

Response 19 – OWLC

Context:

We understand the key issues faced in managing grid connections are:

- the volume of connection requests (slide 4)
- wasted effort (slide 5)
- disconnect between requested connection dates and those offered (slide 6)

We note the 5 key themes detailed on slide 7, and that the two key/common priorities from customer sessions were:

- connecting quickly, and
- ability to change a connection offer

We would note that, while we applaud your extensive efforts to consult with the industry, those consultations have only been with existing users/known potential connection applicants and not (for example in our case) prospective future applicants; and as such, consultation response selection bias should be considered through the connection reform process.

Summary of response:

We would agree with the priorities, recognise the challenges, and welcome the themes. At the same time, we believe that the conclusions of the work so far, and the four options detailed, do not address the issues identified. We note that the process may not have fully explored the variations (and variations on those variations) and may have discounted potentially optimal solutions in defining the four options as opposed to alternative, commercially led, approaches to progressing connections quickly, minimising cost, wasted effort, etc. At the same time, the options identified seem to severely punish "under-performing" projects for no valid reason.

By that we mean: the ability to forecast whether a project will progress is not defined by meeting prior milestones, and as such relying on those for managing the wider grid connection issue is potentially not valid. At the same time, it strikes us that the problem with connecting a generating station to a system that has not been upgraded to take its power is that it will result in constraints - which has a cost. We would note that the system already has a mechanism for socialising cost (for example losses are socialised - notably with the result that some offshore wind developers have installed lower capital cost aluminium export cables, because the cost of the higher losses are socialised, rather than optimising the economic case; though this is also linked to their risk of capital cost recovery under the OFTO procedures.)

Further, we would note that the consultation questions, it seems mainly because they are based on the TMO options and required TMAs because of those, don't resolve the problems identified, increase complexity, and introduce barriers to entry to the market.

As such, our feedback can be summarised as: Please explore an extension of Variation 5 such that

1. non-firm connection offers are provided to all projects,
2. project progress is monitored,
3. network upgrades/construction is planned on a probabilistic/risk-based/system-sensitivity approach,

4. constraint costs are socialised (potentially alongside the balancing mechanism)
5. constructing upgrades to the grid to minimise constraint costs based on projects actually in construction

In this way there is no need to predict which projects may get a CfD, or may progress to construction, etc. While the planning for upgrades required would still need to be understood by NGET/ESO the work to do such can be progressed alongside generation project development, while updating the expected connection date based on feedback from developers as projects progress through consent, development, etc.

On a similar front for the wider context, with the Holistic Network Design it is not possible to forecast which offshore wind project may progress or when. However, the cost of designing offshore substations to have additional J-tubes and connection bays, switchgear, or even space for reactors, to accommodate future network connections is relatively minor. By adopting a non-firm connection strategy and constructing upgrades to the grid as required by in construction/constructed generation, the inclusion of a holistic offshore network can be incorporated to the wider upgrades works.

We would note that the above proposal need not exclude any of the grid connection options that have been proposed, including the preferred option 4, but could be implemented in a parallel process to such arrangements depending on the preference of the project developer.

5 Point Plan:

We welcome the 5 point plan, however, would note that some of the actions identified in it need not have a bearing on connection offers, and would warn that some of the actions (such as queue management, and CMP376) could have a detrimental effect on the UK's efforts to decarbonise, reduce cost of electricity, etc. Meanwhile, we welcome initiatives such as non-firm offers and urge NGENSO, NGET, OFGEM, etc. to extend this initiative to generation projects.

Grid connection is vital to a generation project **to raise finance and** for access to market, whether that project is 1.4GWs or 100MWs. While large utilities are able to manage a cumbersome grid connection process, **and don't require the grid connection to raise capital to develop**, their dependency on it is still as sensitive as a small developer with a 100MW project! Meanwhile, a small developer can not afford to deal with such complexities **and the grid connection for them is critical to raise capital**, however, their project/innovation may be game-changing for the UK efforts to decarbonise, our economy, and potentially have even wider benefits. At the same time, even though a large 1.4GW project may meet all of its milestones and appear to be progressing well to completion, the reality is that even those projects may not progress at the last hurdle - take for example Vattenfall's Norfolk Boreas project that is not progressing, and its sister Norfolk projects which are under review!

Proposed options:

We would note that the four target model options are all founded on the same overall structure to the process, and it is this that we would question. At the same time, we would note that none of those 4 options seem to address the issues identified - notably the unforecastable nature of projects, and so connections not being progressed and the wasted effort for those projects. Again we would note the example of Norfolk Boreas, the wider issue and uncertainty of low carbon projects securing CfD, etc.

While the options seem sensible, the nature of the system is that even large, extremely well-funded, consented, CfD-secured, multi-billion pound projects can (at the last moment) fail to progress. It strikes us that none of the options reduce wasted effort, instead only extending the impact of such project failures to other projects which, while they may struggle earlier on, may be more likely to be successful in the end. Meanwhile, it also seems the options increase complexity and delay within the connection process (for example, being forced into set windows.) While we appreciate that the internal design/management of grid connection design, etc. may be best managed in such a process, we believe that this process should not be visible to a connection customer; instead it should be purely internal to NGET/ESO.

Variation 5 - Separation of Connection and Capacity:

We believe that this variation has not been sufficiently explored and would note that it is worth extending and exploring further. While the variation proposes a mechanism such as an auction for capacity we believe this concept could be extended to be similar to the proposal in our question above (i.e. consideration of alternative, commercial, constraint mechanisms and socialisation of those constraint costs) and that it is a mechanism that already exists within the system operation in the balancing mechanism. We can see how such a proposal may not have been received well by stakeholders in the form presented, however, with an update to socialised, lowest second-price auction constraint cost (in the same way current balancing mechanism constraint auctions are held) we believe it meets all of the design requirements for an efficient connection management process.

While the feedback from stakeholders noted challenges we would suggest that this feedback may not have been looking at the full range of potential options within this variation, and could be mainly from incumbent large generators who may not suffer as significantly from delayed connection dates (and in fact may strategically benefit from others being delayed.) Yes, if a project were to be constrained on a "pay the most for a connection basis" the economic effect could be catastrophic, however, with a lowest second-price constraint auction (and socialisation of that cost) the mechanism should not affect the business model of a project (it wouldn't affect ours and doesn't appear to affect those of generators who already bid into such constraint auctions.) The complexities of the gas capacity auction model need not be a factor, national grid already holds constraint auctions and all that would be required is rolling out this already existing model to manage the constraints in the system until such a time as the planned construction works are complete (which can be based on minimising cost for a known system.) In relation to whether such constraint auctions should be based only on new generation - no, the role of the ESO/TO is to minimise cost and as such all connected generators that feed into the constrained part of the network should be included in the auction. We would note that, in the extreme, theoretically there exists the potential that a single generator could game such a model - if they had a generation project that could generate more than the capacity of the system, and so increase the constraint payment once all other generators had dropped out of the auction to unreasonable levels - though the mechanism should be easily designed to avoid these edge cases (should they be technically feasible.)

In the UK's efforts to decarbonise we believe it is inevitable that it will result in more renewable capacity on the system. While renewables are widely talked about as "variable" or even "unreliable" the reality is that they are downwardly dispatchable (and upwardly if the generation has already been restricted.) As such we believe adopting a system that foresees such a constraint process, and integrates it into the spinning reserve mechanism, is strongly advisable.

We strongly advise that this variation is revived as an area of focus.

Queue management:

In relation to queue management and cancellation of agreements: we do not believe it is a proper role for the ESO, NGET, or OFGEM to prevent projects from progressing to market through canceling connection agreements. The reasons for projects not progressing through milestones is not the concern, and should be outside the authority, of an infrastructure provider, system operator, or market regulator. Projects will always suffer setbacks, it is the nature of project work. The threat of removal of their access to market for issues that may be outside of their control is extreme and severely detrimental to the UK's efforts on decarbonisation, economic growth, and cost of living. Instead, NGET/ESO and OFGEM should be looking to facilitate connection to the distribution/transmission infrastructure as simply as possible; as a parallel example, the road network (whether local or primary) aims to provide access to all - the grid should be aiming to do the same.

Consultation questions:

- 1. No, we do not agree with the overall positions on the foundational design options, further, we do not believe that any of the foundational design options achieve the desired outcomes/address the issues identified. In addition, we note that Variation 5 has potential (though with a revised lowest second-price auction structure, e.g. based on the balancing mechanism) and should be revived as an area of focus.**
- 2. No, we do not agree that the "less radical means" are able to manage the issues as identified. Neither do we agree that capacity auctions (if done correctly) are riskier. We believe that should any of the foundational design options be adopted that it will not resolve the problem of the large disconnect between requested and offered connection dates, or the wasted effort for generation projects that do not progress to construction. This is because none of the foundational proposals take into account the unpredictable nature of whether a generation project will actually be built, and would note that early achievement of development milestones is not a sufficient indicator of success or that early slow progress against those milestones is not an indicator of a lack of ultimate success (but instead only of delay.)**
- 3. No, we do not agree that the reformed connections process should not mandate which approach to follow. If the process is to facilitate such a mechanism then it should very clearly only facilitate a locational signal approach. Centralisation of a market always has negative effects that outweigh any positive effects. Locational signals, as long as they are on both generation and demand/storage sides, will be more efficient.**
- 4. Yes, though not because of designing the connection/a generation project/storage, etc. but only as good process, effective communication, background data, and updates throughout the process as to how the grid is planning to be upgraded, etc.**
- 5. No. Such upfront fees are a barrier to projects at the earliest of stages and so restrict the market. While we appreciate that the cost of such work is notable it should be a socialised cost. The removal of market barriers has a far greater economic benefit through facilitating innovation, demonstration projects, new entrants, locally owned/co-operative projects, etc. that would otherwise struggle to get off the ground with upfront fees. Further, while the proposal is to discount that upfront cost from the application fee the reality is that there will be more applications (which is a good thing as it is a sign of greater diversity in the market) if there is no upfront fee.**
- 6. Our response to the consultation is based on a Modified Variation 5 proposal. As such we believe that all of the key data, while interesting and valuable, should be immaterial to a developer - so much so that, in the extreme, there is an argument that all of the assets (except the cable and termination) should be owned/managed by the**

TNO/DNO/OFTO. While it would be useful to model constraints, in our proposal NGET/ESO would be planning works based on projects that are actually progressing to construction, so the quality of the information at pre-application stage is inherently low because of the uncertainty in the connections system.

- 7. No. We don't agree with restricting access to the infrastructure, NGET and the ESO (and certainly not the regulator) should not be looking to restrict market entrants - instead, connection applicants should be considered on a probability/risk-based/system-sensitivity approach when planning updates to the system to minimise constraint costs. Restricting connection applicants at the earliest stage severely impacts competition in the market, resulting in increased cost to the consumer. Further, in the process that we have proposed (a modification of Variation 5) no such upfront barrier to the connection process is required.**
- 8. The basis of our response is that NGET and the ESO should provide as early access to the system as possible, and manage the costs of that independent of the generators. Your recommendation to wait to form a view on whether further changes to TMA E are required would appear to be consistent with that.**
- 9. The basis of our response is that all projects should be provided with instant access to the system and the constraint costs of that managed and minimised by NGET and the ESO (a variation on Variation 5.) In this case, TMA F would seem redundant. We would note that we agree with your lack of recommendation of TMA F4, which should be strongly avoided, auction-based access to the network will result in a lack of diversity within the market and translate to higher costs for the consumer.**
- 10. The basis of our consultation response is that there should be open access to the system, ie there shouldn't be a queue. As such we can not agree with any form of queue management, or with CMP376 which would have extremely detrimental effects on the market restricting diversity within it, excluding new entrants, and negatively affecting consumers, the UK's efforts to decarbonise, economic growth, etc. Extrapolating from a project's ability to meet early "Milestones" (or any other form of performance criteria) is not a valid way of identifying whether a project will progress to construction and only limits the pool of potential projects (and likely excluding smaller developers in favour of larger ones.)**
- 11. No, we don't agree the four TMOs present a reasonable range of options, or that they address the issues as identified in the consultation. A modification to Variation 5 seems to us the simplest, lowest cost, lowest barrier to entry, model that addresses the issues and offers the greatest ability for NGET and the ESO to plan, manage and construct the system with least wasted effort and most value to the consumer.**
- 12. No. we can't see how any of the four TMOs can be modified to provide a workable connection system that addresses the issues as identified.**
- 13. Yes, a modification of Variation 5 is a glaring omission. While we understand that the stakeholder feedback to it was negative, we believe that is only because of the auction system as presented and that this should be modified to fit in with the balancing mechanism (and the costs socialised)**
- 14. We don't agree that there should be any Milestones for a connection agreement - only that NGET and the ESO should have access to that developer data (ie the progress of their project) for planning of upgrades to the system.**
- 15. No, we don't agree that TMO4 should be preferred, as far as we can tell it does not address the issues identified and restricts diversity within the market, increasing cost for consumers**
- 16. No, we don't agree with the design criteria assessment as we don't agree with the design criteria. The issues as identified were: volume of applications, wasted effort, and disconnect between requested and offered connection dates. The design objectives and**

criteria do not address those issues. It appears that the TMO design process has become overly complex and incorporated criteria that are not issue focused. While the issues identified are clear, the underlying causes for those are: the inability for forecast which projects will progress to construction, the effort to design a system for such an unforecastable demand, and the excessive time forecasted because of the volume of generation (which is unlikely to be built.) The common factor in those is the inability to forecast the generation to be constructed, and instead of addressing that with the most reasonable approach (not trying to forecast it, but instead relying on updates from projects for planning of upgrades and commercial solutions for constraints) the options and design criteria seem to have focused on restricting access and minimising diversity within the market.

17. TMO4 doesn't seem to solve the problems in the system
18. A modification of Variation 5 would be preferable to TMO4
19. No. We believe that DNO Demand should be facilitated in the same way as other connections, within a Modified Variation 5 socialised constraint process.
20. As for other connections, NGET, and the ESO should model such connections on data from those projects and socialise the cost of any constraints.
21. In our proposed modification of Variation 5, such RDC applications, etc. would be immaterial.
22. We don't agree with TMO4, demand clearly can compound or offset constraints and should be managed in the same process that we have identified for our modification on Variation 5 (i.e. in a similar manner to the balancing mechanism)
23. We would agree that TMO1 to TMO3 are as undesirable as TMO4
24. No, we do not agree that TMO4 is aligned with offshore projects. Offshore projects are as uncertain, or possibly even more so, than other projects and so having a system that does not account for that uncertainty (as TMO4 does not) is not suitable.
25. There shouldn't be any barriers (such as a Letter of Authority) to entering the connection system.
26. No, we do not agree that TMO4 is aligned with network competition, or that it includes the most design time at an early stage - as that early stage design time is highly uncertain and potentially significant wasted effort due to the unforecastable nature of projects progressing to construction.
27. TMA H - fees to enter into the connection system should not be a barrier to entry, and TMA H1 should be avoided
TMA I - the ESO should not have any authority to reject a connection application, it is not the role of the system operator to restrict diversity within the market but to manage the cost of that. The cost of, for example, a speculative connection for a currently unknown offshore leasing round to the system operator (in our proposed Modified Variation 5 process) would be zero and having such an application would not restrict others from similar applications - however, updates from those projects and other stakeholders can be used to refine the picture the SO has of potential connections. Allowing the market to request speculative connections provides more information for NGET, the ESO, OFGEM, The Crown Estate, DESNZ, etc. to understand and design the most efficient system (whether that is the grid, or future leasing rounds)
TMA J - in our proposed Modified Variation 5 connection agreement options would be unnecessary
TMA K - non-firm capacity should most certainly be offered (even if our proposal of a Modified Variation 5 is not taken forward) we would note that none of the other TMA K variants would be required in a Modified Variation 5 scenario
TMA L - there should not be any requirements to accept and offer, as there would not need to be in a Modified Variation 5 process

TMA M - would not be required with a Modified Variation 5 process

TMA N - as for rejecting an application, the ESO should not be able to reject a modification

TMA O - the changes identified should not have any impact on design or construction of the system

TMA P - under a Modified Variation 5 process such a dual-track process is not required

TMA Q - under a Modified Variation 5 process such a detrimental variation is not feasible

TMA R - under a Modified Variation 5 process such imderused capacity is minimised

TMA S - under a Modified Variation 5 process such a fast-track dispute process is not required

28. **The implementation period is excessive, because of the complexity of the proposal (which also does not seem to address the key issues, or causes of those issues)**
29. **No, we do not agree with the transitional arrangements, or with the adoption of TMO4. The investigation of more effective mechanisms (such as a Modified Variation 5 process) should be explored, not only because it addresses the issues more effectively, and at lower cost, but also because implementation of it would be simpler and faster.**
30. **Simplification of the process is key to ensuring an efficient system. The current connection reform process has clearly become excessively complex and detailed for management of a simple problem - the unforecastable nature of project construction. A short consultation on the additional option of a Modified Vartiation 5 process should be conducted, detailing how the socialised constraint costs can be facilitated with existing systems (e.g. the balancing mechanism), etc.**

Conclusion:

Our consultation response can be summed up as:

- **NGET and the ESO (and DNOs) are providing infrastructure**
- **Access to that infrastructure should not be restricted, either through not allowing access due to a connection date or through upfront fees for pre-application**
- **While updates on the development of that infrastructure should be available to those who are using it, the details of how that is being planned is purely up to the infrastructure provider (and we would suggest could be based on a probabilistic/risk-based/system-sensitiity approach)**
- **There is an existing mechanism for balancing the system, and this should be extended to manage constraints and so facilitate connection at the earliest date possible, through socialising the constraint costs across all infrastructure users and minimising those constraint costs through a lowest, second-price, auction**
- **In this way NGET/ESO can most efficiently plan upgrades to the infrastructure without the uncertainty of project progression**

Our key example of why we believe the above is the optimal process is that of Norfolk Boreas: large, CfD-awarded, projects like that can fail to progress to construction at the last moment and none of the proposed options manage such a situation.