

Statkraft – Consultation response

Offshore transmission - Consultation on potential measures to support efficient network coordination

26 April 2012

Introduction

Statkraft appreciates the opportunity to answer to this important consultation. The economic and administrative framework for development of the offshore grid is vital for successful deployment of offshore wind power projects, in particular for round 3.

Grid coordination stands out as challenging for a number of reasons. The development of an efficient network is intrinsically linked to the successful delivery of individual offshore wind farm projects. The framework conditions for offshore wind does not assure projects will be delivered in a timely, predictable order. We are hence not convinced that the approach suggested by Ofgem here would be sufficient to achieve an optimal grid structure.

The relationship between OWF and the coordinated offshore network, as it is currently proposed, is such that the successful delivery of an efficient network is dependent on the successful delivery of OWF projects in accordance with a design, timeframe and order pre-determined by OFGEM prior to the commencement of pre-construction works. The Round 3 plan provides for the potential development of 25GW of offshore wind energy in addition to the 8GW identified in subsequent Rounds. Currently energy targets anticipate the delivery of up to 18GW of offshore wind by 2020 with an ongoing pipeline of OWF projects being delivered after this date. There is uncertainty around the volume of projects to be realized and when. It is also not clear how and in what order the individual projects that make up the Round 3 plan will be delivered. This will depend on many factors, as consenting issues and the CfD scheme, as well as cost level of individual projects and access to capital.

We do not agree that revision of the guidance on the consenting of associated developments to enable these types of assets to be considered is sufficient in itself to provide a means to consent efficient network proposals.

Consideration of how best to mitigate uncertainty factors for the successful delivery of the Round 3 continues to be a priority issue for industry and a number of industry/government/ stakeholder forums have been established with a view to proposing and implementing solutions. The consents related challenge is perhaps the most applicable to individual project delivery and this in itself is a risk to the delivery of an economic and efficient network which we propose has been underestimated in the development of the framework that is currently proposed.

It is a significant risk that some projects will at best be delayed (and at worst be unsuccessful in their consents application) whilst the different issues are resolved.

We believe there is a need to revisit the relationship between individual OWF projects and the coordinated network such that the development of the coordinated network is more independent of individual project delivery.

This would provide for an enhanced ability to design a system around the need to provide wider network benefits that may be realised through a range of delivery scenarios – reducing the risk of delay to the realisation of benefits because of the risks associated with the delivery of any one projects and reducing the risk of construction of stranded assets.

This could be achieved through –

- Classification of offshore transmission development projects as Nationally Significant Infrastructure Projects (NSIPs) in their own right – providing a route to consent these separately
- Extension of the role of the NETSO to include responsibility for consenting the offshore coordinated network proposals – thus ensuring that the organisation responsible for securing a means to deliver the network is motivated to do so from the perspective of ensuring wider network benefits rather than securing a means to connect an individual project

Answers to consultation questions:

CHAPTER: Two

Question 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 connection application from a generator has to be set in the context of wider network processes to determine the economic, efficient and co-ordinated connection solution, such as the ODIS and the Round 3 zone development processes.

In the connection application process, the generator developer stipulates the projects and capacities which are required to connect, along with a number of other requirements such a connection date and project location. National Grid is therefore and rightly focussed on providing a viable, economic, efficient and commercially acceptable connection offer for the named projects within a very tight offer preparation window (90 days).

Therefore, although there is the possibility for the application process to deliver co-ordinated solutions, such solutions will probably have to have been discussed with zonal developers prior to the formal application process for them to be viable as part of the offer.

This therefore specifically represents a challenge when co-ordination solutions require the agreement of multiple different offshore generators, who are unlikely to be prepared to engage on novel solutions in what is still essentially a competitive process.

However it is very important to emphasise that the existing connection process has delivered grid connection solutions for large, far offshore projects which demonstrate efficient and co-ordinated solutions. As an example, the connection solution for the first six Dogger Bank projects includes the provision for inter-project links offshore, leading to increased project transmission availability and moving onshore wider network reinforcements offshore (notably reducing need for further reinforcement across the B7 boundary, the notorious 1st and 2nd Yorkshire Lines).

The NETSO does not need further powers within the offer preparation process. The ability for co-ordinated solutions to be put forward and accepted as part of the offer process is around the commercial implications for charging, user commitment and increased risk for project certainty which such solutions represent, and therefore their acceptability to generators. Generators must always have the right to accept or reject the final offer as they see fit, and it is up to the NETSO to work towards an offer which is economic, co-ordinated but also commercially acceptable to the generator.

Focus to increase the likelihood of co-ordinated solutions coming out of the offer process should be on addressing the commercial risks which these solutions present to the generator, and managing these risks appropriately.

In addition, should the offer from the NETSO be a co-ordinated solution which would require Anticipatory Investment to take forward, some modification to the offer process would be appropriate whereby Ofgem are actively engaged in the acceptance process and can give comfort that the AI which the offer relies on will be forthcoming. Without this, the generator is unlikely to accept the offer.

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

We support the underlying principle of improving the network planning process and any moves to evolve existing arrangements are welcomed. Any changes to the connection process should be progressed through normal industry governance processes to enable due participation and process. As part of this, developers should retain the ability to negotiate terms of individual agreements and not have arrangements imposed on them which could affect the commercial viability of projects.

We support the principle of reforming the SYS and ODIS. Both of these documents have served a useful purpose, but it is the right time for them to be reviewed and we agree they should be combined into a single network planning statement. Continued separation reinforces a misleading view of the delineation between onshore and offshore transmission, which is not reflective of how the transmission system is expected to develop as the industry moves forward.

However, within the reformed documentation, it will be important to clearly delineate level of certainty of transmission solutions. The offshore transmission connection solutions presented in the ODIS are

concepts based on a range of generation scenarios going forward. They do not have the same level of maturity or certainty as those onshore reinforcements being taken forward and identified in the SYS. As such, there should be a clear delineation between contracted capacity and the network scenarios in order to ensure the information presented is clearly understood within the appropriate context.

Due consideration should be taken to the need and potential for developing new interconnectors to neighbouring countries in the North Sea Region. In this respect, The North Seas Countries Offshore Grid Initiative is looking into possible future grid configurations. One of the deliverables of the initiative for 2012 is an assessment of costs and benefits of plausible offshore grid configurations to which individual energy production facilities may be directly connected, and which allow for electricity markets integration.

CHAPTER: Three

Question 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 to AI?

Yes, but list should not be closed in case other options materialised

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

The most important are:

- Incentives for timely work
- Clarity on charging and user commitment principles
- Flexibility to account for project specific variables
- Certainly on definition of efficient costs and their recovery.

Question 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?

A mechanism is required to take forward AI proposals outside of the connection process. As an example, co-ordination of offshore wind with cross-boundary interconnectors could well not require a connection application at all, but could require AI to ensure the full benefit is realised.

Question 6: Do you envisage that changes to industry codes and licences are necessary to enable the connection offer process to identify AI?

The three month period for NGET to make an offer may be too short to identify and specify AI in the offer; however NGET can already apply for an extension to this period. The 3 month period for the offer to be accepted is often too short for generators, to assess and accept an offer with AI.

The process whereby the NETSO makes a coordinated offer which will need AI to complete it, but that AI is not approved by Ofgem needs to be taken into account.

Question 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?

It will be unacceptable for the grid connection of one generator to be dependent on the connection of another generator, unless both parties actively agree. Any other mechanism will result in connection offers being declined.

Question 8: Are there other parties that should be able to identify opportunities for AI?

Given that a mechanism is needed outside of the connection process, there seems no reason to limit who should be allowed to apply.

Question 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?

No comment

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

No comment

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

No comment

Question 12: Do you agree with these high-level user commitment and charging principles for AI?

Question 13: What areas of the transmission charging regime may need to change to facilitate AI in the offshore transmission network?

Question 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?

The answers to these questions have been broken down by type of co-ordinated initiative:

- Type A - Inter-project HVAC links within zone

- Type B - Multi-project HVDC links to a zone (over-sizing links)
- Type C - Inter-zone HVDC links as wider reinforcement
- Type D - Inter-zone HVDC links as wind-farm connection point

Type A - Inter-project HVAC links within zone

AI driver:

Both offshore generator driven (increased network availability, reduced risk of transmission downtime)
AND wider network purposes driven (links move onshore reinforcements offshore)

AI Requirement:

- Development costs of inter-project links (consenting, high level design optimisation, offshore surveys, front-end engineering design implications for each project)
- Incremental capital expenditure on each project (future-proofing platforms, co-ordinating design standards, etc)
- No AI needed for capital expenditure of building the link itself because both offshore wind projects will have reached investment decision at the point when the link is taken forward

Responsibility for AI:

- It is not clear whether this should be classified as offshore generator driven or wider network reinforcement. It will very likely be driven by both.
- Incremental capital expenditure on each project is clearly AI that must be undertaken by the offshore generators
- Development costs of inter-project links could be taken forward by the developers as part of their project development (and they will be best placed in terms of experience of the area) or taken forward under an “early OFTO build” model
- No AI needed for capital expenditure, but in terms of delivery, again this could be taken forward either by the offshore generator of the second project to reach an investment decision, or under “late OFTO build”, or as a continuation of the “early OFTO build” model.
- Separating this work from the offshore developer could make sense in that it would make delivery of the link more robust to changes in order of the offshore wind projects coming forward

Requirement for funding:

- It is difficult to envisage that the proposal on funding would be appropriate for the incremental capital expenditure on the projects, over and above comfort from Ofgem that costs will be recovered in asset transfer value (a charging issue in reality)

- It may not be appropriate for the development costs for the inter-project links to be subject to the proposed Ofgem AI funding process if taken forward by the developer
- Should early OFTO build be selected for the delivery model, an Ofgem AI funding process would not necessarily be required, because the remuneration and funding of the OFTO for development costs could be handled under the arrangements for OFTO revenue stream for an early OFTO build model.

Charging:

- Clarity is required on charging for the incremental capital expenditure taken by each project to future proof for such links, and how this can be quantified as a small part of a much larger cost.
- Clarity is required on charging for the inter-project links and how the fact that they are driven by both offshore generator benefits and wider system benefits will be treated and quantified
- Clarity is required on how charging for the project links back to shore which have facilitated the wider system benefits through inter-project links will be affected

User commitment:

- Changes to User Commitment under CMP192 have not fully covered the implications of offshore co-ordination
- Under CMP192 it is expected that the reinforcements for wider system benefits should not be “attributable works”
- Clarity is required on user commitment for the incremental capital expenditure taken by each project to future proof for such links, and how this can be quantified as a small part of a much larger cost.
- User commitment for the development costs needs to be thought through in the context of the fact that they are driven by both offshore generator benefits and wider system benefits (and dependent on which party takes these forward)

Type B - Multi-project HVDC links to a zone (over-sizing links)

AI driver:

- Defined clearly in consultation as “offshore generator driven”, however from an offshore generator perspective it is currently hard to justify the benefits of these links. Major benefit seems to be to the wider consumer through accessing the majority of the predicted £3.5billion cost savings.
- Technology not yet mature for 2GW links - technology risk for offshore generator
- “Single point of failure” risk for projects unless significant other inter-project links in place for alternative routes to market. Particularly not well suited to early projects within a zone

- NGET/industry concerns about 2GW offshore cable and converter station failure rates and the impact on the “infrequent infeed” occurrence limit of 1320 – 1800MW up to 4 times per year
- Development of early Round 3 projects already well under-way and design “Rochdale envelope” for early projects will be fixed. Inclusion of 2GW links may cause material delays and requirement for re-consenting.

AI Requirement:

- Increased development costs of multi-project links should be minimal (consenting, high level design optimisation, offshore surveys, front-end engineering design implications) but time impacts may be significant
- Huge capital expenditure AI on first project (hundreds of millions of pounds)

Responsibility for AI:

- Development costs of multi-project links should be taken forward by the developers as part of their project development (and they will be best placed in terms of experience of the area)
- Capital expenditure AI would be taken forward by the party tasked with delivering the transmission assets for the first project reaching an investment decision (an OFTO under OFTO build, the generator under Generator Build).

Requirement for an Ofgem AI funding process:

- It is very unlikely that a multi-project offshore transmission link could be brought forward without an appropriately designed Ofgem AI funding process for the capital expenditure at least

Charging:

- It seems clear in the consultation that, based on Ofgem’s belief that these are generator driven AI, projects would be expected to fund the oversized link proportional to capacity
- Once the first project reaches an investment decision, under generator build the capital costs in construction are borne by the first project and potentially part-secured by the second project. Under OFTO build, the capital costs in construction would be secured by the two projects.
- This infers that half of eventual OFTO revenue stream for the oversized asset would be covered by first project TNUoS, with the other half covered by User Commitment of second project (then TNUoS if/when the project goes ahead)

User commitment:

- It seems clear in the consultation that, based on Ofgem’s belief that these are generator driven AI, it would be expected that User Commitment of projects would cover the full funding of the asset

- If under generator build, the second project would have to post commitment for the anticipatory cost
- No consumer exposure envisaged

The above reflects the view of the consultation document based on the definition that such an oversized link is “generator driven”. Notwithstanding the point that such links may not actually be desirable to generators, under such a definition, and with the proposed charging and security principles, it is very difficult to envisage that such a link can be taken forward, due to the unacceptable levels of commitment placed on projects prior to reaching an investment decision. A share of hundreds of millions of pounds of AI cost on a project yet to reach an investment decision will not be accepted by generators (whether or not it is conceptually justified), and grid connection offers based on such principles will not be accepted in the first place.

Type C - Inter-zone HVDC links as wider reinforcement

AI driver:

- By definition this is for wider network purposes
- Generation connection behind a certain boundary causes a boundary constraint. This is addressed through HVDC link(s) between offshore Zones
- This would not be the route to market for offshore windfarm projects but would potentially give an increase in transmission availability for projects
- Cost versus equivalent onshore reinforcement is clearly a factor in determining whether this is economic and efficient, and should be driven by the NETSO.
- Potential requirement for both zones’ projects to future proof to allow connection of such a wider reinforcement (HVAC connection bays)

AI Requirement

- Development costs of inter-zone links (consenting, high level design optimisation, offshore surveys, front-end engineering design implications for each project)
- Incremental capital expenditure on each project (future-proofing platforms, co-ordinating design standards, etc)
- No AI needed for capital expenditure of building the inter-zone link itself because both offshore wind projects (one in each zone) will have reached investment decision at the point when the link is taken forward

Responsibility for AI:

- Clearly a wider system reinforcement
- Likely to be limited appetite from generators to take such assets forward given they are not required to facilitate project connection and they are not in the business of developing offshore transmission infrastructure for its own sake.
- Obvious place here for “early OFTO build” to take forward such assets

Requirement for funding:

- It is difficult to envisage that the Ofgem AI funding process would be appropriate for the incremental capital expenditure on the projects, over and above comfort from Ofgem that costs will be recovered in asset transfer value (a charging issue in reality)
- Should early OFTO build be selected for the delivery model, an Ofgem AI funding process would not necessarily be required, because the remuneration and funding of the OFTO for development costs could be handled under the arrangements for OFTO revenue stream for an early OFTO build model.

Charging:

- Clarity is required on charging for the incremental capital expenditure taken by each project to future proof for such links, and how this can be quantified.
- Clarity is required on charging for the inter-zone links and how wider system benefits will be charged and spread across users who benefit in wider TNUoS charges
- Expected that OFTO revenue stream would be met by this “wider TNUoS charge”

User commitment:

- This should not be classified as “attributable works” under CMP192, since it is for wider system benefit and it is the NETSO who determines that an offshore reinforcement is economic and efficient
- Cost of links should be socialised with all on/offshore generators and demand picking up their share

Type D - Inter-zone HVDC links as wind-farm connection point

AI driver:

Potentially both offshore generator driven (route to market for project) AND for wider network purposes (links move onshore reinforcements offshore)

- Offshore windfarm project TEC is provided via link to project in another zone then oversized link from that project to onshore interface point
- May prevent need for onshore reinforcement by taking generation further “downstream” of boundary constraints

AI Requirement:

- Development costs of inter-zone links (consenting, high level design optimisation, offshore surveys, front-end engineering design implications for each project)
- Incremental capital expenditure on each project (future-proofing platforms, co-ordinating design standards, etc)

Then, depending on order of projects coming forward, either:

- Huge AI requirement for capital expenditure to oversize link from shore to “downstream” project at the point of investment decision, but no AI needed for capital expenditure of building the inter-zone link itself because both offshore wind projects (one in each zone) will have reached investment decision at the point when the link is taken forward

Or:

- Huge AI requirement for capital expenditure to build link from “upstream” project to “downstream” zone then build oversized link from shore to “downstream” zone at the point of investment decision for the “upstream” project. “Downstream” project can then connect in the future to oversized link.

Responsibility for AI:

- Consultation is not clear whether the CUSC can support/allow such a solution
- Not clear whether this would be classified as generator driven co-ordination, if it has two drivers (generator and wider system). Not clear who would be “lead offshore generator” in such a model if generator driven.

Requirement for funding:

- It is very unlikely that a such a connection solution could be brought forward without an appropriately designed Ofgem AI funding process for the capital expenditure at least

Charging:

- Based on an assumption that this is classified as generator driven:
- “Upstream” project would be expected to fund share of “downstream” project’s link to shore plus full cost of inter-zone link
- “Downstream” project would be expected to fund share of its link to shore
- If under generator self build, “upstream” project if first mover would be expected to build link all the way back to shore

User commitment:

- Should “downstream” project go first, “upstream” project would pick up share of security for oversized “downstream” project link to shore plus security/construction responsibility for inter-zone link
- Should “upstream” project go first, “downstream” project would pick up share of security for its oversized link to shore

The above reflects the view of the consultation document based on the definition that such a solution is “generator driven”. Notwithstanding the point that such solutions may not actually be desirable to generators, under such a definition, and with the proposed charging and security principles, it is very difficult to envisage that such a solution can be taken forward, due to the unacceptable levels of commitment placed on projects prior to reaching an investment decision. A share of hundreds of millions of pounds of AI cost on a project yet to reach an investment decision will not be accepted by generators (whether or not it is conceptually justified), and grid connection offers based on such principles will not be accepted in the first place.

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

There is already great uncertainty in Ofgem’s assessment of efficient expenditure and costs under generator build and the current OFTO regime. Industry has sought greater certainty in this area. Moving to AI will greatly increase that uncertainty and Ofgem needs to provide greater clarity.

Question 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?

It should be the choice of the generator whether or not an AI process is required, given the inherent risk of delays to projects if the funding benefit does not warrant it.

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

(See introduction.)

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

The timing seems generally appropriate, and significant thought should be put into a mechanism to include the first assessment as part of the generation connection offer assessment period, to allow a generator to have confidence in the AI funding in order to accept the offer.

For offers that have already been accepted and are in development, retrospective application of a co-ordinated solution should only be proposed in exceptional circumstances where the need case is undisputable.

Question 18: What information should in your view be provided as part of any published guidance that supports AI approval?

The information may need to evolve over time and with experience as more AI projects are conceived and brought forward.

Given we believe that the first assessment should be an integrated part of the offer preparation process (if triggered by the connection process) then the level of accuracy and certainty in the evidence must be appropriate to the level of work which can be put in place during the offer timescales. Ofgem will have to make a judgement based on the level of work possible in the offer preparation process, much as a generator must do.

Question 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?

No comment.

Question 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?

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

Question 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?

Question 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?

Question 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?

Conceptually, an early OFTO build option for wider system benefits may be the correct solution. These assets are offshore transmission assets for wider system benefit, and not directly driven by an offshore windfarm generator. Windfarm generators are not in this business to design and build offshore transmission assets for their own sake, only as a means to an end to ensure a route to market for their generation assets.

In addition, it is well understood that there is a shortage of financing available to fund the large volumes of offshore wind generation which the UK government requires.

Based on the above, it does not make sense to task offshore generators with the design and build of offshore transmission assets which they do not want to retain control of to ensure their route to market is protected.

A large volume of work has been put into developing the Offshore Transmission Regime to deliver offshore transmission infrastructure. The early OFTO build model is still within scope and should be further actively developed to address this.

Question 25: What are your views on how any distinction between “offshore generator focused” and “wider network benefit” assets should be made?

This is one of the most important questions raised within the consultation, particularly if there is an intention from Ofgem to have significantly different charging and user commitment rules.

This definition is unhelpful and such a clear line cannot be drawn. The definition of assets may change over time as well. There are a number of reinforcements which would have both wider system benefit and benefit to the generator. This is right and proper and adds weight to the argument that the co-ordination solution may be appropriate.

Should such a definition be required, assuming the charging and user commitment rules can be established which suitably share the benefits and risks of the co-ordination and anticipatory investment, then any distinction should be driven not by the exact type of the co-ordination, but driven by who has deemed the co-ordination measure to be the best solution. If this is driven by the NETSO as part of wider system design, then it should be deemed to be for wider network benefit. If the co-ordination is driven by the generator, then it could be determined as offshore generator focussed.

As an example, the Ofgem consultation makes it clear that it would see a multi-project (oversized) HVDC link as being offshore generator driven. There may however be situations where this is proposed but in fact the generator has no desire to connect its projects by such a solution (perhaps due to uncertainty over project timings or not finding the charging/user commitment regime to be an incentive but a barrier to taking such anticipatory investment forward). The drive for such a link will actually come from the NETSO because it would form an important strand of an offshore reinforcement, so the driver is really for wider system benefit.

Question 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?

No comment.

Question 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?

No comment.

Question 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?

No comment.

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

No comment.