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Dear Jon

Offshore Transmission: Consultation on Potential Measures to Support Efficient Network Co-ordination

National Grid Electricity Transmission (NGET) has long been an advocate of the need for co-ordinated and efficient development of the electricity transmission network, both onshore and offshore. There are clear benefits to the GB consumer which can be delivered through efficient network co-ordination as it will:

- lead to lower cost network solutions in comparison to radial designs;
- provide efficient reinforcement through the construction of offshore routes where onshore planning and environmental constraints mean that traditional onshore infrastructure will be difficult to develop or will be likely to involve significant delays; and
- maximise the capacity provided in areas where there are physical, environmental or other network constraints (e.g. limitation on sites for cable landings, beach to onshore connection point corridors or the number of connections required to the onshore connection points).

The issue of co-ordinating offshore developments raises the same issues as those raised by network developments onshore and NGET is of the view that similar principles should apply to developments in each sphere.

NGET, acting in its role as the National Electricity Transmission System Operator (NETSO), has been making co-ordinated connection offers where we consider that these are consistent with our obligations and in the best interests of customers and consumers. A number of Round 3 developers are in receipt of such contracts, with the first signed offshore co-ordinated connection agreements for 6GW concluded on 7th March 2012 with Forewind which is developing the Dogger Bank zone. We have recently submitted a funding request, to Ofgem, to proceed with the pre-construction activities for the wider reinforcement works associated with the East Coast Round 3 wind farms.

We are pleased that Ofgem and DECC's recent Offshore Transmission Co-ordination Project Conclusions Report has recognised the benefits of co-ordination and we welcome the opportunity to comment on how that may be achieved.

Anticipatory Investment

The scale of potential offshore generation, onshore generation and interconnection capacity, coupled with the needs of existing generation, means that extensive transmission reinforcement is inevitable. To ensure the optimum level of transmission capacity (both onshore and offshore) is provided in the right place and at the right time, it is vital that the network is designed and engineered in such a way to be able to respond to these future challenges and requirements, while delivering the best outcome for GB consumers.

Anticipatory Investment is key to the delivery of the flexibility which the network requires given the uncertainties surrounding offshore deployment. The introduction of an approach that gives clarity on its treatment within the offshore regulatory regime is a sensible 'least regrets' approach which can be taken forward while other elements of the (currently fragmented) regulatory framework are clarified.

This approach will enable the co-ordinated development of electricity transmission infrastructure (both onshore and offshore) to continue without adversely affecting the achievement of contracted connection dates. In doing so, it is right that Anticipatory Investment is differentiated according to whom the likely benefit is to be attributable. Where Anticipatory Investment requires multiple party cooperation, treatment must be different and it is here where we have focused our responses.

In deciding how to take forward Anticipatory Investment, Ofgem will need to reflect on the activities required through the pre-construction phase and the role that the current connection process may play in this. The NETSO activities relative to offshore should be considered as shallow but broad i.e. the provision of scenarios to which network capacity should be delivered. Given that each TO is responsible for the economical, efficient and co-ordinated development of its own transmission system, any detailed design activities should sit with the relevant TO. They are best placed to assess all network options, consider innovation and identify a preferred approach.

Understanding the interfaces

The proposed approach of competitively appointing a TO to construct such an offshore project (which by definition has significant interactions with the onshore network and is part of the wider meshed network) has many challenges that need to be addressed in order to allow the required investment to be delivered in a timely and efficient manner.

The scope of the project needs to be sufficiently firm in order to allow a competitive appointment process to be run, which implies the need for significant amounts of pre-construction activity to be performed prior to competitive appointment. However, the handover between the pre-construction and construction parties (if they are different) risks being sub-optimal. Regardless of the point at which this handover is completed, interactions between the high level and detailed designs remain along with the challenge of which party progresses which part of the planning consent process. Our experience on the Western HVDC Link has proved that it was more beneficial to award the main construction contract before all consents. This avoided undue project delays and consequent increases in operational costs therefore representing the best deal for GB consumers.

It is likely that whatever choices are made around this handover, the overall result will be an investment timescale that is significantly longer than if one party progresses the project from beginning to end. The existence of handovers is likely to result in either increased redundancy risk or delays in completion of the required transmission capacity. These are similar issues to those we have identified in the content of Ofgem's proposals for the development of competition in the construction of onshore networks, on which we have already commented.

Things to Consider

Although the connection agreement includes the transmission designs required to facilitate the connection of any offshore generator, these designs are purely a starting point. In order to ensure co-ordinated development, the following additional issues need to be considered:

1. Ability of Pre-Constructor to Deliver

Pre-construction works are necessary to ensure that the optimal onshore/offshore solution is identified and this requires an in-depth understanding of all reasonable options. It includes, for instance, consideration of wider European integration and cooperation with other Transmission System Operators, interconnector owners and developers.

For pre-construction works related to wider system needs, we therefore consider that these should be undertaken by a party which:

- has knowledge of likely future developments, the requirements of the transmission system and the range of potential reinforcement options (both onshore and offshore) and awareness of developments in relation to wider European network integration; and
- can maintain flexibility within its investment plans (up to the point of procurement and construction) so that plans can be adapted to changing generation and demand backgrounds or other new information and/or new technologies that emerge as the work progresses.

It is for these reasons that the onshore TO is in the best position to undertake the pre-construction works for Anticipatory Investment, working closely with the NETSO through the various industry codes.

2. Definition of Pre-construction

Consideration will also need to be given as to what constitutes pre-construction works with activities ranging from initial design all the way to procurement capable of being classed as pre-construction. We do not agree with the definition of pre-construction proposed at present. For the purposes of offshore development, the following activities should be considered as pre-construction:

- Optioneering to determine the optimum integrated offshore network design(s): the optioneering phase will examine the design options for the integrated network, both in terms of topology and technology used. The points of connection to the onshore system will be further optimised, taking account of updated calculations of system requirements.
- Value Engineering to support a preferred network solution through to seabed survey: the value engineering phase will examine the deliverability of the integrated offshore network and will include identification of offshore cable routes, requirements for onshore landing points, environmental impacts and seabed surveys. This work would support the final application for consents for the integrated network.
- Production of functional specifications for use as part of project specific tender documentation.

To deliver the most economic and efficient solution, we believe that a single party should undertake the consenting process, followed by procurement, construction, ownership and asset stewardship. As such we do not see obtaining consents as part of pre-construction. This is because the specific route corridor and route alignment consultations and development consent order applications for consents all require equipment specific information (specific equipment type and dimensions, specific locations, orientation, noise surveys etc) that would not be known until the detailed design and procurement process had been completed.

3. Allocation of Risk

Risk is inherent at each of the separate stages throughout the process although the risks associated with each stage will differ in character and degree. The undertaking of pre-construction works by a party different to the final constructing party will lead to the introduction of design risk through the addition of handovers (procurement, consent etc) and the inherent inefficiencies that they can bring.

Consideration should be given to the management of liabilities and design choices such that subsequent parties (who will be responsible for delivery and operational liabilities) do not re-work activities already completed by others thereby wasting time, resources and money and so adversely impact the timely delivery of the project.

It is important that the party(ies) is/are appropriately incentivised and remunerated to manage the risk profile (which may be different to that present for onshore development where the role of the TO is wider than discussed in this consultation) actively. The development of an appropriate

mechanism would provide clarity to the party responsible for this work as well as safeguarding the interests of GB consumers.

For an efficient design, it will be important that where the infrastructure provides an alternative to onshore reinforcement, the owner faces appropriate incentives in relation to the performance of the assets within the wider meshed network and their impact on the constraint costs faced by UK consumers. In other words, a design cannot be considered efficient, even if it leads to the construction of assets at the lowest costs, if it will increase the overall costs faced by consumers through creating more difficulty (and costs) for the NETSO or if it does not factor in any appropriate late changes to the most efficient design.

4. Funding Pre-Construction Activities

Irrespective of which party is responsible for the pre-construction works, given the inherent risks and liabilities associated with these works, it is important that they are appropriately incentivised and remunerated to actively manage the risk profile.

Other Considerations

We note that a number of other consultation processes are underway at present (i.e. RIIO, the Integrated Transmission Planning Review, onshore competition) with the wider regulatory frameworks, within which offshore sits, possibly subject to substantial change going forward. It is important therefore that any discussion regarding offshore is reflected in that wider context and not done in isolation. It is important that the roles of the different parties are clearly defined and dovetail together to ensure maximum co-ordination and efficiency.

We look forward to a co-ordinated outcome which clearly defines the role of the NETSO and the various TOs.

Yours sincerely

By e-mail

Paul Whittaker
UK Director of Regulation

Appendix 1: Addressing Ofgem's specific issues

Our detailed responses to the specific questions raised in the consultation paper are as follows:

Chapter 2: Planning an Efficient, Economic & Co-ordinated Network

1. What are your views on whether:

a) the connection process (including the relevant industry framework) supports the design of an efficient and co-ordinated network ?

The connection process is a key step in the design of an efficient and co-ordinated network but given the interactions between multiple projects and the evolving demand and generation on the wider network it is not sufficient on its own. In order to deliver an efficient integrated network some investments need to be progressed on the basis of the needs of multiple projects, often working to different timescales. The ability to progress Anticipatory Investment is a key aspect of delivering an efficient design of the wider network.

The connection process does not currently support Anticipatory Investment for wider works offshore due to:

- it being based on the contracted background which includes all existing generation and only future generation with a connection agreement with the NETSO. Additional future projects are not included in this data set even though they may benefit from a co-ordinated approach;
- confidentiality issues with network operators, prohibits the sharing of information about different projects between developers. Developers may also be concerned about the competition law implications of them discussing future projects between themselves as they might perceive that this could be viewed as a form of market sharing. However, developers themselves will be best placed to comment on the extent of this concern for them;
- anticipatory Investment often being identified ahead of generation connection applications on the basis of scenarios prepared by network operators (for which no party has at that stage been identified to take forward the developments identified, albeit that such developments are clearly foreseeable);
- developers not being incentivised to find an overall optimum network solution for requirements over and above their project as they have different project drivers to a TSO; and
- the current timescales for developing contractual connection offers limiting how much work can be undertaken to identify Anticipatory Investment works and to co-ordinate offers.

b) the NETSO needs further powers to develop an efficient network?

At present, NGET as NETSO is required to develop an economical, co-ordinated and efficient network for the transmission of electricity. The NETSO currently fulfils these requirements through the publication of annual investment documents (e.g. SYS and ODIS) and through making economic and efficient connection offers (based on offers made to it by the relevant TO(s)).

We would broadly welcome an extension of the NETSO role and believe that could be in the best interests of consumers. However, any extension of the NETSO responsibilities beyond the existing ones highlighted (for example a greater design role) would require the enhancement of the NETSO's role and responsibilities. The NETSO would need to be able to direct and instruct pre-construction engineering and have access to all available data to enable it to determine the appropriate investment to develop an efficient network.

c) are there any barriers to the NETSO taking on an enhanced role in network development?

Extension of the role which the NETSO currently undertakes would require significant changes to the regulatory and commercial regime to provide clarity on the scope of the NETSO role.

This could include potential changes to primary legislation in order to re-cut the licensing regime and facilitate the exchange of information that is currently prohibited by the Utilities Act 2000 as well as having a potential impact on the nature of the connection process and the funding of NETSO. Changes to the role of the NETSO would require corresponding changes to the TOs obligations and consideration would also need to be given to competition law implications of such a co-ordinated approach, in order to manage the risk outlined in response to question 1a. However a co-ordinated role could be designed for the NETSO that does manage these issues and which would equally manage the competition law concerns that generators may have.

Changes may also be required to the various industry codes (e.g. CUSC and STC) and to the standard industry contract forms (e.g. Transmission Owner Construction Agreement (TOCA) and the CUSC Construction Agreement) to facilitate any enhanced NETSO role in implementing integrated and co-ordinated network developments.

To ensure the most economic and efficient co-ordinated network design is delivered, it may be necessary to modify/delay or cancel existing proposed network reinforcements to mitigate against stranding risk and to ensure that the optimum network is developed in accordance with evolving User requirements. Potentially, the NETSO may need to be able to share confidential contractual/non-contractual data with all parties undertaking pre-construction activities to ensure a level playing field amongst all relevant parties and as indicated above. This clearly raises significant legal implications in respect of the consequences of that sharing. The industry frameworks currently do not provide sufficient clarity on accountability for risk management and liabilities on these issues and the regulatory and competition law frameworks currently act as a significant barrier to this.

2. Do you agree with the proposed objectives for a reformed network planning document? Would other changes be useful?

We agree with the proposed objectives for a reformed network investment document and we have already initiated this change as outlined in our open letter dated 28th March 2012¹. The exact scope, content and delivery of our proposed national electricity transmission network investment document will be dependant on the comments, suggestions and feedback received from our industry colleagues. Our consultation will close on 4th May 2012.

It should also be recognised that any reformed network investment document would deliver a snap-shot view at a given point in time and therefore should not be used as a firm blue print of future network requirements given the range of future uncertainties. Whilst the information provided by the revised document will provide greater clarity on a range of potential future network outcomes and incremental developments, these designs will have to be continually updated in line with emergent User requirements and the output of any pre-construction engineering works. Therefore, we believe that the use of any such document should be limited to identification of potential no/least regret network development and additional pre-construction works required.

Chapter 3: Anticipatory Investment (Anticipatory Investment)

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

We do not agree with the definition of Anticipatory Investment as proposed in the consultation as it is not sufficiently broad. It should be widened to include:

- investment focused on co-ordinating the connection of offshore generation (as identified in the consultation);
- investment that is significantly driven by wider network benefits including mitigating onshore reinforcement of the NETS arising from the connection of new generation; and
- investment that is focused on enabling wider European market and network integration.

We note that potential definitions of pre-construction and construction have been provided in the consultation. Whilst this split may be appropriate for some schemes, it should be recognised that

¹ <http://www.nationalgrid.com/NR/rdonlyres/8EB49840-CFFB-454D-B62B-DC7D1DFD91EF/52744/OpenletterreSYSODISMAR12.pdf>

the scheme development process does not form a linear sequence of events as most of these activities occur in parallel, are interactive with each other and can be iterative. Rigid adherence to a process based on a linear series of events will lead to delays in development, inefficient investment and potential delays to the transmission works.

To ensure the effective and timely completion of projects and to enable the delivery party of the offshore network to bring full benefits of innovation, it is essential that the delivery party obtains the necessary planning permission and landowner consents. Consents will only be granted once the detailed specification of the design is known and this process will be iterative with the procurement process that the delivery party would undertake. Therefore to ensure there are no delays in delivering the required network investment, the delivery party should be identified prior to the commencing of the consenting work.

For example, in our experience it can in some circumstances be beneficial to the end consumer to commit to the construction phase prior to all consents being in place. Recently it was recognised that the optimum way forward in the delivery of the Western HVDC Link was to award the main construction contract before all consents were in place. This avoided undue project delays and consequential increases in operational costs, therefore representing the best deal for GB consumers.

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

We agree with the initial proposed objectives and regulatory design principles. However in establishing these principles, there is lack of clarity on how the requirement for co-ordinated investment (including elements of Anticipatory Investment) is identified and taken forward.

5. What are your views on use of the connection application process as the platform for identifying Anticipatory Investment opportunities? Could there be a need for Anticipatory Investment to be identified outside of the formal connection offer process?

The connection application process is not an appropriate process for determining Anticipatory Investment as it is based on the Transmission Entry Capacity (TEC) register which does not fully reflect the range of plausible generation background developments. The connection application process is however a key tool in determining what capacity is needed and provides valuable supporting information on when to move from pre-construction to the construction phase.

Triggering Anticipatory Investment through the connection process will, in many instances, lead to subsequently incremental radial development because the NETSO is unable, through that process, to factor in the requirements of other Users if they have not applied for connection. To design future networks (and identify requirements for Anticipatory Investment) it will be necessary to review network requirements against a range of future possible outcomes and to ensure that the pre-construction activity is undertaken in such a way as to retain the optionality to deliver the required network as user requirements become clearer.

Although proposed network designs could theoretically be continually updated via the connection process, this would result in potentially significant delays in the process. In 2011/12 NETSO received around 140 connection/modification applications. If each of these was used to trigger a re-evaluation and reworking of the plausible future network this would add significant time to the process. We believe there is a need for regular review and revisiting of network designs but that an appropriate industry engagement process (similar to that used by the Electricity Networks Steering Group - ENSG) could better serve this need.

In undertaking the ENSG studies and taking forward Anticipatory Investment, it was recognised that the lead time for undertaking major transmission reinforcements was typically longer than the development time for individual projects. Therefore a scenario based approach was utilised that tested network design evolution against a range of plausible outcomes and identified no/least regret options for pre-construction activity.

6. Do you envisage that changes to industry codes and licences are necessary to enable the connection offer process to identify Anticipatory Investment?

As indicated above, we consider that the present regime, in which a connection offer must be made within three months, does not facilitate the identification of Anticipatory Investment. In order to facilitate the identification of Anticipatory Investment as part of the connection offer process, a separate scenario based process with a longer time period would be more appropriate. Licence and code changes will be required however along with the development of potential additional obligations and incentives in order to facilitate and encourage efficient and timely delivery.

7. Are there barriers to co-operation in connection offers being agreed where a development involves more than one generator? What actions do you consider are warranted to address these?

There is currently no incentive or obligation under the current offshore framework for generators or OFTOs to consider wider network users (including onshore), or co-ordinate wider than for a specific project/zone. The NETSO however has specific obligations to consider wider network users (albeit this is currently confined to the contracted background). This generates a potential source of conflicting interests between the various parties as to the most appropriate design and therefore contractual connection solution.

Furthermore, different generators are market competitors and under generator build, multi-user assets become dependent on the co-ordination of competitors. This could lead to heightened counterparty risk and information exchange requirements that may potentially lead to compliance issues with competition law.

The development of individual generator projects would need to align to ensure co-ordination and to mitigate against variation in one project design affecting the connection date and/or design of the other generators. This is before charging, security, financing and resourcing issues are addressed. Plausible solutions include:

- placing very specific obligations and incentives on generators to enable them to overcome these issues; and
- identifying a third party to take forward the delivery of multi-user assets.

We would favour identifying such assets for delivery by a third party. See also our response to question 24.

8. Are there other parties that should be able to identify opportunities for Anticipatory Investment?

The NETSO will, as part of its network information provision, illustrate optimal network solutions. Where these arise as a result of greater 'within zone co-ordination' the developer is best placed to assess the benefits and to take forward the Anticipatory Investment request. In doing so, this assumes that there is no wider system benefits associated with these works.

Where Anticipatory Investment for wider system benefit is identified, we consider that this should be undertaken by a party which:

- has knowledge of likely future developments, the requirements of the transmission system and the range of potential reinforcement options (both onshore and offshore) and awareness of developments in relation to wider European network integration; and
- can maintain flexibility within its investment plans (up to the point of procurement and construction) so that plans can be adapted to changing generation and demand backgrounds or other new information and/or new technologies that emerge as the work progresses.

It is for these reasons that the onshore TO is in the best position to undertake the pre-construction works for Anticipatory Investment, working closely with the NETSO through the various industry codes.

9. What changes may be needed to ensure that assets that provide wider network benefits are designed, constructed, and operated to provide a longer assets lifetime?

It will be essential that any functional specification for assets that provide wider network benefit is specified for operation over a sufficiently long period. This requirement will be identified from analysis of future requirements and from cost benefit analysis that includes asset lifetimes. The regulatory framework and subsequent commercial contracts should ensure that the delivery party is appropriately incentivised to ensure asset lives are adequately specified and maintenance undertaken accordingly.

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

Onshore TOs can recover the costs of their investments over a significantly longer period than OFTOs, in part due to the confidence that there will continue to be customers using those assets. Offshore, there is less certainty of this for dedicated connection assets, as the viable technical life of a wind turbine is 20-25 years and the maximum length of time that ROCs can be issued for is 20 years². As a result, the licence period for an OFTO is 20 years, during which they will expect to recoup the value of their initial investment and it is on this basis that their revenue stream is agreed. However, this link between TO revenue stream timeframe and generator charges is unique to the OFTO arrangements and is not immutable.

Longer term revenue streams therefore may be appropriate for assets providing wider system benefits, particularly in relation to offshore developments in lieu of reinforcements needed to the onshore networks. Given the range of potential scenarios there is a case for considering the duration of the revenue stream of each asset on its merits. To the extent that the revenue stream is appropriate to the life over which the asset is expected to be used and useful, then this should minimise costs to consumers and avoid intergenerational issues.

11. What are your views on the best way to deal with possible interaction between assets with differing lengths of tender revenue streams?

In answering this question there are a number of associated issues that will have a bearing, such as what happens at the end of an OFTO's 20 year licence period and what happens should assets with different asset lives be sold between OFTOs with different licence periods. However, some high level points can be made.

Offshore charging arrangements link asset lives to a specific time period based on OFTO revenue, which is based on the anticipated operational life of offshore generation. Onshore charging arrangements consider asset lives independently from the transmission companies' revenue. For offshore, it is assumed that once the generator closes after 20 years of operation, the transmission assets will no longer be used. The installation costs have been recovered and there will be no ongoing operational or maintenance costs. However, we believe that those assets that are designated as Anticipatory Investment by the Authority would, by definition, be used by a broad and ongoing pool of users and it is therefore unlikely that any asset which provides wider network benefit would have such a limited life expectancy.

In this light, we consider that in situations where there are a number of interconnected Anticipatory Investment assets, there is merit in considering tendering for a specific integrated OFTO with a commensurately longer licence period and agreed revenue stream. This would result in lower tariffs for consumers as the costs of those assets will be recovered over a longer timeframe. Standard OFTOs will expect to recoup the value of their investments over the period of their licence, i.e. 20 years and are unlikely to take the risk of constructing assets with a 40-50 year life which they then cannot recover the costs for.

We do not consider that it is appropriate for the NETSO to specify asset design lives in connection offers, as the final decision as to what to build is a decision for the generator/OFTO. However we do believe that any assets which have been designated as Anticipatory Investment by the Authority should have an increased asset life and hence should have their costs recovered through the TNUoS tariff in line with onshore investments.

²<http://www.ofgem.gov.uk/Sustainability/Environment/RenewableObl/Documents/RO%20Generator%20Guidance%20May%202011%20final.pdf>

It may be that an alternative would be for a standard OFTO to be remunerated over 20 years for any Anticipatory Investment assets it builds but with the generation tariffs for those assets being based on a longer period. The shortfall between the generation charges and the OFTO payments could then be made up through an increase to the residual tariff that is levied by the NETSO on all users. This would provide the higher revenue stream associated with the standard OFTO licence period whilst maintaining lower local TNUoS charges for those generators connected to the OFTO. It would, however, increase the costs for all other users.

12. Do you agree with these high-level user commitment and charging principles for Anticipatory Investment?

We consider that the user commitment arrangements introduced through CMP192 (Arrangements for Enduring Generation User Commitment) will be beneficial in reducing the perceived barriers for offshore generators. The consultation notes a lack of clarity over how CMP192 would operate for integrated offshore assets. We believe that the definition of 'attributable works' in CMP192, along with the inclusion of capability-based sharing factors, ensures that strategic investment works such as Anticipatory Investments are clearly defined as being of wider system benefit. We therefore consider that the CMP192 methodology broadly aligns with the high level principles for user commitment as set out in Table 2 of the consultation.

The high level principles for charging set out in the consultation mirror the existing onshore arrangements, in that they target investment costs on those users driving investment and seek to do so in a way that accurately reflects the cost of investment. As such, we agree with the principles set out as being consistent with the onshore charging regime.

13. What areas of the transmission charging regime may need to change to facilitate Anticipatory Investment?

As we set out in our recent paper on charging for integrated onshore – offshore transmission³, the three main areas we believe require investigation are: i) the appropriate asset life for integrated transmission elements, ii) the inclusion of DC circuits into the charging calculation; and iii) accurately reflecting the varying levels of system redundancy in users' charges. Once the direction of Project TransmiT is more certain, we intend to further develop our thoughts on these areas with a view to raising any necessary code changes.

14. Is there a need for greater, earlier clarity on how including Anticipatory Investment within the scope of works might be treated under our assessment of costs?

Referring to our response to question 8, where the zone developer is in the best position to take forward any request for Anticipatory Investment, it is essential that the treatment of costs is known when options are being assessed, as this will impact the cost benefit analysis and the risk profile of the project.

Where Anticipatory Investment to the benefit of multiple network users are identified, with the relevant onshore TO undertaking the pre-construction works, it is essential that the relevant TO has early clarity on the treatment of costs.

15. What are your views on the potential form of these Ofgem assessment stages? Should it be optional for generators to go through the gateways where they would be undertaking the subsequent works?

We agree that two-stage gate assessments are appropriate in taking forward co-ordinated investment ahead of both the pre-construction and construction stages. The gateways should apply to all parties undertaking Anticipatory Investment as they will ensure that Ofgem retains the ability to stop unnecessary investment and should provide comfort for the developers regarding revenue recovery.

³ <http://www.nationalgrid.com/NR/rdonlyres/28C89919-815F-4AD9-8ACF-4CC246EA18B6/51330/Finalintegratedchargingnote.pdf>

We believe that the form of the first potential Ofgem assessment is broadly appropriate:

- in the case of generator-led pre-construction works, we agree that the generator would lead on submitting any request for Anticipatory Investment funding but would draw on the NETSO, local TOs and other parties as relevant and necessary; or
- in the case of TO-led pre-construction works, we believe that the local TO should lead on submitting any request for Anticipatory investment, drawing on the NETSO, neighbouring TOs and generators as relevant and necessary.

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

We believe that the assessment criteria already applied for onshore Anticipatory Investment are appropriate. These should be applied consistently for all Anticipatory Investment, whether onshore or offshore, or TO/OFTO/developer led.

The level of supporting information for taking forward Anticipatory Investment should be appropriate to the stage of the proposed investment. A good example of how this can be effectively managed is the Western HVDC Link where a relatively low threshold of evidence was required to support taking forward pre-construction engineering but a very strong need case was required to be demonstrated before commencing the construction phase. This approach was appropriate, given the costs of these investment activities.

We also believe it should be the responsibility of the party undertaking Anticipatory Investment to produce the appropriate evidence to meet the assessment criteria. The appropriate incentives should also be in place to ensure that the need for Anticipatory Investment is continually kept under review.

17. What are your views on the appropriate timing of the possible Ofgem assessment stages?

We believe that the straw-man as presented, for the wider system works, will introduce unnecessary delays as it is based on the assumption that Anticipatory Investment will be identified at the time of connection. For reasons stated previously (see response to question 5), we do not believe this is appropriate.

A more appropriate model for co-ordinated investment would be based on a scenario approach (such as that undertaken in the ENSG), with sufficient evidence to support the initial pre-construction and subsequent construction activities and that allows for industry review and challenge. For example:

- Stage 1 – Pre-construction Engineering: The supporting evidence for taking forward pre-construction engineering should be separate from the connection application process. This should be driven from a scenario based process that demonstrates that the benefits of keeping open future optionality and flexibility in meeting future requirements, offsets the cost of undertaking pre-construction activities.
- Stage 2 – Construction: A detailed appraisal which demonstrates that the proposed solution is in the best interests of the consumer. In developing a straw-man for taking co-ordinated investment forward (including Anticipatory Investment), it is essential that the process does not extend the timescales for the delivery of offshore transmission assets.

18. What information should, in your view, be provided as part of any published guidance that supports Anticipatory Investment approval?

We agree that published guidance on the process supporting Anticipatory Investment should include, as a minimum:

- the different steps in the process and different parties' responsibilities at each point;
- what Ofgem would expect to see in the submission; and
- Ofgem's approval criteria, including information on what factors might lead to a change in decision between the assessment stages.

19. Should there be additional requirements to share information with Ofgem to help streamline Ofgem's assessment of Anticipatory Investment for a project? What information should be included?

Given our responses to questions 5 and 17, we would expect the NETSO, as part of a separate, scenario based process, to make information available to Ofgem that identifies where broader network Anticipatory Investment may be appropriate and the form that may take.

On this basis, Ofgem should have early visibility of the potential level of requests it may receive which should ensure that it is resourced appropriately to deliver a timely and efficient assessment process.

20. What are your views of the different options for who should undertake pre-construction works for assets that are driven by wider network benefits?

Pre-construction works are necessary to ensure that the optimal onshore/offshore solution is identified and this requires an in-depth understanding of all reasonable options. It includes, for instance, consideration of wider European integration and cooperation with other Transmission System Operators, interconnector owners and developers.

For pre-construction works related to wider system needs, we therefore consider that these should be undertaken by a party which:

- has knowledge of likely future developments, the requirements of the transmission system and the range of potential reinforcement options (both onshore and offshore) and awareness of developments in relation to wider European network integration; and
- can maintain flexibility within its investment plans (up to the point of procurement and construction) so that plans can be adapted to changing generation and demand backgrounds or other new information and/or new technologies that emerge as the work progresses.

It is for these reasons that the onshore TO is in the best position to undertake the pre-construction works for Anticipatory Investment, working closely with the NETSO through the various industry codes.

Consideration will also need to be given as to what constitutes pre-construction works with activities ranging from initial design all the way to procurement capable of being classed as pre-construction. We do not agree with the definition of pre-construction proposed at present. For the purposes of offshore development, the following activities should be considered as pre-construction:

- optioneering to determine the optimum integrated offshore network design(s). The optioneering phase will examine the design options for the integrated network, both in terms of topology and technology used. The points of connection to the onshore system will be further optimised, taking account of updated calculations of system requirements;
- value engineering to support a preferred network solution through to seabed survey. The value engineering phase will examine the deliverability of the integrated offshore network and will include identification of offshore cable routes, requirements for onshore landing points, environmental impacts and seabed surveys. This work would support the final application for consents for the integrated network; and
- production of functional specifications for use as part of project specific tender documentation.

To deliver the most economic and efficient solution, we believe that a single party should undertake the consenting process, followed by procurement, construction, ownership and asset stewardship. As such we do not see obtaining consents as part of pre-construction. This is because the specific route corridor and route alignment consultations and development consent order applications for consents all require equipment specific information (specific equipment type and dimensions, specific locations, orientation, noise surveys etc) that would not be known until the detailed design and procurement process had been completed.

21. Could OFTOs potentially have a role in undertaking pre-construction works for assets significantly driven by wider network benefits? How might this work?

We do not believe that this would be an optimum solution as there are a number of issues that would have to be overcome. These include:

- defining a process to allow pre-construction works to be tendered;
- the management of the tender process to ensure no impact on overall project timescales; and
- ensuring consistency of approach between different OFTO pre-construction works.

22. Do your views of the attractiveness and feasibility of an early OFTO build option differ for assets that are driven by wider network benefits?

Referring to our response to question 7, we identified that our favoured approach to solving the issues of delivery of multi-user assets and competition between generators would be for a third party to take forward this activity.

This third party could be an existing onshore TO (particularly where the multi-user assets mitigate significant onshore reinforcement works) or could feasibly be an OFTO operating under an early build, subject to the tender and evaluation process not impacting on delivery times scales and including appropriate assessment of the relevant OFTOs delivery capability to ensure the project's successful commissioning.

23. Are there changes that can be made to enhance the incentives on offshore generators in undertaking pre-construction and construction works for assets that are driven by wider network benefits?

Referring to our response to question 7, we do not believe that developing additional incentives for generators to undertake wider works represents an optimum delivery solution. We believe that the optimal approach to solving the issues around delivery of multi-user assets and competition between generators is for a third party to take forward this activity.

24. What would be the impact on the attractiveness of generator self build option for assets that have wider network benefits if additional delivery incentives are incorporated? Should the OFTO build option be the main focus for this type of asset?

Under the existing frameworks, the offshore generator is in network terms the "incumbent TO". Currently they have the right to optioneer, design, consent, construct and commission the network to connect their wind farm to the onshore point of connection. They may choose (under the OFTO build model) to leave the construction and commissioning elements to an OFTO once they have first completed the optioneering, design and consenting stages.

However, for wider works, the asset, by definition, is for the benefit of multiple network users, including those onshore. The challenge will be to determine who is the "incumbent TO" from the possible multiple offshore generators and existing onshore TOs. Given the potential conflicting interests identified in our response to question 7, we favour an approach to the delivery of multi-user assets and competition by a third party. This third party could be an existing onshore TO (particularly where the multi-user assets mitigate significant onshore reinforcement works) or could feasibly be an OFTO operating under an early build, subject to the tender and evaluation process not impacting on delivery times scales and including appropriate assessment of the relevant OFTOs delivery capability to ensure the project's successful commissioning.

Although developers could potentially establish contractual relationships for the delivery of co-ordinated wider network assets, the question remains as to whether this delivery party can be appropriately incentivised to act in the interests of wider onshore network users removed from the locality of the works. However, if this delivery party could be suitably ring-fenced from the generation development operations there is no reason why it should not itself operate under an early OFTO build (recognising that the asset and revenue stream could be sold post completion).

25. What are your views on how any distinction between offshore generators focused and wider network benefit assets should be made?

There are clear cases where elements of an offshore integrated design include both offshore generation and wider network benefits. For example, a radial design to connect the Firth of Forth offshore wind farm project might include £1.5bn of OFTO assets from the wind farm to the Scottish coast. In addition there may be a £1bn offshore transmission circuit from Peterhead to a point on the transmission system in England. An integrated solution would combine these two projects to form a Peterhead/Firth of Forth/NGET multi-terminal link at a cost of £2bn including residual connections from Firth of Forth to the Scotland coast. In this instance, the equitable charge-out of the £2bn involves some share to the Firth-of-Forth generator and some share to wider network users (the exact sharing fractions obviously merit much further analysis and consultation).

Hence, it is clear to us that the regime for any 'Integrated' offshore assets should accommodate the ability to charge fractions of total asset costs to the offshore generator(s) and fractions to wider network users. Whatever party is designing such assets should retain records of the design decision process, sufficient to inform debates on how the eventual costs should be charged out.

26. What role could commercial contractual arrangements have in ensuring that pre-construction assets are passed to the relevant party and the first developer can recover their costs?

Where pre-construction costs and/or assets are associated with co-ordination of the connection of offshore generation within a zone, with no significant wider network benefits, we believe that the zone developer is in the best position to undertake any assessment of benefits of co-ordination, to take forward any request for Anticipatory Investment and to deliver any pre-construction works. In this case, there would be no need for the transfer of assets or recovery of costs until the appointment of an OFTO under the current arrangements.

Where pre-construction costs and/or assets are associated with the delivery of network solutions which deliver wider network benefits, there is the potential need for a transfer of costs and/or assets to the relevant delivery party. The consultation discusses the potential for costs to be recovered through commercial arrangements between generators.

However wider works by definition, will benefit multiple network users beyond the connecting offshore generator. This raises the issue of with whom should the party delivering pre-construction works enter into contractual arrangements. From project to project, the list of potential parties could vary significantly between a small number of offshore developers and a large number of onshore and offshore developers. It would therefore seem preferable to determine an appropriate framework for recovery of costs that involves regulatory commitment to ensure that the party undertaking pre-construction works is appropriately incentivised to do so.

We also believe that transfer of risks and liabilities warrants significant further consideration alongside the transfer of costs and assets. Following pre-construction works a number of uncertainties will remain for any given project and determinations/assumptions made during the pre-construction works will carry certain liabilities and risks. The transfer framework needs to deliver clear accountability for those risks and liabilities and their documentation in order to ensure that:

- the party undertaking pre-construction works does not carry forward risks and liabilities it cannot be reasonably expected to manage; and
- the party undertaking asset delivery is able to appropriately price the risks/liabilities associated with the asset for which pre-construction works have been undertaken.

27. What changes may be needed to support the process? What would be the impact of requiring an OFTO to hold assets for future generators?

Whether a generator or any other party undertakes pre-construction and construction of assets delivering wider network benefits, it is of critical importance to ensure that they are able to recover efficiently incurred costs and appropriate returns for the whole asset. Otherwise there would be a significant financial disincentive to any co-ordinated investment.

28. Will commercial arrangements and industry codes and licences provide sufficient access rights for shared assets? If not what changes might be needed to support the process?

Network access rights are granted by the connection agreement between the NETSO and the generator. If one generator is building shared assets to which others require access, that generator should have no influence over the access rights of those third party generators – their rights are governed by their connection agreements with the NETSO. However it is not clear what agreement exists between the generator and the NETSO for the building of the shared network.

29. Are there any other issues with shared assets that need to be considered?

We note that a number of other consultation processes are underway at present (i.e. RIIO, onshore competition, the Integrated Transmission Planning & Regulation project) with the wider regulatory frameworks within which offshore sits possibly subject to substantial change going forward. It is important therefore that any discussion regarding offshore is reflected in that wider context and not done in isolation. It is important that the roles of the different parties are clearly defined and dovetail together to ensure maximum co-ordination and efficiency.