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Dear NGESO Connections Reform Team,

Response to NGESO's Consultation on Connection Reform June 2023

Enso Energy are pleased to be able to submit our views on the proposed connection reforms, and particularly respond to the consultation questions in Appendix 7 posed in your June 2023 consultation.

Enso Energy have invested in a large (~10GW) portfolio of renewable energy and storage connecting at Transmission level in England Wales. The first of these directly connected Transmission connections was recently completed as a UK first at NGET's Iron Acton substation near Bristol, where initially 50MW of renewable solar PV generation is now feeding into the national grid. Future projects in the portfolio extend from 2024 to 2030 and beyond, and Enso has every intention of making all those projects deliverable, despite the many challenges that the current connections and planning regimes provide.

Enso Energy is in a joint venture with Cero Generation (who are owned by Green Investment Group and ultimately Macquarie Group) to enable the funding and ultimate delivery of the portfolio.

We appreciate the opportunity to input our views as we collectively strive 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 net zero energy future.

General Observations on Delivering Renewable Generation and Storage Projects

Having spent several decades in National Grid at the forefront of controlling the NGET network and driving net zero, and more recently working for a Renewable Connection customer (Enso Energy), I can see that there are many blockers to delivering net zero and particularly in getting the required renewable generation and flexibility connected onto the electricity networks at both Transmission and Distribution level. The reasons behind these blockers vary from long-standing, deep-rooted industry practice and framework, which will require a longer-term view, through to short term issues such as supply of materials and resources. Some of the reasons will be directly within NGESO's control or area of strong influence, such as code mods etc, others such as Local Planning reform or manufacturer capacity may not be but need factoring into


decision making across the whole reform approach i.e., it is no good unblocking one log jam to find another one just behind it.

I group the main reasons for renewable generation projects delaying as:

1. **Uncertainty for Investors** – particularly smaller or risk averse investors where a high level of commitment on procurement and development is required without certainty on connection dates, levels of non-firm connections or unknown final costs. There is a lack of understanding in the networks about typical investor requirements to commit spend on a project and this can be reflected in unrealistic milestones for the connections works. Current process and reforms potentially favour the larger organisations and risk driving out smaller investors.
2. **Planning and Land issues** – outside of NGENO's scope but Planning Decisions can bend with the wind, are difficult to predict on timescales and outcome. There should be a renewable fast track process with specific guidelines for Local Planning Authorities. Competitors who are also landowners around network connection sites e.g., old power station companies, can refuse cable easements to the network connection point and are effectively sterilising sites for their own connections.
3. **DNO Works triggered by Transmission Connections (Third Party Works)** – this is effectively Statement of Works process in reverse where Transmission connections impact the Distribution network. This process is not currently regulated in detail and is a major risk to many transmission connection projects if not addressed. This is discussed in further detail in response to Q30.
4. **Lack of capacity and capability within network companies** – Without going into the wider reasons behind a national lack of skilled engineering resource or how the network companies have incentivised themselves, or been incentivised on controlling headcount and costs, the fact is that they do not currently have the capacity or capability to effectively deal with the volume of, and commercial and technical complexities of current grid connections. Many missed milestones by developers can wholly or in part be attributable to the network companies themselves. This will be a significant issue in queue management going forward and must be taken into consideration to ensure that connections are not unfairly penalised for delays caused by the network companies or NGENO.
5. **Supply chain issues** – given the scale of HV electricity connection and reinforcement works in the UK and worldwide, limited manufacturer capacity and worldwide shortages of raw materials, supply chain issues of main plant/equipment and delivery resources are becoming a major issue. Certain transformer lead times are well over two years and double costs from 2 years ago. At Transmission level, TO insistence on Users supplying type registered equipment under User Self Build Agreements is crippling supply options for Users when there is strong TO resistance to accept fully compliant IEC spec equipment. This would open multiple supplier routes driving down overall costs for consumer and reducing lead times, thus enabling faster connections.
6. **Too many connections in the pipeline** – whilst this is an output from the way the sector has evolved around the current connection process, it is evident that not all the connections in the queue will be deliverable and many at the back end just won't be needed at all. So yes, connections reforms are needed, and connections will need to leave the queue as it is exacerbating the issues above, however we must make sure the pendulum does not swing to far the other way, reducing investor

confidence in the short and medium term. Longer term market forces may mean that the queue slows down naturally but we do not want to lose credible developers and connections just for missing a milestone that may not have been reasonable in the first place.

So yes, connections reforms are definitely needed, and we agree with the objectives of:



- ▶ Deliver value to consumers
- ▶ Support the delivery of Net Zero and align with the British Energy Security Strategy
- ▶ Deliver improvement to Customer Experience & Engagement
- ▶ Deliver a Whole System Approach to Transmission Connections [ie fully factoring in Distribution, and perhaps in time other vectors such as hydrogen]
- ▶ Enable a process that efficiently advances the projects that are ready to connect
- ▶ Embrace the diversity and complexity of Connections within an evolving Energy System
- ▶ Be future proof [be adaptable following periodic review]

Our area of concern though centres around bullet 5 “Enable a process that efficiently advances the projects that are ready to connect”. Whilst we agree with the overall objective and sentiment, the concern is that this will unfairly and disproportionately impact those projects that are not quite ready to connect. A delay to a connection date, or even a lack of certainty on a connection date will severely impact investor confidence and thus the investment needed to then hit those connection dates. This creates a vicious circle of uncertainty; NG will not commit to a connection date because developers are not investing to hit milestones, developers will not invest to hit milestones because the connection date is not fixed. Basically, uncertainty leads to lack of confidence leads to delays. A delay of even 1 year to a project can have significant financial impact on a connections commercial viability and impact investor decision making on retaining or selling connections thus creating even more uncertainty and churn in the queue.

At a more practical level, there are many reasons why a project may not be ready beyond lack of investor confidence. Planning and land issues generally sit squarely with the project developer (however note many land issues and delays in England and Wales are caused by difficulties engaging with National Grid over easements through National Grid non-operational land immediately surrounding the substations).

However, many projects are moved backwards due to frustrating delays caused by NGET or NGESO themselves. Late design changes or point of connection changes, uncertainty over site strategies or grid parks, delays even appointing Connection Engineers to projects, lost contract documentation, changes to storage modelling assumptions, lack of provision of NG data to DNO’s for third party works assessments etc

all have a knock-on effect to developers trying to secure land, planning consent and investment which ultimately leads to the delays. So, whilst on paper it may look like a developer has been late to say secure Planning Consent or procure a transformer for example, this in my experience can often be traced back to a delay within National Grid earlier in the process.

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, Enso generally agree and cannot identify any reasonable additional variations that should have been considered.

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, Enso fully agree due to the detrimental effect this would have on the investment case.

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?

Yes, in principle but agree it needs further consideration. Developers find land then apply for a connection and secure a place in the queue. A centralised deployment approach could create land hotspots with developers instead sitting on land parcels in anticipation of published capacity, moving the bottleneck from a place in the queue to a place on the map. This needs further detailed analysis and consideration before proceeding.

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?

No, however it does depend on two factors: firstly, it depends on the quality of data available to applicants from the outset. If the data is not available, applications may go no further than the initial pre-app discussion or optioneering and at that point agree that the connection is just not viable. Secondly it depends

how much the nominal fee is. A small “admin” fee would be palatable but would introduce more administration burden for all parties when managing the current securities and payments process is problematic.

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. In the interests of delivering a whole system approach to transmission connections, the other data that would be useful (but may not be available from the NGENO directly) is data from DNOs on the potential for third party works being triggered and the extent of these works. At the moment this data is only available from the DNOs directly and is not transparent or consistently applied by each DNO.

5. Key Target Model Add-ons

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

Yes.

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?

We agree this needs doing and understand the need to wait until the impact of the 5-point plan is known although this should not unduly delay the review.

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, PQM creates too much investor uncertainty. Regarding RQM/RQM+, a hybrid approach should be considered on a case-by-case basis as the relative “priority” of priority projects will vary and PQM+ could have similar consequences to PQM in the way that potential for projects with inherently quicker delivery timetables to be perpetually prioritised and this inadvertently leading to a rebalance of the technology mix.

More generally on queue management, further to my general points on page 3, many of the delay’s developers are experiencing can be wholly or partly attributable back to National Grid (NGET or NGENO). The current milestone proposals are very biased towards developer requirements rather than National Grid ones. We need to see clear milestone requirements on National Grid included. These could include assigning adequate resources to a project, providing Point of Connection details, returning Agreement to Vary documentation etc.

Also, the queue should not become a race to the front at all costs. This might include inflating payments to secure land agreements faster, inappropriate pressure on Local Authorities or landowners, compromising

build quality or safety, inflating costs for suppliers and contractors which all has an overall detrimental impact to the cost of delivering the connections required to achieve net zero.

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. Enso Energy could only support TMO1 as currently presented.

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?

In TMO2 and TMO3, only providing a provisional connection date at gate 1 will not provide enough investor confidence to progress costly land and then planning consent applications, particularly for DCO projects. This of course depends on individual investor risk appetite, but our view is that without a confirmed date, the economic business case assessments to proceed beyond our early internal gates would not be possible.

TMO4 gate 1 window should be quarterly and not annually give the need to progress opportunities at pace.

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?

Yes, it is too early for reasons outlined in Q12. We understand the reasoning behind wanting to see evidence of developer's commitment to projects by having had to submit planning consents however the reality is this will only favour larger projects and companies more willing to absorb development risk. Also, it will be difficult to discuss projects with Planning Authorities ahead of submissions without knowing a firm date. A more reasonable milestone would be a commitment from the company that a Planning Consent Application is on target to meet the provisional connection date and that the submission will be prepared and submitted within say 6 (would need further discussion with planners on what is achievable) months of the confirmed connection date being received post gate 2.

7. Recommended TMO

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

No. TMO4 gate 1 window should be more frequent (preferably quarterly). More importantly a lack of firm connection date or place in the queue, even within windows, leads to too much risk and investor uncertainty.

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

No. the design criteria do not match closely enough to the connection reform objectives. There is no direct reference to customer impact which is far wider than their “customer experience” but could fundamentally change their business models and ultimate viability as renewable energy connection developers. The assessment seems overly weighted towards favouring TMO4 without any real justification or evident rationale as to why it should score higher than some of the other TMO’s.

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

With regards to the benefits, whilst we agree with the need for co-ordinated network design, this can be achieved across all TMO’s without introducing the delays that the batching of TMO4 will introduce.

The concepts talked about of “First Ready/ First Served” and “use it or lose it” are a red flag to investors who need to know what they are buying. The value of each connection is heavily tied to its delivery date from a ROI perspective and so it will be very difficult for investors to accept such risk and uncertainty.

As previously mentioned, periods of potentially 12+9 months to receive stage 1 connection offers is far too long. If a developer has land identified, in a competitive marketplace, a connection offer and a date is needed sooner than those timescales to then be able to move and secure that land.

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?

As the TMO’s are currently presented, only TMO1 has a firm connection date offered ahead of the requirement to have submitted Planning Consent. As detailed in our response to Q14, the investment required to submit Planning Consent ahead of knowing a firm date is unrealistic. TMO1 is also the only option not to have RQM+ which as it stands would be detrimental for the reasons given in response to Q10.

However, a 2-stage gate approach akin to TMO2 or 3 could be more appropriate provided that the firm connection date is given ahead of the requirement to submit Planning Consent by modifying that requirement as detailed in response to Q 14. TMO2 or 3 would also need RQM+ amended to RQM or at least a hybrid RQM/RQM+ case by case basis so as not to unfairly treat those projects that have invested but do not meet the “priority” criteria.

8. Key Customer and Technology Type Adjustments

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

Yes. However, we strongly note the need to address the comment “We have also not considered whether the TMO should include a Distribution Impact Assessment or improved Third Party Works process, as this is currently being considered by CMP328”. We consider Third Party Works to be one of the biggest risks to renewable generation and storage connecting at Transmission level and that CMP328 does not adequately address the issue. We discuss this in greater detail in our response to Q30.

We also note the increasing blurring between generation and demand connections with increasing storage connecting to the system and believe there should be a consistent process for all.

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 careful 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.

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 agree that directly connected demand should be included in a process, although not TMO4, as simplification and consistency of approach is important.

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 cannot understand the rationale as to how TMO4 supports increasing network competition just by it allowing more design time at an early stage in the end-to-end process. We believe TMO4 will in fact 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 – Structure and Value of Fees. Whilst we agree that the fee structure should be reviewed, we feel a more comprehensive review of fees and securities will need to be undertaken if some of these connection reforms are implemented. At the moment there, National Grid is secured against costs incurred on the connection. There are no securities required the other way. As the balance of risk potentially shifts, there will increasingly be a need for investment at risk from developers and so one way to mitigate this risk could be for National Grid to provide securities in return, in case of National Grid missing milestones or projects being moved backwards to accommodate priority projects.

TMA I – Criteria for ESO to reject an application. We agree in principle however there must be clear transparent data available on what the rejection criteria are to a developer ahead of them submitting the application. If there are technology types or geographic areas that will automatically be rejected, then make this clear.

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

TMA K – Capacity products in an offer. Fully agree.

TMA M – Timeframe for updating contracts. We believe that timeframes for NGENSO 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. Enso believe that compensation for NGENSO or TO delays or additional costs should be considered as part of connection reforms. This will lead to greater investor confidence for developers and could be mitigated by NGENSO or TOs through their regulatory regimes where they can demonstrate those costs were unforeseen, justified, and efficient.

TMA S – Fast-track dispute process. Fully agree. There also needs to be clear escalation and arbitration process and all cases need to be viewed impartially and fairly due to earlier points around the reasons behind 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 appear sound however the durations will depend upon the final proposals.

On a broader point, we strongly question whether NGEN and TOs have the current capacity to deliver these reforms in parallel to delivering the current processes. They do not have current capacity to deal with customer connections effectively, and whilst we agree this increases the need for reform, the detrimental impact in doing so needs to be managed and mitigated and planned ahead by increasing resources now.

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 seems to pre-empt TMO4 as the final outcome which we do not agree with and so we cannot support these transitional arrangements.

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?

Enso Energy experience is that the current **Third-Party Works** process is a significant risk to all Transmission connections.

For customers connecting at Transmission level in England and Wales, NGET requires their customers, via the Construction Agreement be responsible for carrying out or procuring that any Third-Party Works are carried out and shall carry them out or procure that they are carried out in accordance with the timescales specified in the Construction Programme.

Third Party Works is any work required on a Distribution (or other connectees) network as a result of the Transmission connection. This process is effectively a Statement of Works process but in reverse and is currently not adequately regulated, causing a major risk to customers connecting into Transmission, risks sterilising Transmission sites for new connections and is slowing down the ability of renewables to connect in at Transmission level.

Lack of a regulated process means no consistency from DNO's in how they respond to Third Party Works requests from Transmission customers. This leads to variation in the way they:

1. **Engage** – some DNO's refuse to engage at all, sometimes for years, whilst others are more proactive. There is no "Customer Incentive" for them.
2. **Respond**– unlike a Connection Application to their own networks, DNOs have no regulated response timescales or process to respond. Some DNO's want the Transmission customer to complete a Distribution Connection application for the Third-Party Works. This is not appropriate given the connection is with the Transmission network. Other DNOs may just return a non-binding email and reserve the right to change their view on whether Third Party Works is required later.
3. **Technical Approach** - There is no standard on the technical trigger for Third Party Works. Enso have argued that it should only be triggered to meet minimum of security of supply standards. Some DNOs have argued that it should be triggered whenever there is any detrimental impact on their existing customers i.e., their customers with Active Network Management could be constrained off more by the addition of the Transmission connected generation. Transmission connections cannot

have DNO Active Network Management Schemes and NGENSO have stated they do not want to administer Transmission connected Network Management Schemes on behalf of the DNO. A long-term approach to whole system management would resolve this issue but unlikely achievable in the required timescales. In the interim, clear direction to DNO's on the technical trigger for Third Party Works is required. There is also no consistency on the way Transmission connected storage is modelled by DNOs.

4. **Charging methodology** - There is no clear methodology. Some DNO's are trying to load significant (£20m+) full reinforcement works on a Transmission connection that triggers the DNO reinforcement. So, if a relatively small 50MW Transmission connection triggers a DNO reinforcement by adding a few percentages to the fault levels or load on the DNO network, the DNO is asking the Transmission customer to pay the full reinforcement costs. Some DNOs are now accepting that apportionment of reinforcement costs is appropriate, and Enso have successfully reached agreement with some but there is no consistency.

CUSC modification CMP328 aims to move responsibility for coordinating the assessment of works to NGENSO. However, this just moves the problem initially to NGENSO with ultimate costs still coming back to the Transmission connected Customers. Without the further regulation in this area, NGENSO may not be so invested in challenging the DNO both technically and commercially on the Third-Party Works requirements. So, the CUSC mod CMP328 may actually have a more detrimental impact on getting connections progressed, adding another burden on NGENSO leading to further delays, and reducing the customers' ability to directly challenge the DNO. Changes to the Distribution Code to address some of these issues may be upcoming but they need to be progressed as a matter of urgency as some Transmission sites are now effectively sterilised for further connections as no one Connectee will be prepared to be the one to trigger the Third-Party Works.

Connection Availability – In the standard connection contract Appendix D outlines the possible allowed outage conditions for the connection. However, Appendix D does then 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 NGENSO adopts a curtailment report similar to those issued by DNOs.

End of Specific Consultation Question Responses

Enso Energy appreciates the opportunity to respond to this consultation on connections reform and, in collaboration with Cero Generation, 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 Enso Energy to participate further or if you require any additional information or input. We are eager to collaborate and contribute to the efforts



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aimed at improving the connection process and promoting the successful development and delivery of renewable energy projects.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Duncan Pomeroy".

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