended solution to addressing Barrier C1 is two-fold:

- add appropriate text to the Electricity Act 1989 definitions of 'offshore transmission' and 'electricity interconnector; and
- ex-ante sign-off by the Authority triggered by intention to connect more offshore generation of whether or not the assets can still be defined as being 'primarily' for interconnector purposes.

**The second barrier relates to the scope of connection powers and obligations (Barrier C2).** This includes the fact that the powers of the NETSO to make a connection offer only cover the GB transmission system, and which does not include IC assets. Whilst the IC licensee is subject (if it has not obtained an exemption) to requirements to provide commercial access, it is not required to support physical connection offers.

Our recommended solutions to addressing Barrier C2 include extending the NETSO connection offer scope to interconnectors in GB jurisdiction. We would also introduce two transmission licence requirements (on a voluntary basis) into the standard conditions of the interconnector licence – requirements to provide information to the NETSO to help it prepare a connection offer, and becoming a signatory to the STC. We recommend the obligations be introduced on voluntary basis to try to deterring investment in IC assets, and therefore we also propose a number of provisions to encourage IC licensees to accept these conditions.

**The third barrier is driven by the absence of regulatory provisions to allow the recovery of costs associated with anticipatory investment (AI) under the IC regime (Barrier C3).** There is significant overlap between the issues raised for this barrier and for Barrier B2. Removing this barrier would ultimately require customers to provide some form of support for investment in IC assets. In doing this, robust sign-off procedures also need to be put in place to protect consumers from excessive risk.

Our recommended approach for the allocation of roles within these sign-off arrangements would be to try to mirror risk-sharing arrangements that are already a feature of the regulatory regime. We propose this could look something like:

- the NETSO would be responsible for identifying high-level benefits of AI in relation to IC assets in system planning documents;
- the (prospective) IC licensee would be responsible for initiating the AI process;
- Ofgem having the sign-off responsibility, typically on a case by case basis unless there are a number of low-value applications; and
- the NETSO provides revenue stream to compensate for any AI costs not recovered from generators.

## Wider assessment of barriers and solutions

In addition to the case-specific analysis presented in this report, we have identified wider barriers and possible solutions through our analysis and stakeholder interviews.

We are in complete alignment with stakeholders in two central areas in relation to wider barriers and solutions:

- Coordinated transmission system development is a good thing in principle (in terms of the potential to enable more cost effective and timely connections to the transmission system) but is not supported under the current regimes. As such, uncertainties in the regulatory frameworks risk deferral or curtailment of offshore generation build.
- The high level key issues which underlie this view and that need to be addressed.

The key wider issues are as follows:

- delays, risks and costs arising from the fact that responsibilities and rewards for developing and implementing coordinated solutions are not clearly defined (throughout the asset development process, including sign-off responsibility);
- licensing restrictions create asset transfer risk between ONTO and OFTO status, with consequent implications for responsible party;
- commercial incentives to pursue integrated solutions offshore are lacking, particularly with respect to AI, liabilities and ongoing charges; and
- the regulatory process is seen as fragmented, slow and uncoordinated, and as a result the regulatory burden is high, and regulatory uncertainty is high.

Further, there is a wider European dimension to consider. The key issues for any offshore generation in relation to the European rules on cross-zonal capacity are:

- regular (two-yearly) review of bidding zones (not necessarily mapping onto countries), which means that (offshore) transmission assets could move into or out of the status of being a cross-zonal link independently of whether or not offshore generation is connected;
- the (possible) need for directly connected offshore generation to purchase long-term capacity rights to access GB energy prices if connected to a cross-zonal link;
- the ability for directly connected offshore generation to access capacity on the cross-zonal link close to real time given the requirement to use long-term rights by the day-ahead stage (or surrender them for use in day-ahead and intraday trading); and
- provisions to allow TSOs to reserve interconnector capacity for balancing purposes.

## Conclusions and recommendations

Table 1 lists the specific regulatory barriers across all of our cases. It illustrates the overlap with the themes identified in our wider analysis of barriers through both stakeholder interviews and desk-top research.

For each case, the answers to two key questions for each licensing regime are highlighted in bold in the grey cells. The barriers for each case are also highlighted in bold.

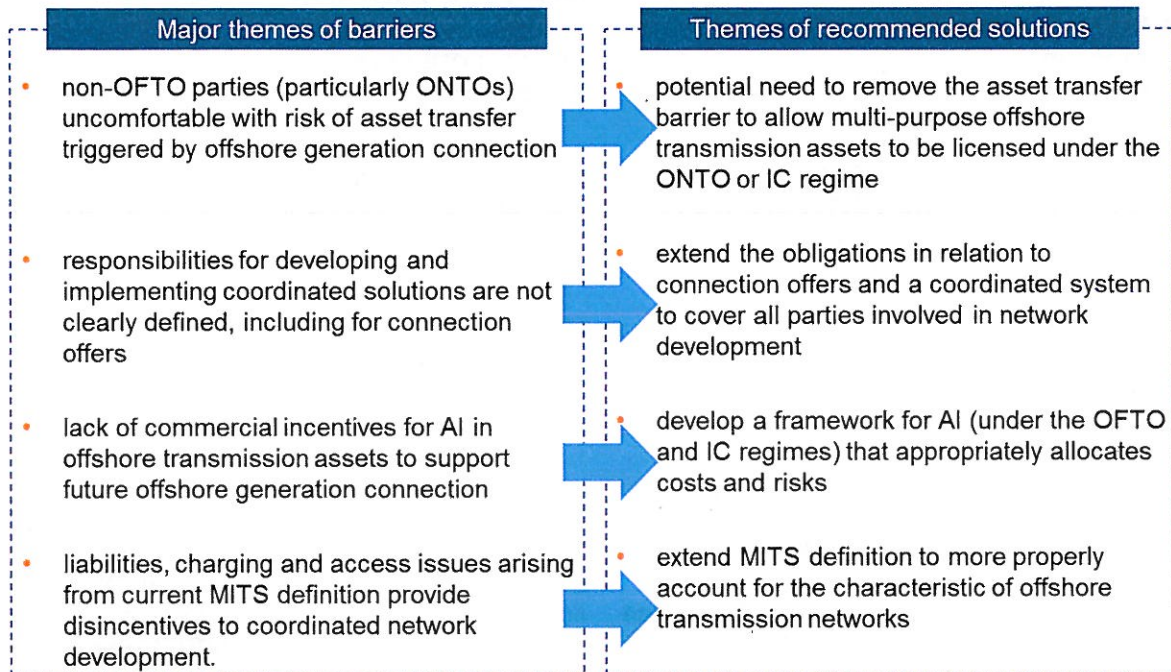
**Table 1 – Overview of regulatory barriers across the three cases**

Issue	Case A (ONTO)	Case B (OFTO)	Case C (IC)
<b>Is it possible to build offshore transmission assets under the existing licensing framework?</b>	<b>No</b>	<b>Yes, conditional on it being driven by a specific offshore generation project</b>	<b>Yes</b>
Scope of existing licensing framework	<b>A1: ‘Authorised Area’ for ONTO licence is generally limited to onshore</b>	Conditional to satisfying the various provisions in the OFTO tender regulations and licenses	Conditional to meeting statutory definition of IC
<b>Does the regulatory framework enable the connection of offshore generation to those offshore transmission assets?</b>	<b>No</b>	<b>Maybe (for simple, radial connections)</b>	<b>Maybe</b>
Change in licensing requirement for assets after offshore generation connection	<b>A2: Connection of offshore generation requires OFTO licence</b>	Connection of offshore generation is driver of licensing regime	<b>C1: Uncertainty around interaction between statutory definitions of ‘OFTO’ and ‘IC’</b>
Entitlements and obligations in relation to network development	No specific barrier identified	<b>B1: Obligations relevant in generator-led development of offshore transmission assets</b>	<b>C2: NETSO’s power for connection offers does not cover IC; no connection offer obligations on IC</b>
Provisions for underwriting of AI	AI provisions further developed for RIIO-T1	<b>B2: No arrangements in place to share AI risks with consumers</b>	<b>C3: No arrangements in place to share AI risks with consumers</b>
Definition of the MITS	<b>A3: Affects user commitment (attributable); TNUoS (local v wider); access (enabling)</b>	<b>B3: Affects user commitment (attributable); TNUoS (local v wider); access (enabling)</b>	Definition of the MITS is not applicable to IC assets (as they are not part of the GB transmission system)

Our view is that it is important that these barriers and possible solutions to them are examined as soon as possible. Moreover, it makes most sense to seek to identify a coherent overall regulatory regime under a single coordinated initiative by Ofgem, possibly alongside DECC, rather than through a series of parallel initiatives that appear uncoordinated. This coherent regime should cover the end to end process from identification of need to operation including sign-offs and aligned commercial framework to seek to future proof and eliminate undue uncertainty. Otherwise residual issues will continue to provide uncertainties, risks and costs which at best defer and at worst deter offshore development in all its potential forms.

Figure 4 brings together our analysis of the three specific cases and the wider issues to highlight the major themes of the barriers we have identified and the solutions that we have recommended.

**Figure 4 – Major themes in barriers and solutions**



Our recommended solutions have been informed by some fundamental principles for any change to the regulatory regimes. These are that all changes should:

- be coordinated and coherent (in terms of consistency with other developments, and ability to describe the overall framework);
- be decisive (in terms of speed of decision and certainty provided) to reduce the regulatory burden and uncertainties (and so we have distinguished between short-term changes and longer-term developments);
- not be associated with mandatory retrospective application; and
- not introduce hindrances to the development of more straightforward connections to the onshore network<sup>8</sup> where they are appropriate (in line with one of the key messages in stakeholder feedback).

Our solutions are designed to be internally consistent but do not cover the entire scope of the regulatory frameworks given the focused nature of our study. Over time, our recommended solutions should result in a transmission regime that is less fragmented and disjointed than under current arrangements. It should also more appropriately take account of the expected scale of offshore developments (including interconnectors) and the implications for overall development of transmission in GB including offshore impact on onshore and vice versa.

<sup>8</sup> These may include onshore-driven bootstraps, radial offshore generation connections (which have been the key vehicle for offshore generation connections to date and may continue to be appropriate for a number of offshore generation projects), and interconnectors with no (appropriate) interaction with offshore generation.