Peel Cubico
RENEWABLES

National Grid ESO
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27th July 2023

Connections Reform Consultation Response

To whom it may concern,

I am responding to this consultation on behalf of Peel Cubico Renewables, a JV between Peel NRE and Cubico Sustainable Investments. Peel NRE, part of regeneration business Peel L&P, builds on 20 years' experience of delivering transformative and successful energy projects and will lead on identifying sites and early-stage development activities across the UK. Cubico, a global investor in renewable energy, has nearly 3 GW of renewable energy projects installed across 12 countries in Europe, the Americas and Australia, with more than 4 GW in construction and development. It brings expertise in financing, route to market, construction and operation. By bringing together the expertise of each organisation, Peel Cubico Renewables will be at the forefront of the net zero energy transition and play a pivotal role in the green transition.

We wholeheartedly support the need for a reform of the grid connections process and see the 5-point plan from the ESO and the joint 3-point plan from the DNOs via ENA's SCG as very positive moves forward. We also look forward to seeing further detail on the capacity that has been released and on the treatment of BESS as this still seems unclear. It is particularly concerning that the implementation of CMP376 may take up to 5 years or more to take effect.

In preparing this response, I am basing my response on more than 20 years of experience as a grid engineer working on both large transmission-connected and small and medium sized embedded generation across the UK for the last 18 years and also on a large number of international projects including projects in New Zealand, Ireland and the USA (connecting into PJM, NYISO and CAISO).

Our response to this consultation aims to highlight where we think the proposed reforms will genuinely benefit all parties driving towards the goals of energy security, net zero and reduced costs to the consumers and where we are concerned that there may be some unintended consequences to the proposals.

Initial Thoughts

As can be seen in Figure 1.1 of your consultation document, Energy Storage connections seem to be causing a major challenge to the NGESO and T&D operators. Can you identify a reason why there are so many projects looking for connection and is there more information that can be given to guide these projects to find connection options more quickly or easily than the scatter gun approach that seems to be developing? We believe that Energy Storage as both standalone projects and as part of hybrid generation projects should be carefully considered at each stage of this connections reform – not just treated as generation and demand causing potential constraints on the network. At the same time, assuming that they do not operate when there are any constraints in the network may mean that they connect but cannot function in the way they need to, to support the network at key times. We welcome the work that is being done in the 5-point plan on this, but clearer policy and guidance needs to be given as soon as possible to unlock the benefits of storage on the system at both transmission and distribution.

The projects we, as Peel Cubico Renewables, develop are smaller, onshore generation, in the 20 – 200MW range, sometimes embedded in the distribution network and sometimes connected directly to the transmission system. In this role, we are fully aware of a significant disconnect between the way ESO has traditionally planned and designed the system and the evolving nature of the grid which is more and more decentralised and flexible. An example (that is not specifically related to this reform but exposes the way projects are treated differently) is the recent SCR. Here, despite the decision that shallowish connection charges would be implemented, embedded generators going through project progression often have to include large additional costs because of SGT upgrades that may or may not be shared with other parties. The costs and uncertainty involved with this make it difficult for these projects to progress. Embedded generators need to be considered more in this reform and in all decisions made by ESO / FSO.

Our other concern is that Ofgem reforms are slow. Charging reform has been on the cards for more than 5 years but has still not been implemented, making it harder and harder for projects to have any clarity of future charges. And with current market and policy pressures (planning requirements, inflation and supply chain pressures) it is putting our net zero targets in jeopardy. We need clear but urgent decision making.

Answers to Specific Questions

1. Do you generally agree with our overall initial positions on each of the foundational design options and key variations? Are there any foundational design options or key variations that we should have also considered?

For Variations 1 (who you apply to) and 2 (who designs the connection assets), although we do agree that there is not a major issue created with either of these issues, we do see a major disconnect between the DNO connection teams and the TOs/ ESO. This means that embedded generation projects are left in the dark for long periods of time and are delayed from joining the queue because of the timing of the Mod App / Project Progression process. This means that capacity can be secured by those who apply directly to the ESO in the meantime. The 'queue' is not really working in this circumstance. More transparency and joined up thinking in this aspect is needed, as part of the overall change to the system to mend the broken queue.

For Variation 3 we agree that contestable works should not be the focus of this reform but that it may be relevant to think through how a coordinated connections design might be helped or hampered by this – do we want to continue to build lots of individual connection assets or develop more of an integrated approach? How can you develop the SSE approach for coordinated transmission connection options to make it more realisable? How can some of the thinking in the HND around anticipatory investment and coordinated connections be applied to the connection assets as well as the enabling and wider works? This will be particularly important where substations are physically constrained so grouping projects together to connect into the same bay may reduce the need to extend. Or where the creation of a new substation for a group of projects would avoid the need for multiple radial connections back.

For Variation 4, we can see the potential benefits of the windows approach and the ability to have more of a coordinated design approach, but we have some concerns about the actual implementation of this. We would encourage the reform process to have this as an option that can be used if the issues we raise later in the consultation response can be ironed out but not as the main guiding principle to the reform. As you will know from your international benchmarking, windows are used in the USA and they can cause significant delay, not only to application and offer timescales but also to the uncertainty of design and therefore delay in infrastructure build-out.

2. Do you agree with our initial view that the current issues with the connections process could potentially be addressed on an enduring basis through other, less radical, and lower risk means than the introduction of capacity auctions?

We agree that this is a sensible decision in relation to connections reform and should be carefully considered in other reform programmes.

The stakeholders' views about complexity and uncertainty are key considerations that should be held in mind during all reforms as although optimisation can reduce overall costs and bring consumer benefits, these can be completely wiped out by a reduction in investor confidence and increased cost of capital. Especially if reform is slow and introduces uncertainty and complex processes.

3. Do you agree with our initial view that the reformed connections process should facilitate and enable efficient connection under either a market-based (i.e. locational signals) or 'centralised' deployment approach (or an approach somewhere between the two), but not mandate which approach to follow?

We agree with your approach on not assuming that a centrally planned approach is used for generation or large demand except in specific strategic circumstances and we will engage further with REMA on proposals for locational signals as we see potential issues could be raised with these if not implemented carefully.

4. Do you agree with our initial recommendation that TMA A to TMA C should all be progressed, irrespective of the preferred TMO?

Yes, access to key data in a readily accessible manner, access to pre-application meetings that are informative and well managed and an alternative optioneering route that is available if required are fundamental to managing the connections system. Resourcing and availability of connections teams at both SO and TO will be crucial as currently the wait time means that it is more likely that connection application for projects that have a detrimental impact on the grid will be submitted without a pre-application meeting, increasing the overall volume of applications, and having a detrimental effect on the conversion rate and wasting time and effort on both sides.

5. Do you agree with our initial recommendation on the introduction of a nominal Pre-Application Stage fee, discounted from the application fee for customers which go on to submit an application within a reasonable time period?

We do not generally support this. It can be perceived as a barrier to at the initial stage of a project and although we understand that it takes time and resources of the ESO / TO; if it is accessible, informative and reliable, then it could lead to an overall reduction in speculative applications. Everyone is looking for more clarity on where projects should be located or connected to make the most of the current and planned infrastructure or to drive the most coordinated investment. The ESO in partnership with the TOs and DNOs should be best placed to inform this and so sharing this information through key data and well-designed pre-application meetings (where more nuanced information can be shared) will mean that we can all work together to make net zero a reality.

If it were to be implemented, then it would be very important that there is clear, trustworthy, and transparent, up to date information for developers to see prior to entering the pre-app stage. This should be the focus of attention as noted below.

6. Do you agree with the importance of the TMA A 'Key Data'? Please provide suggestions for any other key data that you suggest we consider publishing at Pre-Application Stage.

Key Data, along with good pre-application meetings to discuss the particular challenges or opportunities in the areas of interest or nearby nodes that have more capacity to connect will be key to getting projects connected efficiently.

The TEC Register and Embedded Register are helpful documents, but the connecting substation should be related to the closest MITS node to enable identification of relevant assets in a particular area. The ETYS should also be amended to indicate MITS nodes rather than MITS substations as this is more relevant to attributable works and TNUoS charges. It would be good to also provide the GSP data for all GSPs in one accessible place so a clear view of the potential impact of all embedded generation / demand can be seen on the transmission system.

The TWR should be updated more regularly and a complete overhaul of how it is presented to enable comparison of the required works (split by attributable, enabling and wider works) for connecting projects in a

particular area. Quoted costs for works should also be included to enable more transparency. In the US, all connection offers (costs, works and timescales) are available to registered users of the system (subject to security clearance) linked into the connections queue and so are full power system models with all contracted generation, planned works and upgrades out for 10 years.

With note to your comment "*Geographical visualisation of the queue and information on available capacity across the network at substation or grid supply point level is not only challenging due to the complexity and availability of the data, but also the fact the data is owned by multiple different parties across the ESO, TOs and DNOs. There are currently no code obligations for parties to exchange this data and therefore no agreed data points or common format. This would be essential to be able to provide industry with granular Pre-Application Stage information that can be kept up to date.*" – this seems to be the main issue that should be addressed, over and above any further requirements related to gates or windows. If no-one knows what is contracted to connect to the 'whole system' and the works that are planned to reinforce the system then how can we plan for what can connect efficiently and cost effectively?

7. Do you agree with our initial recommendation with regard to TMA D (requirements to apply)?

We agree that implementing these requirements should help to reduce speculative and duplicate applications and therefore wasted work. We see no issue with LOAs for connection applications as this is common practice for applying to DNOs. Connection offers that do not apply to a specific site and can be changed via Mod App to reflect different timeframes, technologies and capacities can be easily abused and a position in the queue can become a tradable commodity meaning that there is no desire to remove yourself from the queue if at all possible. We do think that at this stage this is sufficient and more onerous evidence at this stage could create a chicken and egg situation where investment in further development work becomes hard to justify without knowing that there is potential for a cost effective and timely grid connection.

It is actually of benefit to the ESO / TOs/ DNOs to have visibility of projects that are looking to connect as early as possible (but once they are deemed to be feasible) as this facilitates the design of a system in a more coordinated manner. To date, connection applications have been actively encouraged by ESO as without a contract to connect, then enabling and wider works could not be triggered and grid infrastructure could not be planned.

This reform should introduce ways to manage the connections process, but it should also find ways to build flexibility on both sides by ensuring that feedback can be provided from the ESO to the developers on more optimal connection options / capacities and to enable an ability to update enabling / wider works without introducing uncertainty.

Standardisation and simplification of terms and conditions would be welcomed as currently there is confusion at TO / ESO and developers in relation to the application of SQSS, attributable works and firm / non-firm connection design and access and management of constraints.

8. Do you agree with our initial recommendation with regard to TMA E (determination of enabling works), including that it is right to wait until the impact of the 5 -Point Plan is known before forming a view on whether further changes to TMA E are required?

Everyone is keen to see the output of the 5-point plan, but it would be good to undertake some preliminary work in advance of that being completed to see what impact each of these levers would actually have on the existing queue and on costs to the developers / consumers. This could be done in parallel and would allow a quicker response once the 5-point plan has been implemented.

We are sure that Anticipatory Investment is absolutely fundamental to us meeting net zero. We wholeheartedly agree with your comment - *Creating strong links between the CSNP and the connections processes should ensure that anticipatory investment is determined robustly and efficiently in line with future generation and demand scenarios.*

Everything else that you suggest here are just ways to connect and manage more, increasing constraints that are either seen by consumers via constraint costs or by generators via lack of access to the system. This may be fundamental to a business case and because this uncertainty increases generation costs then this also impacts on the consumer. We need to connect, manage AND build.

9. Do you agree with our initial recommendation with regard to TMA F (criteria for accelerating 'priority' projects)?

We understand the need to determine ways to prove that projects are progressing, but we have some concerns about the impact of this methodology. As it is easier to compile valid consent applications for BESS and solar projects and those that are under the NSIP limit, then there is a good chance that they will secure all the available and easy to achieve capacity, leaving wind, biomass, energy from waste, nuclear and other projects with long connection timeframes and more uncertainty. Whilst this may help to ensure that the available capacity is used quickly it could create more uncertainty for the 'harder to consent' projects where significant investment is required prior to submission of consents and it may make it more difficult for these technologies to progress their development. These projects are usually larger and will therefore have a larger yield, and subsequently greater impact on achieving net zero. Their size simply means that planning application / consent has a longer timeframe. Facilitating smaller, lower yield projects at the expense of these larger projects is not necessarily the most efficient way to meet our net zero targets.

We think that National and Regional targets for different technologies would help to ensure there is more of a balance in technology and locational mix. So, priority projects under TMA F3 should meet the following criteria:

- Demonstration that the project has reached a key delivery milestone such as submission of <u>VALID</u> major planning consents.
- and that the target for this technology type in this region has not yet been met by other projects more advanced in the queue.

This should regularly be reviewed to ensure any terminating or terminated projects freeing up capacity have their capacity re-allocated.

It is important to question at this stage how RDCs for DNO GSPs would be treated here. We assume that they would also be advanced as quickly as transmission connected generators without having to show that all the projects behind each GSP have submitted valid consents.

10. Do you agree with our initial recommendation with regard to TMA G (queue management)?

Connection dates being delayed is a key concern here. And is already a concern with no real comeback from developers when NGESO / TOs do not meet timescales whilst queue management processes are being put in place for ESO to have a comeback on the developers if they miss milestones. This needs to be kept in balance. A contractual agreement should have some legal basis.

We agree with the comment with relation to PQM: *ii) potential for projects with inherently quicker delivery timetables to be perpetually advanced ahead of projects with inherently longer delivery timetables. In combination this could inadvertently lead to a rebalance of the technology mix with unintended consequences.*

11. Do you agree these four TMOs present a reasonable range of options to consider for a reformed connections process?

Yes, they are a good range of options. And we expect that the foundational elements that are applicable to all will have a significant impact on the process that is currently in place.

12. Do you think any of the four TMOs could be materially improved e.g. by adding, removing or changing a specific aspect of the TMO? If so, what and why?

We comment later on our view of TMO4 and improvements to the window aspect of this but we wonder whether there should be a 3rd gate where, following granting of consents (i.e. shovel ready) that any possible available capacity (either firm, non-firm or even temporary whilst other projects ahead in the queue are still in development) is made available for accelerated connection.

13. Are there any important TMOs we have missed?

Yes, we think the TMOs presented cover many possibilities. They include options to add in and remove elements and provide flexibility as the connections reform evolves but at the moment they lack clarity on a few key points so the benefits of one TMO over another is difficult to assess. We would be happy to engage on further design sprints as the reform process develops.

14. Do you think 'Submit Consent' is too early for Gate 2 in TMO2 to TMO4? If so, what milestone should be used instead and why?

As noted above, 'Submit Consent' requires significantly different amount of work for different technologies and capacity of project. We agree that 'Submit Valid Consent' is a suitable milestone to measure progress towards being ready to connect, we think that NGESO need to be careful of the unintended consequences to the queue of using this as the main criteria that determines position in the queue. This is particularly relevant in TMO4 as the ability to get to 'submit consent' is the main aspect that determines your position in the queue.

A more joined-up approach between the planning system, including regional plans (like the one put together by Greater Manchester Combined Authority) and the design and build-out of the transmission network should enable more anticipatory investment and should support DNOs in submitting RDCs and should support creating a queue that includes a wide variety of technologies in different regions.

15. Do you agree that TMO4 should be the preferred TMO?

We do understand the benefits that windows can present in providing an opportunity for coordinated design. But we are not sure that this will enable this coordination in practice and we have some concerns about how the application of a window application process at Gate 1 will work for both the ESO (and future FSO) and for all the developers and network operators.

Our main concerns are:

    i. How attrition rates and anticipated investment will be included at the Gate 1 window stage and still create a coordinated design.
    ii. How RQM+ would be managed for this option for projects that are held up by previous windows.
    iii. How Mod Apps would be dealt with.
    iv. How the windows would be resourced.

Attrition and Anticipatory Investment

The coordinated design done at Gate 1 will have to hold in balance attrition rates and anticipatory investment and so may not be able to come up with credible coordinated design that can gain investment approval and also provide meaningful connection timescales and costs in offers to enable projects to move their development forward.

With reference to your Figure 7.1 in the consultation where you discuss the way attrition could be dealt with in TMO4: What happens if more than the 400 assessed advance? How does this work on a granular (node by node) basis? Is there not a risk that backstop dates will slip? And if they do, how will that impact on the financial viability of projects? And what value is there in the backstop dates at all?

TMO4 has not addressed the issues brought on through interactivity with the higher rate of attrition at this stage in the process that would not happen if the window is held later as in TMO3.

Queue Management between Windows

Have you thought about how projects in different windows interact with each other? Can long lead-time projects in window 1 impact on connection dates for projects in later windows?

If we use the example in Figure 7.1 again to think about how the windows interact: In this example, 800 projects apply in window 1 but it takes up to 6 years to determine if they are going to connect or terminate. In the meantime, another approx. 4000 projects (800 every year for the next 5 years) have applied and are given dates that assume that up to 2400 projects in front of them will connect. Then, one of the projects in window 6 meets gate 2 very quickly but has to wait on enabling works for the other 2399 (or more) assumed projects ahead of it. What if one of the projects in window 1 is massive and is triggering significant enabling works pushing the backstop date for window 1 (and all subsequent windows) out but it also has a development timeline that is 5 years + (not unfeasible for offshore wind or nuclear) and so has not yet progressed to Gate 2? Without a way to 'merge' the windows we could end up with backstop dates for future windows that are an incredibly long way out and actual connection dates that are untenable.

Conversely, as noted in our response to question 9 above, if we continually let those projects that are easier to consent to 'jump the queue' then how will other technologies ever progress?

How Mod Apps would be dealt with.

At the moment, projects can change elements of their connection application through a Mod App (connection date, capacity, technical details). In the US, then a material modification can mean that you have to go into the next window to be studied alongside all the new projects. A non-material modification means you stay where you are the queue. But the definition of a material modification isn't that clear and seems arbitrary. Often connection applications are submitted early on in a project and change in policy / technology / design can change capacity, fault levels, impedances, timescales, even connection design. How would TMO4 deal with this? Would you have to wait for the next window for your project to be re-assessed? Would it be different if you have passed Gate 2?

Resourcing Challenges

To ensure that TMO4 (or TMO3), if it is taken forward, does not hinder the progress towards net zero, then there would need to be reassurance that the windows would be held regularly (annually or preferably every 6 months) and not suspended so that applications can be delayed for up to 2 years as has recently happened in CAISO and PJM in the USA. Resourcing will be a key challenge here as there will be a large amount of work required in a short period of time if the connection offers are to be produced on time and with sufficient design behind them to have some basis of credibility.

We think that the resourcing challenges for a window at Gate 2 (as in TMO3), held every 6 months, would be less onerous than one at Gate 1 (as in TMO4) every year.

16. Do you agree with our design criteria assessment of the four TMOs? If not, what would you change and why?

We think it would be possible for TMO3 to include a backstop date at Gate 1 (in the same way that TMO1 does). And it should also be feasible to give an earlier, non-firm access, backstop date at this stage too. Essentially if TMO3 is treated like TMO1 until Gate 2 where the window process kicks in to enable coordinated design and optimisation and queue advancement (like the HND does now). Therefore, we think that the design criteria assessment for TMO3 could be improved beyond the scores it has been given here.

17. What are your views on the stated benefits and key challenges in relation to TMO4?

We have provided our feedback on TMO4 above in question 15.

18. Do you think that there is a better TMO than TMO4? Whether that be TMO1 to TMO3, as presented, a materially different option, or a refined version of one of the four TMOs we have presented?

If our concerns related to TMO4 can be addressed, then we agree that this TMO4 has some benefits, but we think that TMO3 could also be a good solution. Please refer to our responses to questions 15 and 16 for reasons.

19. Do you agree with our views on DNO Demand in respect of the TMOs?

No comment

20. Do you have any views on the appropriate mechanism to incentivise accurate forecasting of requirements and avoid more RDC than is necessary being requested by DNOs?

We don't have any suggestions on this but how much consultation has there been with the different DNOs and will this create a postcode lottery with some DNOs being more proactive than others? This element of the connections reform consultation seems very light in detail and this is where there could be considerable opportunities for net zero benefits. Embedded generators seem to be constantly left in the dark and although we recognise that it is difficult at a transmission level to have a view beyond the GSPs, the role of the ESO and the future FSO will need a considerably more joined up approach – not an after-thought once we have dealt with transmission connected parties.

In relation to our other comments on TMO3 being possibly more suitable, we do not see any reason why an RDC approach could not be applied at Gate 1 by the DNOs on an annual or 6-monthly basis in advance of customer applications rather than remaining with the status quo of applying afterwards where the timescales can be incredible long and drawn out (we currently have an embedded generator project that applied for a connection in early 2022, signed an offer in May 2022 and is still awaiting a project progression…it will be approximately 2 years from application to knowing the timeline and costs for connection and gaining a 'place in the queue'.)

21. Do you agree with our views on the process under which DNOs apply to the ESO on behalf of relevant small and medium EG which impacts on or uses the transmission system, including that (under TMO4):

    i.   DNOs should be able to request RDC via application windows to allow them to continue to make offers to EG inter-window; and
    ii. resulting offers should be for firm access until relevant EG has reached Gate 2 (at which point they can request advancement and an earlier non-firm connection date)?

We mostly agree with this although we would welcome further detailed thought on this as we are not sure how the ESO would manage advancement requests for multiple EG projects down to 1MW.

22. Do you agree that directly connected demand should be included within TMO4 and that the benefits and challenges are broadly similar as for directly connected generation?

Yes, as more and more projects will start to consider both demand and generation as part of the same scheme then it is important that they are not treated inherently differently in the systems and processes.

23. Do you agree that TMO1 to TMO3 would require a separate offshore process, and that this would result in material disbenefits?

No comment

24. Do you agree that TMO4 is the most aligned to the direction of travel for offshore projects? If not, why?

No comment

25. Other than the Letter of Authority differences are there any other TMAs which have specific offshore considerations?

No comment

26. Do you agree with our views on network competition in the context of connections reform, including that TMO4 is the option which is most aligned with network competition as it includes the most design time at an early stage in the end-to-end process?

As there are significant opportunities for changes in the contracted background at Gate 1 then a coordinated design process here using the windows approach in TMO4 could easily be compared to 'herding cats'. If the window was delayed until Gate 2 (TMO3) when real projects with real connection locations and technologies have been identified, then this is where a coordinated design could be undertaken and network competition assets identified. Or they could be identified earlier following Gate 1 and the CSNP if it is evidently clear that network reinforcements are crucial to a variety of projects coming forward and therefore anticipatory investment should be encouraged.

27. Do you agree with our initial recommendation related to each of the TMAs within this chapter? If so, why? If not, what would you change and why?

We particularly like the ideas of "*collaboratively work with stakeholders to understand and agree the most suitable connection solution e.g. where minor changes to the project could avoid triggering additional reinforcement, etc.*"

TMA Q – at the moment all the risk sits with developers and there are not enough contractual guarantees. ESO / TOs and DNOs can be late delivering works; having a significant impact on connecting parties. We would like the ESO / Ofgem to consider ways of providing a contractual obligation for ESO / TO / DNO to provide a firm connection date and cost which can include some contingency but is not effectively a blank cheque.

TMA R – could a 'use it or share it' policy be implemented here? Identifying locations where entities hold capacity but use it intermittently and make that capacity available on a non-firm or shared basis? Or is this effectively done through connect and management arrangements anyway?

28. Do you agree with our current views in respect of the implementation period?

We understand that implementation of a reform like this will impact on codes and licences, but we would encourage Ofgem, Government and ESO to really push towards clear and efficient decision making and clear dissemination to all parties to ensure that the reforms are implemented carefully but as quickly as possible.

29. Do you agree with our current views in respect of transitional arrangements? What are your views on how and when we should transition to TMO4?

We note your comment *"we currently estimate that it may take 5 years or more to insert queue management milestones and clauses under CMP376 (if approved and implemented) into all existing connections contracts, if those clauses are only added to new contracts or to contracts that apply for modification."* And we believe that action needs to be taken to push through this reform to deal with any projects that can be identified as 'stalled'. We also would support a transitional arrangement where the changes that can be enacted quickly are put in place whilst those that required additional consultation, design and code changes are enacted when they can be. But that at all stages, the process is communicated to the industry in a clear and concise manner (not just through CMP documentation!)

30. What further action could Government and/or Ofgem take to support connections reform and reduce connection timescales, including in areas outside of connections process reform?

We welcome the recent government decision to adjust Ofgem's mandate to focus on meeting net zero. This, at the end of the day will ultimately protect the consumer and humanity and needs to be our most pressing goal. To achieve this, we need clear decision making. We need a clear plan for investment in our transmission network to release capacity where we know it will be needed. There are very few parts of the network where if capacity was released that it would not be snapped up for the connection of generation, demand, storage or all three.

Conclusions

This connections reform consultation has touched on a wide variety of issues so we think it is important to draw out the most important aspects, in our opinion, here.

A clear view of the needs of the whole system

This, above anything, will ensure that the market can respond to invest in the right projects in the right places with the right technology. This will need significant effort across the whole T&D community to ensure data is shared in an efficient and timely way so that it is clear what is connected / contracted onto the 'whole system'. It will also need clear targets at a national and regional level that coordinates with policy and planning so that DNOs, TOs and ESO/FSO can plan, build and operate a network that delivers the capacity and security required. Then developers will be able to plan projects and apply for connections that are both efficient and cost effective.

Anticipatory Investment

We believe that a clear plan at national and regional level will need to be backed by an ability to build the required infrastructure quickly. Where there are connection dates out to late 2030's with multiple projects waiting for the same enabling and wider works then we should find ways to accelerate these works and not rely on queue management and connect and manage to release capacity. We need to connect, manage and BUILD.

Unlocking local capacity

We believe that there is still significant opportunity for unlocking of capacity on the distribution network that will go a long way to supporting net zero targets and locating generation close to demand – where it will reduce losses on the system and the overall impact on the system. This does not mean that these projects have absolutely no impact on the transmission system but it should be less than large transmission located remotely. Despite this, embedded generators are often 'left behind' when it comes to the connections queue. Projects can wait up to 2 years to get a full connection offer including the project progression element and they can also see large and uncertain connection costs despite being located close to the network that has local capacity. This disparity needs to be addressed.

Clear but urgent decision making

We understand that implementation of a reform like this will impact on codes and licences, but we would encourage Ofgem, Government and ESO to really push towards clear and efficient decision making and clear dissemination to all parties to ensure that the reforms are implemented carefully but as quickly as possible. This will reduce the impact of uncertainty and the increased risks and therefore costs that this brings and will ensure that we have the best chance of meeting our net zero targets.

Yours faithfully,

Rachel Hodges, CEng, FIET.

Grid Connections Development Manager

Peel Cubico Renewables