Jon Parker
Offshore Coordination Policy
Ofgem
9 Millbank
London
SW1P 3GE

Inveralmond House
200 Dunkeld Road
Perth
PH1 3AQ

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lesley.gray@sse.com
01738 516854

Dear Jon

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

Thank you for the opportunity to respond to Ofgem's consultation published on 1 March 2012. SSE Renewables' response to the specific questions posed can be found in the Annex to this letter. I would also like to set out SSE Renewables' general thoughts on the coordination project as follows.

Our Projects

SSE Renewables is presently represented in the development of five major offshore wind projects under the enduring regime (Galloper, Firth of Forth, Dogger Bank, Beatrice and Islay). Four of the projects have signed Connection Agreements and the Connection Application was submitted recently for the remaining offshore wind project. SSE Renewables has informed National Grid of its preference to build the OFTO assets. The preference to go 'generator build' is strongly driven by the following;

- SSE Renewables' established position in the industry, which has enabled us to develop communication channels with relevant stakeholders;
- We have already carried out the ground work with key shareholders associated with licensing, permissions and legal documentation;
- We are best placed to manage the risks associated with the programme, planning consents and over all project finance;
- We have already developed a working relationship with key equipment manufacturers, project delivery and installation providers;
- The generator build option allows for a single point of control of the complete project, which allows for consistency and efficiency in developing the project; and
- If the OFTO is building the assets then this adds significant interface risk into a project that is already very complex, e.g. from a project management perspective.

SSE Renewables also has an existing offshore projects in Irish territorial waters (Arklow Bank) which has been awarded additional consents for the installation of up to 200 turbines in 4 phases, with a capacity of approximately 520 MW. This consented site is unlikely to receive a grid connection to the Irish transmission network until post-2020. Through the British-Irish Council, an All Islands Approach to energy resources has recently been considered, which may support an interconnection approach in the future. Furthermore, the Integrated Transmission Planning and Regulation project (ITPR) has explicitly included in its scope, the scenario where renewable generation in a non-GB country could connect to the GB coordinated network. We expect that the regulatory and legislative challenges associated with this approach will be explored through the ITPR project. SSE Renewables is keen that the present project leaves open the potential for the connection of offshore wind from other Member States. This is consistent with the wider goal of achieving further market integration which, as a matter of EU policy, is considered to be in the best interests of the consumer.

Additionally SSE Renewables are developing four intermediate wave/tidal projects (Costa Head, Westray South, Brough Head and Cantick Head). The initial development phases associated with these projects are small (10-30mw) and assume a collection point onshore as opposed to offshore. However second development phases are likely to be larger (50-200MW) in size therefore triggering the need for offshore collection points and offshore transmission infrastructure.

What needs to be achieved?

Ofgem and DECC have already summarised the key barriers to coordination in the OTCP Conclusions Report issued along with this consultation[1]. These have also been identified and discussed in the Redpoint Energy report commissioned by the OTCP. Ofgem should therefore already be well aware of the complexity of the task ahead. It is important to keep this matrix of issues at the forefront of the development of any approach going forward. A holistic solution will be needed in order to deliver effective network coordination: for example, while addressing the issue of funding and assessing AI on one hand, Ofgem should not lose sight of the technical barriers (i.e. key for network coordination will be how to achieve interoperability) that will, at the same time, present a difficult challenge for developers. For example, there may be a need to amend the SQSS to take account of a coordinated DC network.

We consider that it is important to establish from the outset of this consultation what SSE Renewables, as a developer, considers are the key requirements that need to be met by the regulatory regime. In short: **what do developers need from the regulatory regime?** This question is important. It should lie at the heart of the policy development because if the needs of the developer are not met, then the offshore deployment potential identified in the Government's Renewable Energy Roadmap will not be achieved.

The answer to this question is simple: SSE Renewables requires a reliable, cost effective connection to the network without delay. Further, the regulatory environment (including the consenting, planning and charging regimes) need to minimise the uncertainty and risk in order to incentivise investment both in the development itself, but also in the supply chain that developers rely upon to progress their project. We appreciate that Ofgem is already aware of these needs. While identifying the required outcome is not a difficult task, achieving it in practice is a much trickier proposition. A second question needs to be asked: **how is coordination achieved in a way that is consistent with the needs of the developer?** The barriers identified by Ofgem and referred to above will all require to be overcome in order to avoid the concept of network

[1] These being: (i) the need for overall network planning; (ii) Anticipatory Investment (which itself contains a myriad of issues); (iii) consenting for AI; (iv) uncertainty regarding how the security and transmission charging will work for offshore networks; (v) regulatory boundaries regarding the interaction between wider (onshore) reinforcement and offshore development; (vi) commercial availability of necessary technology; and (vii) interoperability of HVDC equipment supplied by different suppliers (e.g. equipment supplied by ABB and Siemens have different technical specifications- how will they interact in a coordinated network?)

coordination running counter to these needs. All of these barriers present difficult challenges. For the purposes of the present consultation, the key challenges relate to the question of who undertakes (and, in the first instance, pays for) the AI (page 31 to 36 of the consultation paper); funding of AI (pages 23 – 26 of the consultation paper); and transfer of the OFTO assets (and, particularly, the transfer value) (pages 26-31 of the consultation paper).

The Key Challenges

Undertaking AI

Turning firstly to who undertakes the AI. The consultation notes that the lead generator will undertake pre-construction activity and that it would be left to the generators to deal with cost recovery issues through commercial arrangements. While we accept that the issue of cost sharing should primarily be a matter for the generators to agree between themselves, we consider that there is a need for a regulatory "backstop" to sit behind this commercial activity. This is particularly important in the context of how this interacts with recovery of costs from the OFTO through the tender process (discussed below). Ofgem recognises (in para. 3.68) that the generator who undertakes the works may need additional assurance that they will be able to recover the costs.

However, there are onshore transmission rules on user commitment, but they do not currently have application offshore or between generators. It is therefore unclear how this additional assurance will be achieved under Generator Build. Furthermore, in relation to construction, all that Ofgem's Straw-Man provides is that it "will be delivered through either the OFTO build or Generator build option". Again, ensuring recovery of the other generator's share of the costs will be a key concern for the lead generator (and its funders). Also, coordinating the build timescales of the shared assets with the sole assets will present challenges, as will issues of data sharing, technical interoperability and delivery incentivisation.

As each generator will have different commission dates, we have further concern in relation to the treatment of TNUoS. Will the first generator be asked to fund 100% of the over sized OFTO asset prior to the remaining generators connecting into the system? Until the remaining generators are commissioned, there is no mechanism to collect TNUoS in relation to their share.

Funding of AI

In relation to funding, Ofgem discusses two issues: (i) TNUoS network charging; and (ii) user commitment. In relation to (i), as National Grid have confirmed in their paper on charging for integrated networks (referred to by Ofgem, para. 3.28), the method for calculating TNUoS charges does not yet give consideration to integrated onshore-offshore arrangements. Further, the same paper also notes that Project TransmiT does not extend to cover integrated onshore-offshore arrangements. Therefore it appears that much work is still to be done to ensure that the charging regime is fit for purpose. However, Ofgem evades this important issue in the consultation by indicating that it expects National Grid to develop charging arrangements to cover offshore coordination following the conclusion of Ofgem's Significant Code Review work under Project TransmiT. It is important to get early clarity on this issue. The charging regime must ensure that network coordination will not result in additional charges for developers, e.g. where AI results in additional redundancy (for example, if the other developer reduces its required TEC) or other anticipated projects are delayed or fail to proceed. SSE welcomes the high level principle set out by Ofgem in Table 2 (page 25) that network charging should be consistent with cost reflective charging principles, however it will be important to understand how this is to be achieved in practice.

Turning to (ii) user commitment, it is difficult to understand how this will assist in the Generator build option under CMP192 where the lead generator must take the investment risk on behalf of itself and the other generator(s). This anticipatory risk is referred to by Ofgem (para. 3.23). Ofgem goes on to discuss user commitment rules (apparently in the context of OFTO build) but does not set out how CMP192 assists in relation to the sharing of anticipatory risk. Appropriate incentives and

security will be needed for the lead generator- user commitment will provide protection only for NETSO. While commercial agreements will undoubtedly play a part, there is a need for such commercial arrangements to be backed by a clear regulatory safeguards to ensure that the lead generator is not required to carry disproportionate investment risk. Again, it is vital that this issue is bottomed out as soon as possible if integrated networks are to be workable in practice.

Transfer Process

It is currently unclear how AI for coordinated networks will be dealt with under the tender process. It is of key importance for developers proceeding under Generator Build that the OFTO assets are transferred to the OFTO smoothly and the cost of developing the OFTO assets is recovered. In Ofgem's recent consultation on the Enduring Regime, Ofgem noted that "*it may be necessary to amend the approach set out* [in relation to tender exercises] *in some instances given the different characteristics and issues associated with assets that are not just for the use of a sole generator*" (para. 2.25). We are disappointed that the unanswered questions in this area do not appear to have been addressed by Ofgem in the present consultation. It will be very important to understand how AI will be dealt with under the tender process.

We assume that an asset that is to serve two or more generators, will be purchased by a single OFTO. But what about the OFTO assets in the coordinated network that are not shared? There appears to be the potential for three separate tender processes: (1) the shared assets; (2) the lead generator's sole assets; and (3) the second generator's sole assets. There is an obvious need for coordination of the tender processes and there are complex interactions that will need to be managed. Currently there is no framework to support these interactions (which we assume will need to be dealt with, as between generators, through a suite of complex commercial agreements). We also assume that the shared assets built by the lead generator will be tendered by the lead generator. But how does the second generator guarantee the recovery of the costs of the shared assets if not through the tender process? Indeed, as highlighted above, it is currently unclear how the costs of constructing the shared assets will be dealt with in the first instance. There is a clear need for clarity on these issues going forward.

Transfer Value

Lying at the heart of the issues discussed above is the question regarding how Ofgem will set the transfer value of the assets. SSE Renewables welcomes the suggested approach of introducing interim assessment stages. The issue of uncertainty regarding cost recovery does not only affect AI projects- it is a concern for all offshore projects, regardless of whether they are being coordinated. SSE Renewables considers that it is important to ensure that improved certainty is achieved for all projects. To this end, we would expect this interim assessment approach to be adopted in all cases.

However there are clearly particular challenges in relation to coordinated networks. For example, we are unclear at present as to how the following scenario will work:

The lead generator builds a connection, which includes AI (i.e. is a shared asset). Ofgem considers that only 70% of the works carried out are economic and efficient. The lead generator sells the shared asset to the OFTO and recovers 70% of the costs through the OFTO. The remaining 30% of the costs are essentially sunk costs. How will the other generator's share of the sunk costs be recovered? Put simply- who pays when AI does not go to plan?

The consultation suggests a 2 stage assessment process to minimise the risk of sunk costs. The risk could be further minimised by the introduction of binding guidance by Ofgem on how the final assessment will be carried out. However, as the transfer value remains an ex-post process there will always be a risk that certain costs will be disallowed by Ofgem. Therefore it will be a commercial risk for the lead generator to build AI unless the transfer value is dealt with on an ex-ante basis. It has been decided that an ex-post process is required to ensure efficient built. Therefore, another method of providing appropriate incentivisation and protection is required in order to ensure that the lead generator is not unfairly disadvantaged. SSE's position is that the

costs of AI should not be borne by the developer. Therefore there is a need to consider how sunk costs related to AI should be treated and shared between users and the consumer.

The developer will require certainty regarding whether it will recover its costs in relation to the build as a whole, whether or not there are AI elements.. While we consider that the interim assessments are helpful we note that, under the current framework, these would not be binding upon Ofgem. Therefore the developer is still exposed to a great deal of risk. Under the transitional regime, the developer was guaranteed at least 75% of RAV. We would like to see a similar guarantee within the enduring regime. For example, after the first assessment, the developer is guaranteed 45% of its costs on the basis of Ofgem's assessment decision, rising to 75% following the second interim assessment.

A coordinated approach to coordination

The work done to date on offshore transmission has been somewhat fragmented. There is a need to take a joined up approach to the challenges posed in relation to coordination. Ofgem and DECC set out the next steps to tackling offshore coordination in their OTCP Conclusions Report. There are various workstreams ongoing to address the barriers identified. This work needs to be drawn together along with other work ongoing in relation to the enduring regulatory regime to achieve a holistic approach to offshore transmission. Wider work not directly related to offshore transmission is also relevant, e.g. project TransmiT. Furthermore, we have noted the launch of the ITPR project, which has obvious relevance to offshore transmission. It is presently unclear how the ITPR will feed into the present work.

I hope this response is helpful. If you would like to discuss our comments in more detail then please contact me.

Yours sincerely

Lesley Gray
Regulation

ANNEX 1
Response to Consultation Questions

#	Question	Our Response
Chapter 2: Planning an efficient, economic and coordinated network		
1	What are your views on whether: a) the connection process (including the relevant industry framework) supports the design of an efficient and coordinated network? b) the NETSO needs further powers to develop an efficient network? c) there are any barriers to the NETSO taking on an enhanced role in network development?	(a) The connection process is presently a reactive process, with network extensions and reinforcements being triggered by a generation application. We think that a more proactive approach may be required for a coordinated approach to work in practice. In particular the following challenges need to be overcome: • The present network planning tools do not detail a stepped increase in generation for example 2GW, 4GW or 6MW in a specific area, i.e. which would over-size connections and allow for future generation to be accomodated. They tend to be based on conservative future generation. This prevents/limits the over sizing of connection assets in practice; • TOs are currently focused on achieving the most economic and efficient option for the development of the transmission system. When coupled with the current regulatory and legislative regime, this does not always encourage coordination as the lack of clarity over the treatment of AI for the TO is exacerbated by the overlapping licensing arrangements for OFTO and TO. For example, although it may be economic and efficient for the TO to build offshore towards the developer, they are currently prohibited from doing so by existing OFTO legislation. It is clear that a single and consistent legislative and regulatory approach to transmission development across GB, offshore and onshore, is an even more critical first step than developing a framework for coordination. • Offshore generation is heavily reliant on the development of HVDC technology to enable the electrical energy to flow round the HVDC system in different directions like the current HVAC system; • It would be very difficult for a developer to finance an onshore connection which has a larger than necessary electrical capacity unless there is a firm commitment from other generators to share the costs and liability; • With more than one generator involved in the development of the offshore transmission system and onshore connection, legal agreements would have to be drawn up to secure / indemnify the works, requiring time and negotiation;

		• The planning regime is formal and rigid in its approach. We expect that the achievement both coordination and cost efficiency would require a flexible approach to planning, which the current system cannot accommodate. In some cases brand new planning applications would have to be made, adding 12 – 18 months to any programme. • The present TUNoS OFTO assets calculation penalises the over sizing of assets; and • The technical challenges and risks associated with two different projects being connected offshore and which codes/compliances are to be adhered too. • The technical risk associated with "over-sizing" the OFTO assets are especially relevant given the uncertainties related to future generation technical requirements, particularly in relation to size (MW), machine type, timing of connection and commissioning requirements. The later two comments will only be realised during the detailed design phase, but require recognition at the initial connection stage to draw up boundaries and responsibilities. (b) There is already an obligation on TOs to take a coordinated approach to network development and this coordinated approach is both set out in the Electricity Act and detailed in the STC. The Joint Planning Committee (JPC) provides a useful vehicle for network coordination. The JPC arrangements could be extended to include a generator/developer representation which would ensure that all voices are heard and taken account of. However, neither a framework designed to encourage coordination nor the granting of additional powers to the NETSO has the ability to deliver an outcome which current legislation and regulation precludes. (c) GB requires a single transmission licensing regime for onshore, offshore and interconnector development to ensure that coordination can be facilitated.
2	Do you agree with the proposed objectives for a reformed network planning document? Would other changes be useful?	We agree with the proposal to combine the ODIS and the SYS. It would also be of assistance to offshore development if this consolidated document also took into account interconnector development. Presently, the information provided does not go into depth on future interconnectors. It would be of benefit to offshore developers including details of potential projects, their progress, timescales and their key milestones.
Chapter 3: Anticipatory Investment		
3	Do you agree with our initial proposal for a definition of AI and that the types of AI set out are those that need to be captured in an approach o AI?	We agree with the initial AI definition and the two AI categories detailed. However, a flexible approach is needed to the treatment of AI to take into account individual circumstances and evolving requirements.

4	Do you agree with our initial proposed objectives and regulatory design principles for an approach to AI? Are there some which you see as more important than others?	We agree that the proposed principles are appropriate. We consider that the key principles must relate to the incentivisation of development. The deployment of offshore wind has been promoted by the government as necessary to support the achievement of the UK's renewable targets. However, this objective will only be achieved if development is attractive to investors. For this reason, it is vital that there is certainty and appropriate incentivisation to support projects. The government's objectives as regards offshore wind will not be achievable without these principles at the core of the regulatory framework going forward. It would be helpful to understand how Ofgem will apply these principles in practice. We suggest that Ofgem produce guidance on the assessment process and the role that the principles will play in Ofgem's decision making.
5	What are your views on use of the connection application process as the platform for identifying AI opportunities? Could there be a need for AI to be identified outside of the formal connection offer process?	The JPC may be an appropriate place to develop an over arching view of the potential design opportunities, with the detail recorded in the ODIS or Seven Year Statement or the appropriate document (for instance show future plans for a 2GW, 4GW or 6GW or a more suitable incremental capacity in a specific area). The connection application is not necessarily the correct location for the triggering of an AI if you happen to be the first generator in the area. This is where a future development plan of the specific offshore area would be helpful, allowing the first generator flexibility in the initial sizing of connection assets with a timeframe, prior to detailing the actual assets to be procured and built. Alternatively the 90-day period allotted to return a connection offer might not allow the design, options and the co-ordination of TOs to be progressed to a suitable level. It would be more prudent to release an offer indicating the need for an AI to be discussed with a time frame upon signature that would facilitate the necessary design discussions and investigations.
6	Do you envisage that changes to industry codes and licences are necessary to enable the connection offer process to identify AI?	A thorough review of the industry codes and licences will be required going forward.
7	Are there barriers to cooperation in connection offers being agreed where a development involves more than one generator? What actions do you consider are warranted to address these?	As discussed in our general comments above, for Generator Build, we consider that there is significant risk for the "lead generator" in respect of connections to shore which are associated with more than one generator. It will be important to identify ways in which this risk can be shared and mitigated. We can see three ways to approach this: • Early OFTO - placing the build of the connection assets with a third Party; • The onshore TO building out to the Offshore Terminal

		Platform (OSP), taking on the risk and limiting the number of additional Parties; and • The lead generator seeking indemnity from the other generator to secure the build. From SSE Renewables perspective, Option 3 is the only option that allows us to maintain control over all associated build risks and timings. However, we could see that it would also be worth exploring Option 2 as a possible workable alternative.
8	Are there other parties that should be able to identify opportunities for AI?	A key element will be determining the onshore transmission connection point. The three present onshore TOs are the best positioned parties to assess the potential AI opportunities and the JPC could be a useful tool here. There are other organisations out there that have good intentions and have secured funding to explore interconnectors, the ideas have potential but they are very much in the development stage and need a Party capable of building the infrastructure to take on the challenge. There needs to be more co-ordination between these organisations and the TOs to ensure the best solutions are being put forward.
9	What changes may be needed to ensure that assets that provide wider network benefits are designed, constructed and operated to provide a longer asset lifetime?	There are two elements of the offshore network which are integral and it is possible it may not survive full forty years, they are: • The jacket to the offshore substation platform; and • The subsea cable. The oil and gas industry procure jackets with a design life of thirty years and with rigorous inspections they are pushing the existing jackets life beyond thirty years. There are several potential ways of increasing the life expectancy of a jacket, but it will not be without increase in initial cost. The anticipated life of the jacket needs to be clearly stated during the procurement phase, it might also be prudent at this stage to ask for the associated additional costs in extending the jackets asset life beyond twenty years. It would be this cost that needs to be managed and payment recovered at the right stage. There is evidence that subsea cables last well beyond twenty years. Normally onshore cables are designed with a minimum of forty years asset life. It would be at the time of procurement that an asset life of forty years should be requested. All other 'dry' assets (not exposed to the sea) may require additional engineering to withstand forty years of operation, the two exceptions to this will be the smaller reactive components (which have a life of seven years) and protection equipment (with a life of fifteen years).
10	What are your views on whether a longer revenue stream for assets that have wider network benefits could create better value for	We agree that a longer revenue stream will provide better value for consumers. There would be lower costs associated with the offshore transmission assets, which would be the outcome of paying the costs over forty years as opposed to twenty. Furthermore this would align OFTO asset lives with

	consumers?	those onshore, further facilitating a single transmission regime. It does not seem appropriate that OFTO assets are charged on a twenty year basis when onshore assets are charged at forty years (or more).
11	What are your views on the best way to deal with possible interaction between assets with differing lengths of tender revenue streams?	It should be possible to make the asset lives identical, with enhanced maintenance packages. At the tender stage the costs associated with extending the asset life to 40 years needs to be investigated and the associated failure risk profile. Based on this information, a worst case scenario should also be evaluated; costed; and then the necessary precisions need to be put in place. If the assets were defined with a shorter life span then it will be necessary to cater for their replacement.
12	Do you agree with these high-level user commitment and charging principles for AI?	We welcome the commitment to ensure that generators are responsible for the AI that they stand to benefit from (we take from this that generators should not fund AI that are not directly related to connecting their development). However, there is currently not enough detail in Ofgem's proposals to understand how these high level principles will be applied in practice.
13	What areas of the transmission charging regime may need to change to facilitate AI in the offshore transmission network? need to be considered?	The NGET paper mentioned in paragraph 3.28 indicates that there are three areas of the transmission charging regime that require further work: • Revenue Recovery – 20 year asset life • Transmission Technology – treatment of DC equipment; and • SQSS Compliance – doubling the asset carrying capacity. The first issue associated with revenue recovery is recognised in the earlier stages of this document presently under review. The second and third issues have not been addressed in this document. A fair method of treating DC through charging regime is essential and may become even more complex if the offshore network connects to shore via interconnectors. The SQSS Compliance and the associated charging for the security is another topic not yet addressed, but needs to be explored. In addition AI could introduce the need for NETSO to purchase an increased level of generation reserve to balance the system in the event of a fault. As the number of AIs increase on the system with single connections to shore, NETSO will be forced to take protective measures and some how recuperate the costs. This requires additional consideration in parallel with SQSS compliance as there could be compromises which increase the offshore transmission network security and reduce the size of the installed assets mindful of the intermittent nature of the energy source.
14	Is there a need for greater, earlier clarity on how	Yes, there is a need for Ofgem to identify at a very early stage the minimum proportion of costs that will be recoverable. This

	including AI within the scope of works might be treated under our assessment of costs?	needs to be done at the very early stages if an AI solution is on the table, as it significantly influences the generators decision to commit to the project. As previously indicated, it would be helpful if Ofgem were to issue some guidance on the approach that they will take to assessment, including how they will apply the high level principles in practice.
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?	The Ofgem assessment stages appear to be in the correct positions: Assessment 1 will occur very early when the initial solutions for offshore connection are on the table, then again Assessment 2 towards the end of the consent phase at which stage the design will have been refined and further details will be known. However, an overly rigid approach to assessment will not work in practice. It will be important to leave open the opportunity for further interim assessments in order to achieve the level of certainty required. Formal guidance would also assist here.
16	Do you agree with the proposed high-level criteria for use by Ofgem if considering whether AI would be economic and efficient?	We have no objection to the proposals, however further detail will be required to assess this issue further. This should also be aligned with the assessment of onshore transmission as it would not be appropriate to have different assessment regimes across the transmission network.
17	What are your views on the appropriate timing of the possible Ofgem assessment stages?	We consider that this is acceptable, however we think that there is a need for flexibility to be built into the process to ensure that the assessment process can be tailored for the circumstances of individual projects.
18	What information should in your view be provided as part of any published guidance that supports AI approval?	As a minimum, the guidance should set out how Ofgem will apply its definition of AI and high level principles on AI in practice. The guidance should also indicate how the findings of the interim assessments will be treated during the final assessment. The guidance should include clear worked examples covering possible scenarios. For example, where too much redundancy has been designed into the connection for AI reasons (e.g. too much because the other generator has reduced its capacity or is cancelled).
19	Should there be additional requirements to share information with Ofgem to help streamline Ofgem ′ s assessment of AI for project? What information should be included?	Ofgem should be able to require information from the other generators that stand to benefit from the AI. This would include information on the scope of their project and timelines. Ofgem should also be able to look for details on how the Parties will work together and indemnify the works. It could be useful for the lead generator if the other generator could identify the points in their programme which shape or define the AI. It would also be helpful to summarise the risks faced by the generators if one party were to, as well as details of possible mitigation measures.

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?	Option 2 presently is an attractive solution due to the TOs being in a better position to manage the uncertainty and risk associated with an AI. However, clearly the existing legislative and regulatory framework prohibits this at present. Option 1 may be preferable if adequate security and inventivisation could be achieved. This is because the generator has an interest to maintain and optimise the design and build process whilst keeping it on track with regards delivery. However, at present the level of uncertainty regarding how Option 1 would work in practice in relation to coordinated networks makes this option less attractive.
21	Could OFTOs potentially have a role in undertaking pre-construction works for assets significantly driven by wider network benefits? How might this work?	Yes, an OFTO could have a role - but this would be the 'early OFTO' option, which we understand is not currently Ofgem's preferred approach. However this option brings back the risk to the generator of two independent parties involved with building essential assets to connect their project to shore. There would be a need for synchronisation and to ensure that OFTOs ar adequately incentivised to ensure timely delivery. There would also be concerns over OFTO tender timing that would need to be resolved.
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?	The attractiveness and feasibility is the same insofar as the generator relies on the assets for its connection onshore. Generators are unlikely to be willing to take the investment risk for AI driven by wider network benefits whereas a third party (i.e. OFTO or TO) will be better placed to take on this responsibility.
23	Are there changes that can be made to improve the incentives on offshore generators in undertaking pre-construction and construction works for assets that are driven by wider network benefits?	A guarantee of payment associated with the activities in undertaking pre-construction and construction as well as a defined method of indemnity if undertaking works on another parties behalf would help incentivise on offshore generator to undertake the works.
24	What would be the impact on the attractiveness of Generator 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?	As a generator we are striving to approach the procurement of services via forming 'alliances' with manufactures and design/consultancy houses. Maintaining the ability to opt to 'Generator build' including assets with wider network benefit, will enable us to offer attractive challenging projects of sizable volumes, which will bring about economies during the design and into the installation phases. It has been a long process to enable the generator the right to build the connection assets to shore. Going forward, as long as the commercial and legal protections can be put in place, to it should remain an option. The OFTO build options should be considered alongside as an alternative approach, but not viewed as the only solution.

25	What are your views on how any distinction between generator focused" and "wider network benefit" assets should be made?	It would seem logical that the 'offshore generator focus' work is associated only with the offshore generators and the 'wider network benefit' is associated with works that future proof the system and benefit many more parties. There may be some merit in aligning these definitions to those of the onshore network e.g. the distinction between local works and wider works. This may also be a good opportunity to identify what portion of offshore works would form part of the MITS, given that increased coordination can lead to wider system benefits. It would not be appropriate to pursue definitions and arrangements which introduce inconsistency between onshore and offshore arrangements.
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?	The commercial contract will be the enabler for the lead Generator to undertake the role to pre-construct the AI assets. It should provide certainty and security. Therefore we consider that commercial arrangements will play a key role. However it would be preferable for this to be backed with a clear regulatory framework that is designed to support AI and recognise the risks that will be placed on the lead generator.
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?	If an AI solution is built and oversized for future generation then the assets will be physically installed. The issue of how to recover the costs of the oversized assets in the interim period before future generation is connection needs to be explored. In particular, how will TNUoS charges be dealt with? What must be avoided is a situation where the lead generator bears the whole costs of the oversized assets prior to further generation being commissioned within the coordinated network. Clearly, from the OFTOs perspective, they will want to secure a return on their investment without delay. Further work needs to be done in order to identify a workable solution to this problem.
28	Will commercial arrangements and industry codes and licences provide sufficient access rights for shared assets? If not what changes may be needed to support the process?	If boundary or interface is clearly defined and agreed at the design stage, then this documentation should follow with ease. At the design stage, every effort will be made to line the boundaries and interfaces up with industrial codes and licences and these should align with onshore definitions. Access rights fall more to the operation and maintenance regime of the asset owner (specifically in relation to the OSP) and as to whether or not it is deemed acceptable for the Party which has assets located within the owner's facility to have access.
29	Are there any other issues with shared assets that that need to be considered?	The one truly shared asset is likely to be the fibre optic communication cables, as the different Parties will require a number of individual fibres within the cable. Further investigation is required into: (i) the industry requirements associated with communication signals; and (ii) the generators and TOs requirements to ensure options exist and a solution is viable.