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Dear NGESO Connections Reform Team

Response to NGESO's Consultation on Connection Reforms, June 2023

Cero Generation, an organisation under the ownership of the Green Investment Group and ultimately the Macquarie Group, is welcomes the opportunity to share our views on the proposed connection reforms and as well as provide responses to the Appendix 7 questions.

Cero Generation, in collaboration with our partner Enso Energy (EGHL), has made a steadfast commitment to developing a substantial portfolio of renewable energy and storage projects, with a total capacity of approximately 10 GW, connecting at the transmission level in England and Wales. We take pride in being the pioneers of the UK's first transmission-connected solar plant, and we are also currently working on a 50 MW battery storage project at the same connection point. Our future projects span from 2024 to 2030 and beyond, and we are fully committed to ensuring their successful delivery despite the numerous challenges posed by the existing connections and planning regimes.

We appreciate the opportunity to share our expertise and provide valuable input as we collectively navigate the path toward a more efficient electricity connection process. Our aim is to contribute to the development of reforms that promote the successful implementation of renewable energy and storage projects, thereby driving the transition to a more sustainable and decarbonized energy future.

General Observations on Delivering Renewable Generation and Battery Storage Projects

Cero Generation, in collaboration with our partner Enso Energy, has fostered a robust working relationship with National Grid ESO (NGESO) and National Grid Transmission (NGET). Throughout the project lifecycle, we consistently strive to identify practical solutions to address the numerous challenges we encounter. As pioneers in successfully completing the transmission connection process for a PV plant, we appreciate the chance to share the knowledge we have gained. Below, we provide a brief overview of some of the key challenges that we believe are impeding the smooth progress of projects:

1. **Uncertainty for Investors -** Uncertainty is a significant concern for investors, especially for smaller solar and BESS connections, where the margins are small and therefore risk appetite is low. The new requirements for significant early commitments without clear information regarding connection dates, non-firm connection levels, or final costs will likely lead to viable projects falling away.

2. **Planning and Land Issues** – While planning decisions are beyond the control of NGESO, they can fluctuate and are often unpredictable in both their timing and results. To address this, there should be a fast-track process specifically for renewable projects, accompanied by clear guidelines for Local Planning Authorities. Another point of contention arises from competitors who are also landowners near network connection sites - for instance, companies that own decommissioned power stations. It can take a long time to obtain easements from these competitors which can jeopardise connection timescales.

3. **Offered Connection Solutions -** When offering a connection point NGET typically do a high level assessment of the connection point which, in some cases, results in offered connection points that are associated with complex due issues such as access arrangements, no space in the existing site, existing material and equipment at the offered location leading to high one-off works to move etc. In other cases, NGET later realises that the offered point of connection is not feasible and moves the point of connection. It is important to address these challenges and streamline the process to minimize cost, provide greater certainty, and avoid unnecessary delays for project development.

4. **Connection Availability –** In the standard connection contract, NGESO includes Appendix D, which outlines the possible allowed outage conditions for the connection. However, Appendix D does not provide any information regarding the nature and frequency of the listed outage conditions. This lack of transparency poses an investment risk for projects. To mitigate this risk, we recommend that NGESO adopts a curtailment report similar to those issued by DNOs.

5. **DNO Works triggered by transmission connections –** One area of concern in the NGESO BCA (Bilateral Connection Agreement) with a 'User' is the milestone known as 'third party works'. Within our project portfolio, we are witnessing an increasing number of projects that trigger third party works, as determined by DNOs. However, it seems that DNOs have the freedom to apply their own criteria for determining when their network requires upgrades due to the Transmission User's connection. In our perspective, DNOs are imposing criteria that extend well beyond the minimum requirements for network security. They report necessary upgrades even if the impact of the User on their network is minimal. Furthermore, there is a lack of engagement from many DNOs on this issue. We anticipate that third party works will soon become a significant obstacle for transmission-connected projects, and we strongly urge OFGEM to intervene positively in order to address and resolve this matter. For further description and more detailed information on this topic, please refer to pages 5-6.

6. **Lack of capacity and capability within network companies –** Currently, network companies are facing a challenge in terms of their capacity and capability to efficiently handle the high volume of grid connections, along with the associated commercial and technical complexities. It is worth noting that many instances of missed milestones by developers can be attributed, either partially or entirely, to the shortcomings of the network companies themselves. This issue is expected to have a substantial impact on queue management in the future and should be taken into consideration to ensure that projects are not unfairly penalised for problems caused by network operators or owners.

7. **Supply chain issues –** With the considerable scale of high-voltage electricity connection and reinforcement projects in the UK and worldwide, the industry is facing significant challenges related to limited manufacturing capacity, global shortages of raw materials, and supply chain issues concerning main plant/equipment and delivery resources. These issues are rapidly becoming a major concern. In particular, lead times for certain transformers have now extended well beyond two years, with costs doubling compared to two years ago. At the transmission level, National Grid Electricity Transmission (NGET) insistence on users providing type registered equipment through User Self Build Agreements is severely limiting supply options for users. This is primarily due to NGET's lack of capacity to register additional suppliers and their reluctance to accept fully compliant equipment that meets the International Electrotechnical Commission (IEC) specifications. Addressing this issue would result in the opening of multiple supplier routes, leading to reduced costs for consumers and shorter lead times, ultimately enabling faster electricity connections.

In summary, our general view is that while the current connection queue is long, we strongly advise caution as there is a real risk of unintentionally excluding viable, smaller solar and BESS projects. We believe that NGESO should manage the connection process flexibly and pragmatically, rather than relying solely on rigid criteria that may overlook the complexities of the development landscape.

Moreover, as an increasing number of projects are implemented without subsidies, investor confidence becomes crucial for the successful delivery of net-zero initiatives. Making significant changes to the perceived connection risk profile could seriously undermine this confidence, leading to uncertainty and inaction. This, in turn, can create a cycle where NGESO hesitates to set a connection date, and developers withhold investment, resulting in missed milestones. Noting that while investors want earlier connection dates, certainty on the date will often be important that the actual date.

Furthermore, many projects face setbacks due to delays caused by National Grid Electricity Transmission (NGET) or NGESO. Late changes in design or connection points, uncertainty about site strategies or grid parks, delays in appointing Connection Engineers, lost contract paperwork, alterations in storage modelling assumptions, and failure to provide NG data to Distribution Network Operators (DNOs) for third-party works evaluations, all significantly affect a project's ability to progress.

Finally, in the consultation, it was noticed that European countries, with the exception of Ireland, were not included in the international case studies. CERO has experience in many of these markets and happy to share these in further stages of the consultation.

Specific Consultation Question Responses

3. Foundational Design Options

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?

Yes, agreed the design objectives make sense are all relevant for this process.

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?

Yes, agreed as capacity auctions would lead to increased investor uncertainty.

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?

The present process involves developers identifying suitable land and then applying for a connection, securing a spot in the queue. However, adopting a centralized deployment approach might lead to concentrated land hotspots, where developers end up holding on to land parcels while waiting for published capacity. This would shift the bottleneck from securing a spot in the queue to obtaining a place on the map. It is crucial to conduct a more comprehensive analysis and thoughtful consideration before proceeding with a centralised model.

4. Pre-Application Stage

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

Yes.

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?

Rejecting this approach, as it would only increase administrative burdens for all parties involved, and its presumed purpose of discouraging applications seems unlikely to be achieved. Instead, a more effective solution would involve providing developers with easier access to the necessary information, enabling them to better assess potential connections before submitting applications.

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.

Yes. Another useful addition would be include information on potential for the connection to trigger third party works with the local DNO.

5. Key Target Model Add-ons

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

Yes this makes sense, agreed.

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?

Agreed.

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

Where priority projects are accelerated, if this is to the detriment of other projects being decelerated, then these projects will need compensating where that is through no fault of their own.

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

Yes, agreed that queue management should stay within the remit of CMP376 and managed accordingly. However, PQM would be hugely detrimental to investor confidence as it would be likely perceived that project could lose its connection date at any time. Therefore only RQM options should be progressed.

6. Target Model Options

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

No, we could only support TMO1 as currently presented, with TMO 2-4 all being detrimental to the market and investor confidence and ultimately the overall energy mix.

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?

Yes, the TMO4 option should be adapted to either remove the gate 1 window or should reduce the window from yearly to quarterly.

13. Are there any important TMOs we have missed?

None that we can identify.

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?

We understand the rationale behind desiring evidence of a developer's commitment to a project through the submission of planning consents. However, in reality, this approach will primarily benefit larger projects and companies that are more willing to assume development risks. In other words, submitting planning consent involves a significant project commitment, and without certainty regarding the grid connection, it becomes challenging for the project to justify such an undertaking. Furthermore, engaging in discussions with Planning Authorities before submissions is difficult when there is no firm connection date available.

A more sensible milestone would entail the company's commitment to target the Planning Consent Application to meet the provisional connection date. Additionally, assuring that the submission will be prepared and sent within approximately 6 months (subject to further discussion with planners on what is achievable) after receiving the confirmed connection date following gate 2.

7. Recommended TMO

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

Our viewpoint differs from the current proposal. We would, however support, a more frequent occurrence of the TMO4 gate 1 window, preferably on a quarterly basis. The current issue, with TMO4, lies in the lack of a firm connection date or a definite position in the queue, even within the specified windows. This introduces significant risk and uncertainty for the project and investors. Consequently, we believe that the preferred choice should be TMO1.

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

We do not agree with the design criteria assessment of the four TMOs. The assessment does not sufficiently align with the objectives of connection reform, as it overlooks the direct impact on customers. This aspect is vital as it can significantly influence their business models and overall viability as renewable energy connection developers. Moreover, the assessment appears to heavily favour TMO4 without providing satisfactory justification or clear rationale as to why it should score higher than the other TMOs. It is essential to have a transparent and evidence-based assessment that considers all relevant factors to ensure a fair evaluation of the options.

Additionally, a flaw in the whole process is that the TMOs have not been assessed with current connections in mind. This oversight is significant, considering that the majority of the impact of connection reforms will affect projects already in the queue.

In conclusion, the design criteria assessment of the four TMOs does not adequately address the connection reform objectives and lacks justification for favouring TMO4. It is crucial to reassess the criteria and ensure a comprehensive evaluation that takes into account the direct impact on customers and provides clear reasoning for the scoring of each TMO.

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

While we understand the importance of coordinated network design, we believe that this can be achieved across all Target Model Options (TMOs) without introducing the delays associated with the batching process of TMO4. Coordinated design can be implemented without compromising efficiency and timeliness.

The concepts of "First Ready/First Served" and "use it or lose it" may raise concerns for investors. These approaches introduce uncertainty and risk, which can impact the value of connections from a return on investment perspective. Investors need clarity and certainty regarding connection dates to make informed decisions.

The proposed timeframes of 12+9 months to receive stage 1 connection offers are too long. In a competitive market, developers require connection offers and dates sooner to secure land and move forward with their projects. The lengthy wait times can hinder development and investment opportunities and ultimately delay the transition to net zero.

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?

Firm connection date offered ahead of planning consent as the TMOs are currently presented, only TMO1 offers a firm connection date before the requirement to have submitted Planning Consent. This means that developers would need to invest in submitting Planning Consent without knowing a firm date, which considerably changes the risk profiles of the projects.

A two-stage gate approach similar to TMO2 or TMO3 could be more appropriate if the firm connection date is given ahead of the requirement to submit Planning Consent which would require modifying the requirement for Planning Consent.

Amending RQM+ If TMO2 or TMO3 were chosen, the RQM+ process would need to be amended to RQM or a hybrid RQM/RQM+ approach on a case-by-case basis. This would ensure that projects that have invested but do not meet the "priority" criteria are not unfairly treated.

8. Key Customer and Technology Type Adjustments

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

As developers of generation and storage projects we don't have a strong view on this area beyond there needs to be closer integration between DNO and TSO at all levels. In particular we want to address the point raised about the consideration of including a Distribution Impact Assessment or an improved Third Party Works process in the TMO, which is currently being discussed in CMP328. We firmly believe that Third Party Works pose a significant risk to renewable generation and storage connecting at the Transmission level, and CMP328's current approach does not adequately address this concern. We have provided a more extensive discussion on this matter in our response to Q30.

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 agree that this issue requires cautious management. DNOs, being licensed entities, also operate as private for-profit entities. Therefore, it is crucial to exercise caution to ensure they do not diminish capacity or increase the risk of triggering works for transmission-connected generation and storage projects.

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 that impact on or use 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 interwindow; 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)?*

No view, beyond the response in Q20.

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?

We share the viewpoint that the process should encompass directly connected demand. However, we believe it should not be included in TMO4. Instead, prioritizing simplification and maintaining a consistent approach is of utmost importance.

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

No view.

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

No view.

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

No view.

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?

We find it challenging to comprehend the rationale behind how TMO4 fosters increased network competition merely by providing more design time at an early stage in the end-to-end process. As noted in the previous questions we are more concerned that TMO4 will decrease competition.

9. Supplementary Target Model Add-ons

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?

TMA H – Agreed the fees to need to be reviewed as in the present system the amount of work required don't seem to relate to the actual fees charged.

TMA I – Criteria for ESO to reject an application. In principle, we are in agreement, however, it is important to have clear and transparent data accessible to developers regarding the rejection criteria before they submit their applications.

TMA J – Optionality provided in an offer. Agreed, we would fully support more early engagement in optioneering connection solutions.

TMA K – Capacity products in an offer. Agree

TMA M – Timeframe for updating contracts. We believe that timeframes for NGESO to implement Agreements to Vary should be formalised in line with mod app timescales. Currently they are not prioritised even though they are normally driven by National Grid and lead to the same uncertainty level for developers.

TMA O – Secondary processes. Agreed

TMA P – Dual Track Process. Agreed

TMA Q – Financial compensation. We hold the belief that compensation for delays or additional costs incurred due to NGESO or TO should be incorporated into connection reforms. By doing so, it will enhance investor confidence, furthermore such compensation can be addressed by NGESO or TOs through their regulatory regimes, provided they can demonstrate that these costs were unforeseen and justified, this will help to drive efficiency.

TMA S – Fast-track dispute process. We agree, the fast-track dispute process is an essential component of the TMOs to ensure efficient resolution of disputes related to key process stages. This also needs to include clear escalation and arbitration, with an impartial view around missed milestones.

10. Detailed Design, Implementation and Transitional Arrangements

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

In principle, the logical steps of the implementation plan seem reasonable; however, the actual durations will be contingent upon the final proposals.

On a broader note, we express strong reservations about whether NGESO and TOs currently possess the capacity to implement these reforms simultaneously with their ongoing processes. Their existing capacity to handle customer connections effectively is insufficient, and while we acknowledge the need for reform to address this issue, the potential negative consequences must be carefully managed, mitigated, and planned for. It is crucial to increase resources promptly to handle these challenges effectively.

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?

This question appears to assume TMO4 as the definitive outcome which we don't agree with.

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?

The current process for Third-Party Works in relation to Transmission connections in England and Wales presents significant challenges and risks for transmission connected user. These challenges include a lack of adequate regulation, inconsistency among DNOs in their response and engagement, variations in technical

approaches, and unclear charging methodologies. These issues not only slow down the ability of renewables to connect at Transmission level but also pose a risk of sterilizing Transmission sites for new connections.

The engagement of DNOs in the Third-Party Works process lacks consistency, with some refusing to engage for extended periods while others take a more proactive approach. There is no clear incentive for DNOs to engage effectively in this process. Additionally, there are no regulated response timescales or processes for DNOs to adhere to, leading to delays and uncertainty for Transmission Users. Some DNOs even require Transmission Users to sign quasi connection agreements with them, which is not appropriate considering the User's connection is with the Transmission network.

The technical trigger for Third-Party Works lacks a standard approach. While Cero and our partner Enso Energy argue that it should be triggered based on minimum security of supply standards, some DNOs argue for a broader trigger that encompasses any detrimental impact on their existing customers. The lack of clarity on this matter creates confusion and hampers the progress of Transmission connections. Similarly, there is inconsistency in how DNOs model Transmission-connected storage, further adding to the complexities.

The charging methodology for Third-Party Works is also unclear, with some DNOs attempting to pass significant reinforcement costs onto Transmission customers triggered by relatively small Transmission connections. While some DNOs accept the apportionment of reinforcement costs, there is no consistency across the board.

Although the CUSC modification CMP328 aims to shift the responsibility for coordinating the assessment of works to NGESO, this will not fully address the underlying issues. The ultimate costs of Third-Party Works will still fall back on the Transmission-connected users, and without further regulation in place, NGESO may not have the necessary incentives to challenge DNOs both technically and commercially. This could potentially lead to more delays and hinder Users' ability to directly challenge the DNOs.

It is crucial to address these issues urgently. Changes to the relevant Codes and additional regulations are needed to provide clarity, consistency, and fairness in the Third-Party Works process. This will ensure that Transmission sites are not sterilized and that customers have a smoother and more predictable pathway for progressing their connections.

End of Specific Consultation Question Responses

Cero Generation appreciates the opportunity to provide further clarification on the points raised in the letter and engage in discussions related to connection reforms. Cero Generation, in collaboration with Enso Energy, is committed to being proactive in relevant working groups and consultations to contribute to the ongoing discussions and developments.

Please feel free to contact us using the provided details if you would like Cero Generation to participate further or if you require any additional information or input. We are eager to collaborate and contribute to the efforts aimed at improving the connection process and promoting the successful development and delivery of renewable energy projects.

Yours sincerely,

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