Ofgem Consultation

Connections end-to-end Review

Progressive Energy Ltd ('PEL') is a low carbon project development company, with over 25 years' experience in hydrogen and CCS projects. PEL originated HyNet North West, the most advanced industrial cluster within GB, as well as the Peak Cluster, to facilitate decarbonisation of cement and lime production. PEL has wide experience of both electrolytic and CCS-enabled hydrogen production projects, as well as working with the gas networks on decarbonisation research projects.

PEL's experience in connection applications has to date primarily related to demand connections at the distribution level although a number of these have triggered a requirement for transmission reinforcement. PEL is also developing a number of dispatchable power projects (e.g. hydrogen to power) which will be reliant on export connections at both transmission and distribution levels, the latter which are likely to also requirement transmission reinforcement (~50MW export).

Uncertainty and delay relating to grid connections represent a consistent risk across our project portfolio and a substantial roadblock in us delivering both our own project portfolio but also the wider UK's decarbonisation goals, such as CP2030 and an 81% reduction in emissions by 2035.

We have arranged our consultation response with an overview of our key general points that span across multiple areas of the consultation, and also direct responses to the questions according to the Chapters and themes used in the consultation document.

General Points

PEL recognises the significant roadblock that the 730GW connections queue represents to the UK's decarbonisation objectives. PEL has experienced that even relatively small demand connections (<30MW) at the distribution level can currently be given offers which **are 14 years into the future for a connection once a requirement for transmission reinforcement is triggered**. These long delivery timelines make it not possible to develop the projects which delays investment in the UK and the delivery of low carbon energy or a reduction in CO_2 emissions.

We also recognise that **the timeline to get clarity on connections date is too long and incompatible with project development timelines**. In our experience we have had to wait up to nearly 2 years from submission of a grid connection application to get a confirmed timeline due to projects having to go through transmission reinforcement assessments in addition to the timeline for assessments to be made at the distribution level.

We broadly agree with the 7 themes and the incentive ideas identified under RIIO T3 (Electricity Transmission Network Incentivisation) sections of the consultation. However, we would like to highlight that in its review of the consultation that Ofgem should consider the following key factors;

- **Industry Engagement and Training**: we broadly agree with the substance and rationale for the connections end-to-end review that is proposed and further information sharing from Ofgem or NESO with industry about how the new connections process will operate and mechanisms for engagement etc. We agree that these are perhaps best delivered as "teach-ins" or "webinars" for efficient means of raising awareness and understanding within industry. We feel this is particularly important so that industry can be aligned with developments, given the recent pace of change in this area.

- **Strategic investment:** we strongly agree with the general conceptual move towards more strategic investment in network infrastructure ahead of demands. It is well known by industry that the historic approach from Ofgem's management of network price controls has led to inefficiencies due to duplication of works (for both gas and electricity networks), but also significant delays in connections for new projects. Whilst in an environment of "low change", this can be seen as a sensible approach to maximizing value-for-money for consumers, in the current environment of "high change" that constitutes the energy transition, maintaining this approach will stymie necessary projects and investment that is needed to deliver UK carbon budgets. **We therefore emphasize that the connections process reform must be implemented in such a way that is consistent with the underlying purpose to enable strategic investments and expansion of grid capacity to meet CP2030 and longer-term objectives.**

- **Prioritization of "speed":** in addition to the strategic themes identified in the consultation, **"speed" should be included and prioritized in the early periods of the connections end-to-end review and reform over other considerations,** such as "value for money". Electricity network infrastructure, in particular, is known to be a key limiting factor for decarbonisation projects, whether for electrolytic or CCS-enabled hydrogen production, or other technologies, and a general movement towards electrification.

- **Significance of Industrial Clusters:** we emphasize that the industrial clusters such as HyNet, the East Coast and Peak Clusters are major drivers of changes of utility demands through the transition to Net Zero, with cross-vector impacts including electricity, gas, water and of course emerging CCS and Hydrogen networks, which could be regulated by Ofgem in future once developed. **Therefore, we encourage Ofgem and NESO to recognise the significance of the industrial clusters as stakeholders, and to include relevant related parties as part of engagement with "local actors" through development of the connections process review and reform.** In addition, the industrial clusters and most particularly HyNet, have from the outset developed their plans utilising a full system view (considering impacts to electricity, gas, CO_2 and hydrogen networks) and devised approaches that maximise synergies between these, and inherently therefore value for money. For instance, HyNet is designed to have hydrogen transport and storage at its heart, which critically has the potential to provide long duration energy storage and a route to dispatchable low carbon power, so that the electricity system can leverage the inherent strengths of a gaseous energy vector (gas and hydrogen). **It is vital that Ofgem and NESO leverage the >8 years of development work by HyNet to replicate this successful model for clusters.**

- **Importance of a "whole-system" approach:** we emphasize the importance of taking a "whole-system" approach to the connections review, due to the cross-vector nature of the utility demands and outputs for decarbonisation projects. The consultation appears to heavily focus on export transmission connections. However, manufacturing facilities are a major user of utilities that should be considered and even CCS or hydrogen projects typically require significant electrical loads, whether directly in the case of electrolytic hydrogen production, or indirectly for supporting processes like compression. Although Ofgem has identified that distribution connections can trigger transmission reinforcement, there is no further discussion as to how distribution level connections should be reviewed and reformed. As such we

encourage Ofgem and NESO to consider a subsequent consultation on distribution connection reform and facilitate "cross-pollination" of the findings to other regulated utilities (principally water, via Ofwat).

- **Boundaries:** we note that the industrial clusters span large geographic areas, and therefore will inevitably cross multiple DNO boundaries. For instance, HyNet potentially spans across the regions of North West England and North Wales, and other clusters would do similarly. **Therefore, it is very important that coherence and consistency between DNOs is realised, to avoid artificial discontinuities that are a result of flaws of administrative process rather than discontinuities in energy network topologies.**

Theme 1 – Visibility and accuracy of connections data and network capacity

Issues:

Question 1a. Do you agree with the issues we have set out under Theme 1 - Visibility and accuracy of connections data and network capacity? Are there any other issues under this theme that we should consider or be aware of?

We agree with the issues set out under theme 1 and would particularly like to highlight the issue of DNO's being unable to even approximate the likelihood of requirement and impact of transmission reinforcement during the initial connection offer stage. We would also like to highlight that one of the key considerations for Ofgem (and NESO) will be in maintaining transparency within the connections queue process, particularly as queue position and connection timeline is likely to become more dynamic as the connection process is reformed.

Proposals:

Question 1b. Do you agree with proposal 1a (new regulatory requirement on single digital view tools)? Do you have any views on how this should be implemented?

We agree with this proposal. We don't have any firm views on how this would be implemented but would like to highlight that we believe the following information as a minimum is key for developers to be aware of;

1. Location of assets
2. Asset capacity (MW), asset current utilisation (MW), asset availability (%), connection voltage (kV), connection queue at asset(MW).
3. Any information of how assets are connected & impacted by each other, e.g relation between DNO and TO assets.
4. Timeline of any confirmed upgrades to the assets and subsequent change in data of point 2 or 3.

Question 1c. Do you agree with proposal 1b (new regulatory requirement on the creation of guidance / standards for data visualisation tools)? Do you have any views on how this should be implemented?

We agree with this proposal. This must set a minimum standard for the type of data available and how often it is updated but should provide sufficient flexibility for DNO/TOs/NESO to innovate and improve digital view tools. Especially considering progress being made in big data and Artificial Intelligence (AI) that could have an impact here.

Question 1d. Do you agree with proposal 1c (new regulatory requirement to provide connections data)? Do you have any views on how this should be implemented?

We agree with this proposal and would propose that the timeline is aligned with the sequencing of the two annual grid connections application windows as part of the TMO4+ plans. This would allow DNO/TO's to review the queue as part of the application windows, update the publicly available data based on the applications and then publish it alongside the connection offers made to individual applicants.

Other:

Question 1e. What are your views on the completeness and discoverability of connections data that would be useful to you? Are the existing resources clear and transparent?

The existing data hasn't been useful at all and we have relied on direct engagement with DNO/TOs via budget estimates or applications to accurately evaluate connection costs and timelines. Where we have used publicly available data during early stage project feasibility work this has always proved to be wholly inaccurate upon receipt of the grid connection offer.

Question 1f. Is there additional connections data that would be of use but legal barriers prevent it from being published? If so, do you consider that there are solutions that would enable this data to be made available, for example by aggregating it to appropriate levels / anonymising it etc.

Yes we agree that if data cannot be shared due to confidentiality requirements then a sensible alternative would be to anonymise and/or aggregate the data.

***Anything else*:**

Question 1g. Is there anything else regarding Theme 1 – Visibility and accuracy of connections data and network capacity that you consider we have missed?

Ofgem needs to consider how TO's make data visible to DNOs such that when demand applications are made at a DNO level that the DNO can be suitably informed on the likelihood of transmission re-enforcement and complexity of delivering this. Many of the critical demand users as part of the CP2030 plan (batteries, green hydrogen etc) are likely to rely on DNO connections with transmission reinforcement. DNO's must then make sure that it is clear to applicants when transmission impact assessments are being processed by the TO and the progress/expected timelines.

Theme 2 – Improved Standards of Service across the customer journey

Issues:

Question 2a. Do you agree with the issues we have set out under Theme 2 - Improved standards of service across the customer journey (not including "minor connections")? Are there any other issues under this theme that we should consider or be aware of?

PEL has experienced problems in the connection interface between the DNO and TO around the completion of transmission impact assessments with DNO's often being delayed in the submission of TIAs and TO's in the progression and evaluation of the TIAs. As there are no regulatory requirements for the submission of TIAs to occur in a timely manner then there is no recourse for projects when that is delayed.

Proposals:

Question 2b. Do you have any views on proposal 2a (general principles-based licence condition and supporting guidance around standards of service throughout the entire customer journey)? Do you have any views on how this could be implemented?

DNOs and TOs should be incentivised to keep to regulatory time periods throughout the process from customer application through to delivery. We do, however, acknowledge that not all applications are the same and the system should provide some flexibility to account for the complexity of the different applications, without leading to all applications going at the pace of the slowest.

However, there is no reason why it should not be possible for the regulator to outline expectations for DNO/TOs to complete all stages of the application from submission through to energisation.

Question 2c. Do you have any views on proposal 2b (new prescriptive condition(s) around standards of service)? Do you have any proposals for any specific areas of the connections customer journey that should be subject to such a requirement?

There should be a firm requirement for DNO's to submit Transmission Impact Assessment within a fixed timeframe after acceptance of the offer.

Question 2d. Do you consider that any of the existing standards of service requirements set out in the regulatory framework for provision of specific products / services should be revised or removed? Do you consider that there is any duplication or overlap of regulatory requirements across the regulatory framework that needs addressed?

No additional comments.

Anything else:

Question 2e. Is there anything else regarding Theme 2 – Improved standards of service across the customer journey (not including "minor connections") that you consider we have missed?

No.

Theme 3 – Requirements on networks to meet connection dates in connection agreements

Issues:

Question 3a. Do you agree with the issues we have set out under Theme 3 - Requirement on networks to meet connection dates in connection agreements? Are there any other issues under this theme that we should consider or be aware of?

To date PEL has not had any projects that have progressed to operation and as such haven't experienced delays to delivery of energisation but this represents a very real and significant risk for our projects. We have experienced significant delays in DNO and TO response timelines during the delivery of the connections during the application and engineering phases.

Low carbon energy projects are not just beholden to project timelines but also Government timelines with strict commissioning windows defined, for example, in the Low Carbon Hydrogen Agreement. To help deliver these essential projects Ofgem, DNO, TOs and NESO must ensure that the connections queue process and the wider Government business models for supporting decarbonisation project work together and not against each other.

Proposals:

Question 3b. Do you have any views on proposal 3a (strengthened principles-based licence condition around meeting connections dates)? Do you have any views on specific wording that would achieve the intended outcome?

We agree with the proposals. We also think that this should include principles around response timelines for emails, calls and engineering design reviews as well as connections offers being made and projects being connected. In project development it is often the intermediate milestones being missed (e.g sign off of engineering design) that ultimately delay the project, so Ofgem must ensure that there are requirements to meet intermediate and final deliverable deadlines.

Question 3c. Do you have any views on proposal 3b (minimum standards / SLAs around meeting connections dates)? Do you have any views on specific standards that could be introduced and how they would work in practice?

We agree that minimum standard licence conditions would be a good idea. We believe that these minimum standards should be based on connection voltages with longer timeframes permitted for higher voltage compared to lower voltage connections (or based on capacity (MW)). These minimum licence conditions should be based on an amalgamized level which will allow for some flexibility for DNO/TOs to account for complexity in individual applications.

It is difficult to imagine that any penalty associated with a delayed connection date would adequately compensate projects which would be impacted by delayed production as well as additional construction and commissioning costs. If significant financial penalties were to be introduced this would likely result in perverse behaviours from DNO/TOs, which would be incentivised to make conservative connection date offers to minimise the risk of penalties.

As such, we believe it will be far more beneficial for Ofgem to focus on incentives for meeting connection dates rather than penalising delays.

Question 3d. Do you have any views on proposal 3c (a financial instrument designed to offer recourse to connecting customers who face detriment due to delays)? Do you have any views on how this should be implemented?

See above – we do not believe that financial recourse will be of sufficient benefit to connecting customers and would propose that Ofgem focuses on incentivising and rewarding the best performing entities.

Anything else:

Question 3e. Is there anything else regarding Theme 3 - Requirement on networks to meet connection dates in connection agreements that you consider we have missed?

As we develop spatial energy planning and look to bring complementary technologies on stream (renewables, batteries, hydrogen) then network operators and NESO will need to consider that both delivery of individual projects and the system are important. Ofgem should consider whether licence conditions for DNOs/TOs/NESO should also account for this system level delivery as well as individual connection delivery.

Theme 4 – Quality of Connection Offers and Associated Documentation

Issues:

Question 4a. Do you agree with the issues we have set out under Theme 4 - Quality of connection offers and associated documentation? Are there any other issues under this theme that we should consider or be aware of?

To date we have not experienced this problem and any issues have related to the timing of information provided rather than the quality, with the exception of publicly available data as discussed under Theme 1.

Proposals:

Question 4b. Do you have any views on proposal 4a (principles-based licence condition on the completeness / quality of the offer and supporting documentation)? Do you have any views on specific wording that would achieve the intended outcome?

We agree that a principles-based licence condition is likely to be sufficient to manage the quality of offers. We would propose that there are clear mechanisms for companies to raise that they are unhappy with the quality of information provided and timelines for network operators to respond to any complaints.

Question 4c. Do you have any views on proposal 4b (minimum standards / SLAs on the completeness / quality of the offer and supporting documentation)? Do you have any views on specific standards that could be introduced and how they would work in practice?

We do not believe this is necessary.

Other:

Question 4d. What do you consider would constitute a 'high quality offer'?

A high-quality offer should provide clear details on the connection; to include location, routing, design, cost, timeline etc. It should also highlight areas of uncertainty / risk to delivery of the connection, including complicated crossings, land rights issues, design issues etc.

It should provide information about existing network capacity / performance where the connection is made (outages etc).

It should also outline the next steps in the process, customer and network operator requirements.

Anything else:

Question 4e. Is there anything else regarding Theme 4 - Quality of connection offers and associated documentation that you consider we have missed?

One area that Ofgem should particularly consider is in relation to the provision of information for non-firm offers. As grid operators are often not able to provide accurate forecasts of performance (availability) or even detailed historical data, developers are often forced to apply for firm connection offers even if they would likely have been able to accept a non-firm offer. This increases the amount of grid re-enforcement required adding cost, complexity and causing delays. Ofgem should assess how they can make the required data available at the application

and offer stage to allow companies to consider what is the right offer for them, even possibly offering a non-firm and firm connection as standard as part of the offer, in the same way that grid operators offer a “Full works” and “Point of Connection” as part of the same offer currently.

We recognise, at DNO level at least, that this is partly addressed, for projects at relevant GSPs, by the Technical Limits process. However, such offers are only shared with developers following acceptance of the initial firm offer. As above, this needs to come far earlier in the process, thus saving time and resource for all parties, albeit with the recognition that such connections are time-limited.

Theme 5 – Ambition of Connection Offers

Issues:

Question 5a. Do you agree with the issues we have set out under Theme 5 - Ambition of connection offers? Are there any other issues under this theme that we should consider or be aware of?

As described above, we acknowledge the concern that the increase in penalties associated with connection delays may unfairly penalise network operators and may lead to unattractive behaviours, such as longer connection date targets. For this reason we feel that it would be better for Ofgem to focus on positive incentives for operators to offer and deliver shorter connection dates, rather than penalise late delivery of offers.

Proposals:

Question 5b. Do you have any views on proposal 5a (strengthened principles-based licence condition around offering earliest achievable connection dates)? Do you have any views on specific wording that would achieve the intended outcome?

At the moment network operators need to deliver the lowest cost technically acceptable connection. However, this might not represent the earliest connectable solution and so the system should allow for applications to stipulate the project drivers (cost, schedule etc), such that offers can be tailored to suit both parties.

We also propose that monitoring / reporting of connection date offers and delivery at different voltages is implemented. Penalties / incentives could then be applied on an overall performance basis rather than individual connection basis, as well as implementing penalties/incentives based on relative market performance to other DNO/TOs.

Anything else:

Question 5c. Is there anything else regarding Theme 5 - Ambition of connection offers that you consider we have missed?

No further comments.

Theme 6 – Minor Connections

Issues:

Question 6a – Do you agree with the issues we have identified? Are there any other issues under this theme that we should consider? Please provide data and evidence to support your views if possible.

This section is not relevant to PEL

Proposals:

Question 6b – What are your views on our proposals designed to address these issues? Are there other proposals you consider would achieve the intended outcomes?

This section is not relevant to PEL

Anything else:

Question 6c – Do you have views on how poor performance could be addressed under these proposals to ensure the smallest scale customers are protected and LCT roll out is supported?

This section is not relevant to PEL

Theme 7 – Provisions and Guidance for Determinations

Issues:

Question 7a. Do you agree with the issues we have set out under Theme 7 - Provisions and guidance for determinations? Are there any other issues under this theme that we should consider or be aware of?

PEL has not experienced this issue to date. However, we acknowledge the need for a clear recourse process that is delivered on a timely basis. This will be particularly important as the connection process reforms, leading to inevitable teething problems during implementation.

Proposals:

Question 7b. Do you have any views on proposal 7a (Ofgem to review the guidance for connection determinations)?

We propose that Ofgem considers the risk of additional demand due to connections reform, the volume of new connection customers unfamiliar with the process and how this will be adequately resourced. It may be that further information/communication/training is required for connection applicants.

Anything else:

Question 7c. Is there anything else regarding Theme 7 - Provisions and guidance for determinations?

No further comments.

Question 8a. What are your thoughts on each of the three ideas we have presented? In your response, please identify positives and negatives you see in each of the proposals, and if you have a favoured option and why that is.

PEL would welcome any measures that help to accelerate the ability of projects to connect to the grid in an affordable manner. With that in mind it is clear from a vast number of studies, including the CP2030 plan, that significantly more SGT capacity will be required by 2030 and that TOs should be proactively increasing capacity to meet this demand, e.g. via the advanced procurement mechanism. These demand forecasts should allow Ofgem to ensure that there is no "gaming" from TOs in underpredicting capacity to earn rewards. Instead TOs should be incentivised to meet or exceed the required demand. The one risk we see with the approach to SGTs is that these are not the only components required to deliver the required capacity. Whilst a key equipment item, we would implore Ofgem to ensure that TOs are incentivised and required to increase the capacity of all required network components in a timely manner.

We believe that the connections timeframe related suggestion is sensible and it should be possible for TO's/DNO to deliver these connections within a standard timeframe on a portfolio basis, accepting that some individual connections may be longer/shorter due to varying complexity. We have reservations about using the suggested "Typical / Atypical" approach as this is likely to lead to more projects being categorised as Atypical unless there are clear criteria to assess when a project would qualify as Typical / Atypical.

We believe that a post price control performance review is a sensible suggestion although we also acknowledge the risk of network operators receiving unfair negative feedback from projects, the developers of which are angry about not getting connections at an expected cost and/or timeframe. We therefore think that any survey feedback should be balanced against more measurable performance data such as connections delivered etc, with a higher weighting given to this measurable data.

One additional comment we would like to make is that clearly there is a vast number of changes within the end-to-end connections process and Ofgem is introducing a significant number of incentives/penalties to DNO/TOs at a time when there is a lot of strain on the network operators due to the surge in demand. It is important that Ofgem works with DNOs, TOs and NESO to bring them along on this 'journey' and to ensure that these critical entities fully buy into the changes in order to create a collaborative work environment. Ofgem will have to consider whether bringing in all these measures at once, or phasing them in, will be more manageable for network operators.

Question 8b. With reference to our Future Considerations, do you have any further ideas on how TOs could be incentivised through a financial penalty and reward model, to deliver faster connections times, a more effective overall connections process in RIIO-ET3 and drive behaviours that have a positive long-term impact on the network?

CP2030 outlines a number of critical infrastructure projects at a transmission level that are required to deliver clean power. Special importance should be placed on the delivery of these schemes within the related timeframes. Consequently, we believe that specific incentives should

be introduced for DNOs/TOs who deliver the capacity for the required technology options as part of the CP2030 plan.