



Energy for
generations

ESB Generation and Trading's Response to the ESO's Consultation on Connection Reform

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INTRODUCTION

ESB Generation and Trading (ESB GT) welcomes the opportunity to respond to the Electricity System Operator's (ESO) Consultation on future reform to Great Britain's (GB's) electricity connections process. Whilst the Connect and Manage¹ policy has enabled expedited connections to the electricity network, it may no longer be fit for purpose. If GB is to meet its targets of a fully decarbonised electricity system by 2035² and Net Zero carbon emissions by 2050³, large-scale change to gaining and retaining access to the connection queue is required. However, the proposals presented within this consultation may not be strong enough to enable the degree of change that is required in order to effectively reform the barriers to efficient and timely connections within GB.

ESB GT has written the response in two sections, the first is an executive summary and the second section details ESB GT's responses to each of the topics raised in the Consultation.

1. EXECUTIVE SUMMARY

In this section, ESB GT has summarised its high-level comments relating to the topics presented in the Consultation.

The reforms presented within this consultation are welcome changes to current practice, with the potential to reduce speculative applications and expedite future connection agreements that deliver real projects in a timely fashion. However, this Consultation presents high-level descriptions of a range of potential options for reform but lacks the level of granularity required in order to make meaningful assessment (qualitative or quantitative) of the potential benefits and/or risks to both industry and consumers. Examples of this include:

- Data exchange (and incentives required to ensure good practice from licensees)
- Underpinning reasons for a six-month batch/window process for new connections which limits the potential benefits which may arise from this alteration
- Implementation of "First Ready, First Served" whereby protections are in place to ensure that smaller-scale projects with shorter lead times are not prioritised over large-scale developments which have inherently longer lead times

¹ The 'Connect and Manage' regime enables generation to connect to the grid in advance of 'wider' transmission network upgrades

² [Plans unveiled to decarbonise UK power system by 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035)

³ [Climate Change Act 2008 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2008/27/section/1)

- How the batch/window system and anticipatory investment might align with the future Centralised Strategic Network Plan, which is proposed to run every 2-3 years, in contrast to the yearly Connections process.

Further information and greater clarity are required to enable effective engagement and allow stakeholders to direct ESO to the most efficient approaches to facilitate timely connections, whilst ensuring both security of supply and a low-cost transition for consumers.

Whilst the proposed reforms present substantial change compared to existing practice, they may not be sufficient in preventing speculative applications to the Connection queue. The ESO could benefit from utilising this opportunity to implement wide ranging change by introducing substantial qualification standards in order to gain entrance to the queue e.g. entry requirements which require substantial economic expenditure, such as a scoping report rather than proof of submission of planning permission. Without this, the reform may end up being a costly exercise with little developer or consumer benefit. Furthermore, there is substantial risk that the pace of change is too slow to enable the degree of change that is required, creating substantial friction to GB's 2030 and 2035 ambitions. Considering the large-scale investment of consumer's money in the transition to becoming the Future System Operator (FSO), these reforms should be prioritised and expedited. Without this, it creates a substantial risk that an altered Connections process will not be in place in time to achieve climate targets and ensure an economic transition for GB consumers.

Moreover, ESB GT believes that many of the issues currently facing new connections are the result of insufficient network build which has resulted in limited capacity on the electricity transmission (ET) network and with the networks playing catch up with the fast paced and ambitious changes happening as we transition to low carbon. Within this, in order to develop efficient outcomes, large- scale anticipatory investment should be prioritised as an outcome of any connection reform, ensuring that the network assets themselves do become the biggest limitation to decarbonisation.

Therefore, ESB GT's preferred options for reform include:

- Gated Foundational Design: Requirement of a scoping report to pass gate 1 for onshore connections, or successful offer of seabed leasing rights for offshore connections.
- Batched process: 2-3 months per year instead of 6, and alignment to the results of offshore leasing rounds.
- Anticipatory investment: Large-scale anticipatory investment which proactively reinforces the network to prevent connection delays, and constraints upon consumers.

- Priority projects being expedited: Defining this criterion should be a priority for the ESO. This could include large-scale UK Government subsidised projects through Contracts for Difference or innovative projects such as the co-location of wind generation with hydrogen production
- Queue management: Both reactive and proactive queue management.
- First Ready First Served: Whilst ESB GT support this proposal, further information is required on how the ESO will take into account large-scale projects which have inherently longer lead times compared to other technologies e.g. batteries.
- Non-Firm offers: Non-firm offers are beneficial when a date for gaining a Firm offer is also provided. However, further information is required on the methodology for determining firmness.

2. CONSULTATION QUESTIONS

Question 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?

Gated process

ESB GT supports the introduction of a gated process as a foundational design within GB's connections process. Gates have the potential to restrict speculative applications by enforcing certain standards and requirements upon developers. Thus, preventing inactive or non-viable projects creating delays for projects which are progressing at a timely rate. However, the proposals do not go far enough to effectively prevent speculative applications, instead the ESO should consider strengthening these to include factors such as gaining a scoping report or successful offer of seabed leasing rights. This would require substantial economic expenditure prior to entrance to the queue and will act to reveal those committed to delivering real projects. This strengthened approach to gates is already extant within Ireland⁴, whereby there is a requirement to have planning permission approved, alongside the prioritisation of large-scale new renewable projects. However, any changes to the connection process must be transparent and flexible to consider wider change. Within this, the ESO should work with Ofgem and DESNZ to ensure that any reforms have the appropriate audit processes in place. This increased transparency will aid in ensuring investor confidence is held, whilst ensuring that the ESO implements a culture of continual improvement as it transitions to the FSO.

Within this foundational design proposal, it notes the requirement for iterative review of contracts, which raises several concerns. If contracts are reviewed at multiple points throughout the process, with firm

⁴ [CRU20060-ECP-2-Decision.pdf \(divio-media.com\)](https://www.divio-media.com/CRU20060-ECP-2-Decision.pdf)

offer dates being altered, it creates substantial investor uncertainty such as the risk that assets may be constructed but be unable to be efficiently utilised for extended periods of time due to any delays. Alternatively, the ESO could make use of its proposed open data standards⁵ to enable immediate updates on timings, rather than potentially subject developers to lengthy administrative delays due to requirements to draft and await acceptance of new contractual terms. However, this should not enable bodies (e.g., FSO, Transmission Owner's (TOs) or Distribution Network Operator's (DNOs)) to alter these timeframes at ease, thus creating greater uncertainty within the process.

Central planning

ESB GT agrees that a centrally planned process would be detrimental within Connection reforms. Under this foundational design, there could be a risk that a centrally planned process would enable a switch between market principles towards a market under direct public sector control through the FSO, disempowering the developers from competitively, dynamically and at their own risk from selecting locations which 1) have the best generation capacity, enabling value for money for consumers and 2) bring economic advantage to developers, incentivising generators to the GB market. This may result in developers looking at alternative jurisdictions to invest their monies.

Moreover, Ofgem and the Department of Energy Security and Net Zero (DESNZ) have proposed a wide range of new roles and responsibilities for the ESO within its transition to the FSO⁶ and the associated administrative costs of transition, burden and incentive management needs to be taken in to account. There may be greatest consumer benefit from allowing the FSO to build up its capabilities first, instead of introducing locational signals within the Centralised Strategic Network Plan⁷ (CSNP) through new responsibilities for connection management. However, if central planning for connections was implemented, there would be a need for a new oversight body to ensure effective decision making, alongside a range of incentives to ensure efficient outputs.

Question 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?

ESB GT agrees that capacity auctions for connections should not be implemented. As outlined within the consultation, this proposed reform may result in creating an overly complex and inefficient process whereby investor confidence is reduced through this increased uncertainty, risking Net Zero ambitions by 2050. Extensive reform is required, however, this should be a developer-led process which

⁵ [Future System Operator: government and Ofgem response to consultation \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

⁶ [Strategy and Policy Statement for energy policy in Great Britain - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

⁷ [Decision on the initial findings of our Electricity Transmission Network Planning Review | Ofgem](https://www.ofgem.gov.uk)

encourages investment into GB, whilst ensuring net consumer benefit from reduced cost and access to clean sources of new energy.

Question 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?

Whilst it is understandable that the ESO would seek to keep Connections reform processes open to the introduction of locational signals, through the Review of Electricity Market Arrangements⁸ (REMA), and/or centralised deployment, through the CSNP, this creates a substantial lack of clarity to stakeholders regarding the future direction of reform. By keeping these options open to future reform, it risks negating many of the decisions being made within this consultation process unless a clear transition map with timelines have been committed to.

Many of the reasons which underpin the case for introducing locational signals are primarily the result of insufficient network reinforcement through the Future Energy Scenarios⁹, Electricity Ten Year Statement¹⁰ and Network Options Assessment¹¹ process, resulting in limited capacity on the network. Instead of considering locational signals, ESB GT believes that the introduction of FSO led anticipatory investment through the CSNP may result in positive outcomes such as an expedited rate of new connections approved, whilst providing value for consumers by reducing constraint costs. Whilst the details of this policy are still to be consulted on, this should be a key focus within Connection reforms rather than the potential introduction of locational signals. Instead, these issues could equally be addressed through transmission charging methodology reviews, respecting that the location of generation next to supply may be a defunct approach as the benefits of locating closer to fuel sources become more apparent and beneficial.

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

⁸ [Review of electricity market arrangements - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

⁹ [Future Energy Scenarios | ESO \(nationalgrideso.com\)](https://nationalgrideso.com)

¹⁰ [Electricity Ten Year Statement \(ETYS\) | ESO \(nationalgrideso.com\)](https://nationalgrideso.com)

¹¹ [Network Options Assessment \(NOA\) | ESO \(nationalgrideso.com\)](https://nationalgrideso.com)

Whilst ESB GT agrees with the overriding principles presented within TMA A to TMA C, further clarity is required on the Pre-Application Stage in order to determine the degree to which this change will benefit stakeholder experience. For example, under these proposals, questions remain on:

- Whether there would be a freeze date for information published?
- How often a freeze would occur?
- How transparency and new obligations, upon both licensees and the ESO/FSO, would be structured and monitored?

Without these safeguards, it risks incorrect or out of date information being utilised which substantially reduce the benefits which could otherwise arise from this reform.

In alignment to this, there is a need to enforce a requirement upon licensees (ESO/TOs) to attend Pre-Application Meetings with developers, including timelines to prevent unnecessary delay. This could be done within the Price Control incentive framework, led by Ofgem. These meetings should be one-to-one and timelines for initial discussions should be transparently outlined e.g. 4 weeks. Currently this practice does not occur, creating inherent delays within the process and may result in projects entering the queue which are not sufficiently developed, thereafter creating delays to other established projects. ESB GT has concerns that this will not be implemented due to resourcing issues within licensees. However, internal licensee practice and prioritisations, with regards to resourcing, should not detrimentally impact developers or UK climate ambitions. Whilst this sits outside of the remit of the ESO/FSO, the ESO should begin engagement with Ofgem in reviewing their incentive frameworks for Connections to support timely engagement and delivery with stakeholders.

Question 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?

ESB GT supports this concept as it requires upfront investment from connectees and may prevent speculative or duplicative applications from the outset. However, this fee should be high enough to act as an incentive to reveal a real intention to deliver a project but not too high to become a financial burden that would hinder competition. Further consultation on this is welcomed.

Question 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.

The Key Data proposed within the consultation could be beneficial in guiding locations for future applications, especially for flexible technologies such as long duration battery storage. However further information is required on what this would look like in practice e.g. level of granularity and timeframes whereby the information is updated. Additional data is always useful, but this must be up-to-date or risks leading developers into decision making which results in suboptimal or inefficient outcomes.

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

Whilst TMA D acts as an initial gate and filter, it might not be sufficient to prevent speculative applications. Thereafter, creating the risk that this proposed reform continues to result in large-scale delays to projects which are progressing at the pace required, and risks high costs to consumers with little economic benefit, or expedited rate of meeting climate targets. Gaining access to a Letter of Authority is not a high bar, and it may be beneficial strengthening these requirements to include the requirement of 1) evidence of gaining secure access or 2) a scoping report for planning permission. As noted in response to Question 1, this would require substantial economic investment, without setting the bar too high e.g. requiring planning permission approval. Moreover, this would show viability of projects, reducing attrition rates, whilst still enabling the introduction of the “First Ready, First Served” approach to expedite ready(ier) project as presented within the Target Model Options (TMOs). This has the potential to reduce delays and provide substantial consumer and system benefit.

Furthermore, the increased certainty arising from requiring greater proof of project progression, as suggested above, may act as an evidence base to implement greater degrees of anticipatory investment to enable new connections. Thus, reducing Ofgem’s concerns when approving large scale anticipatory investment in the network.

Question 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?

ESB GT does not agree with the ESO’s proposal to wait until impacts of the 5-Point Plan are known before implementing wider change. Projects are currently facing a wait of up to 10 years to gain a connection agreement, which could be expedited if the ESO implemented effective reform at pace i.e. anticipatory investment, introduction of gates, intermediate non-firm offers and further rounds of the TEC amnesty. This current approach appears to be risk adverse with little information provided as to why implementation of the proposed reforms may be negative and should be delayed. The current

Connection process require wide reform and changes must be expedited if GB is to meet its 2035 decarbonisation targets. This is particularly important with regards to the introduction of anticipatory investment, which could be implemented now through either the NOA process or the future CSNP.

Due to historic low and reactive electricity transmission (ET) infrastructure build¹², the ESO is regularly forced to constrain off generators, resulting in high prices for consumers through constraint payments¹³. The introduction of anticipatory investment has the potential to expedite connections and increase competition within the balancing market, in-turn having a greater impact that that reduces consumer cost through reduced constraint and system balancing costs. Thereafter, ESB GT suggests implementation of this proposal regardless of TMO selected.

However, within the next stage of consultation, it would be beneficial to gain further information on each proposal rather than ruling out implementation until ~2025. ESB GT would seek clarity c on the following points:

- TMA E1 (Connect and Manage): Are there any risks to Security and Quality of Supply (SQSS) standards? How will this differ from the current Connect and Manage process and bring benefit to developers, or is it business as usual and included as a counterfactual?
- TMA E2 (CPAs): How does this differ from current practice within the 5-Point Plan? Within the consultation it states that even under TMO4, the ESO presumes an attrition rate of 50%¹⁴ which appears high considering the level of reform proposed, creating a perception that the ESO may believe that the reform, within its current form, won't have the effective change required. What safeguards are in place to ensure that CPA attrition rates are not set /assumed to be too high, resulting in less enabling and/or reinforcement works occurring, resulting in further delays?
- TMA E3 (Non-Firm Connections): How do you propose to work out timelines for allocation, apportionment and delivery of firmness? Transparency on this is vital in order to ensure investor confidence in reforms.
- TMA E4 (Anticipatory Investment): Who will be leading the design of this reinforcement work – the ESO/FSO or TOs? In a future world where the CSNP has been implemented, it is proposed that this will be published every 2-3 years. How will this align to the 6 monthly batch process? How do you plan to ensure transparency within this process?

¹² [Consultation on the initial findings of our Electricity Transmission Network Planning Review | Ofgem](#)

¹³ Annual transmission constraint costs have increased from £170m in 2010 to £1.3bn in 2022 and are expected to continue rising. - [Future Energy Scenarios 2022 | ESO \(nationalgrideso.com\)](#)

¹⁴ Figure 7.1: Illustration of how the attrition rate of projects leaving the connections queue may develop throughout the connections journey

Question 9: Do you agree with our initial recommendation with regard to TMA F (criteria for accelerating ‘priority’ projects)?

ESB GT agrees with the introduction of the concept of accelerating priority projects. Following this consultation, the ESO should begin working with Ofgem and DESNZ in order to determine which projects could be eligible under the criteria of official designation by Government or demonstration of significant additional consumer and/or wider economy/societal benefit. At a high level, this proposal seems beneficial and defining criteria for each option should be prioritised. However, it may be beneficial to include large-scale renewable projects or innovative projects such as the co-location of wind generation with hydrogen production. Thus, offering the opportunity to optimise the use of existing and new infrastructure in order to reduce constraints whilst attaining multiple government objectives, including decarbonisation of industry, innovation and reduced network reinforcement which enables a low-cost transition. Furthermore, this approach aligns to, and could aid the UK government to realise, ambitions set out within the recent Ostend Declaration¹⁵ which seeks large-scale and coordinated investment in hydrogen within the North Sea.

Moreover, ESB GT believes that the introduction of a price-based mechanism to allocate connections on the grid should not be dismissed as it may enable the implementation of large-scale renewables on the offshore and onshore GB electricity network. This could bring substantial benefit in expediting these connections over smaller-scale technologies which do not bring as great a degree of consumer benefit. Thus, enabling attainment of 2035 and 2050 targets at an expedited rate.

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

ESB GT does not agree with the initial recommendation for queue management. Both forms of queue management (reactive and proactive) should be implemented due to the wide-ranging change required to the current queue management processes. The ESO’s proposal of only implementing Reactive Queue Management appears to represent no change considering the recent code modification proposals e.g. CMP376¹⁶. Moreover, the exclusion of Reactive Queue Management creates the appearance that the ESO is implementing the easiest/least risk options for them as an institution, rather than introducing alterations which may make the greatest change. Rather, both forms of queue management should be introduced, and within this, effective incentives should be put in place which

¹⁵ [Developing the North Seas as a green power plant of Europe: North Sea Summit declarations - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/north-sea-summit-declarations)

¹⁶ [CMP376: Inclusion of Queue Management process within the CUSC | ESO \(nationalgrideso.com\)](https://www.nationalgrideso.com/cmp376)

safeguards developers from any potential suboptimal/ineffective decisions which are made by the ESO such as removing active and progressing projects prematurely.

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

The range of options presented to implement Connection reforms are reasonable. However, they lack the detailed information required in order to make an effective quantitative and qualitative assessment. However, rather than presenting four models which range from minimal to wide ranging change, it may have been more beneficial to outline 4 models that exhibit larger-scale reform. Within its current form, two out of the four options could be classified as almost business as usual, with minor changes, leaving only two potentially viable options to assess for future reforms.

It may have been beneficial to represent four alternative versions of TMO4 whereby each represent varying criteria e.g. strength of gates (moving from submission of planning permission to requirement of planning permission approval), batched system (two months per year to six months per year) and queue management (proactive to proactive and reactive). This would enable wide ranging reform whilst giving stakeholders and opportunity to assess the impacts of all alternatives. Currently, as TMO4 is the only option which represents large-scale change, and the only option which aligns to offshore connections, it could be seen by stakeholders as the most viable option.

Question 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?

There is little information provided on why a batch process (including windows for applications) of six months was selected, creating the appearance of arbitrary timeframes being selected. Compared to current practice, this still represents a large timeframe which will not bring the degree of benefits proposed from the introduction of a time restrictive element to submission and/or assessment of connection applications. Moreover, the consultation states that a shorter timeframe would reduce flexibility of submissions of connection applications and may result in greater time to receive a connection offer than under the current arrangements. ESB GT disagrees that this would result in negative stakeholder experience, this practice existing within Ireland whereby batches are undertaken in a 2-month time period each year¹⁷, resulting in successful outcomes. Thus, it may bring greater benefit to licensees, developers and consumers in reducing this timeframe from six months to two or

¹⁷ [Electricity Connection Policy | CRU.ie](https://www.cru.ie/en/reports-and-publications/publications/2017/06/2017-06-01-electricity-connection-policy/)

three months each year. Considering this, as noted within Chapter 8 of the consultation, this should align to Crowne Leasing timetables. However, rather than aligning to a leasing round, it should align to the outcomes of leasing rounds so that successful projects can apply for a connection agreement in a timely manner, preventing speculative applications.

Question 13: Are there any important TMOs we have missed?

ESB GT are not in a position at this time to propose any alternative TMOs.

Question 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 in the response to Question 7, requiring planning consent submission is not a high requirement to gain entrance to the queue. This should be a requirement within Gate 1 for all TMOs, and also increasing requirements to gaining secure access or a scoping report for planning permission within Gate 2. Whilst ESB GT understands stakeholder concerns outlined, the key function of this reform is to prevent speculative applications monopolising connections and creating delays to genuine and viable projects. Thus, the ESO should not hesitate in implementing stricter gates at the risk of negative feedback.

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

TMO4 represents the most wide-ranging change and, with the information provided in this consultation, is an acceptable high-level proposal. The introduction of ‘First Ready, First Served’ has the potential to be beneficial but further detail is required on how this could be implemented in practice, including how it will account for technologies which have an inherently longer lead time. Without this, there is a risk that smaller technologies are expedited within the queue to the detriment of larger and government subsidised projects such as within Contracts for Difference¹⁸. To rectify this, there may be benefit in creating batches of capacity or technology type which could be expedited within each yearly window. Further, ESB GT has concerns surrounding the proposal that TMO4 will take 15 months to gain a full connection offer. Whilst this TMO provides greater certainty, there is no information provided on the substantially longer lead times in comparison to TMO 1-3. This inherent delay within the connection

¹⁸ [Contracts for Difference - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

process may result in unintended negative consequences such as further delays to projects at a time where reform is seeking to reduce uncertainty and expedite project delivery.

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

The design criteria represent a largely fair assessment of each model. However, ESB GT does not understand why the model could not be implemented in a timely and efficient manner. If prioritised by the ESO, Ofgem, DESNZ and licensees then the reformed model could be implemented at a more expedited rate than currently proposed. Any delays to delivering this change will have substantial consequences for timelines and UK Government ambitions such as a decarbonised electricity system by 2035 and net zero carbon emissions by 2050¹⁹. Consequently, Connection reform should be a priority within the transition from ESO to FSO in order to create efficient and effective change. Wherever possible proposals that could be implemented through code changes should be immediately prioritised. Further information should be provided surrounding which alterations could be applied through this route, and where possible, in conjunction with Ofgem, be implemented following the results of this consultation.

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

ESB GT has no further comments at this time.

Question 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?

ESB GT's preferred options for reform include:

- Gated Foundational Design: Requirement of a scoping report to pass gate 1 for onshore connections, or successful offer of seabed leasing rights for offshore connections.
- Batched process: 2-3 months per year instead of 6, and alignment to the results of offshore leasing rounds.

¹⁹ [Plans unveiled to decarbonise UK power system by 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035)

- Anticipatory investment: Large-scale anticipatory investment which proactively reinforces the network to prevent connection delays, and constraints upon consumers.
- Priority projects being expedited: Defining this criterion should be a priority for the ESO. This could include large-scale UK Government subsidised projects through Contracts for Difference or innovative projects such as the co-location of wind generation with hydrogen production
- Queue management: Both reactive and proactive queue management.
- First Ready First Served: Whilst ESB GT support this proposal, further information is required on how the ESO will take into account large-scale projects which have inherently longer lead times compared to other technologies e.g. batteries.
- Non-Firm offers: Non-firm offers are beneficial when a date for gaining a Firm offer is also provided. However, further information is required on the methodology for determining firmness.

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

Any model and/or criteria for determining Reserved Developer Capacity (RDC) should be consulted upon to enable effective engagement of the potential quantitative or qualitative impacts. This is crucial to prevent projects from overestimating capacity requirements.

Question 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?

Similar to proposals within this consultation for new large-scale generation, a gated process should be introduced which requires evidence of project progression before requesting capacity.

Question 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):

- DNOs should be able to request RDC via application windows to allow them to continue to make offers to EG inter-window; and**
- 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)?**

Clarity would be appreciated on how this could work with the ESO Pathfinders process, whereby certain technology such as synchronous condensers may be successful within the competitive process. Under this, would these projects be prioritised or potentially face lengthy delays until the next batch of RDC becomes available?

ESB GT supports the proposals to offer Firm connections, whilst also offering advanced connections through non-firm connection dates. However, the methodology for determining firmness is not clear within the consultation. Further information is required on the methodology used in order to determine firmness. This should be included within future consultation processes undertaken by the ESO.

Question 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?

ESB GT agrees that directly connected demand should be included and may enable more effective network planning and system management capabilities. This could be facilitated through with the proposed digital twin data modelling²⁰ which will be implemented as the ESO transitions to FSO. This has the potential to enable more effective decision making, including cooptimising the energy system by considering all energy vectors (including demand and generation together to effectively assess network capacity) and reducing constraint costs upon consumers to enable the lowest cost transition.

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

It's unclear why TMO's 1-3 have not been developed in order to enable an effective offshore connection process. Rather, it appears that TMO4 was developed to be the only model which enables holistic assessment of onshore and offshore connections.

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

TMO4, within its current form, appears to be the only model able to holistically consider the onshore and offshore network together. Moreover it is the only model which facilitates the highest levels of anticipatory investment, which is vital in preventing delays and constraints. Considering the onshore and offshore network together is key in preventing future delays due to insufficient network

²⁰ [Energy System Digital Twin - Benchmarking Report \(nationalgrideso.com\)](https://www.nationalgrideso.com)

reinforcement. This was evident from recent outcomes of the Holistic Network Design²¹, whereby once onshore and offshore reinforcements were assessed together ²², it was found that an additional £19.8bn investment was needed through the Accelerated Strategic Transmission Investment programme to enable the safe connection of new assets²³.

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

Within the consultation it states that Connection reform could enable improved collaboration with The Crown Estate and Crown Estate Scotland, resulting in connection application windows being aligned with upcoming / announced leasing rounds. Moreover, it states that this could enable early insight into the capacity requirements associated with those future seabed leases, thus enabling a more efficient and holistic system design. ESB GT believes that this could bring substantial benefit to offshore developers, especially when implementing a batched process. However, there is benefit in considering a new gated requirement of have a lease offer in order to enter the queue, rather than a formal letter from the Crown Estate or a document detailing the relevant upcoming seabed leasing round. This current proposed approach may not be not effective in preventing speculative applications. Furthermore, the batches should align to timelines whereby developers receive a formal offer. This would enable more effective system design, whilst reserving licensee resources if the batch time was reduced from six months to two-three months.

Question 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?

ESB GT has no further comments at this time.

Question 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?

ESB GT’s high-level views are outlined within the table below:

Supplementary Target Model Add-ons	ESB GT’s view
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²¹ [The Pathway to 2030 Holistic Network Design | ESO \(nationalgrideso.com\)](#)
²² [The Pathway to 2030 Holistic Network Design | ESO \(nationalgrideso.com\)](#)
²³ [Decision on accelerating onshore electricity transmission investment | Ofgem](#)

TMA H – Structure and Value of Fees	Further information is required on how a methodology would be determined, preventing increased rates for large-scale developments which may result in incentivising developers to alternative markets if unfairly penalised.
TMA I – Criteria for ESO to reject an application	Ofgem, or an alternative body, would be required to implement a new incentive to encourage effective practice and introduction of a yearly, transparent, audit process to enable assessment of decision-making being undertaken by the ESO/FSO.
TMA J – Optionality provided in an offer	Support proposal to implement one single offer with the ability to advance connection dates.
TMA K – Capacity products in an offer	Further information is required on defining Transmission Import Capacity and non-firm access, including the methodology and timelines to determine firmness.
TMA L – Requirements to accept an offer	Further clarity is required to enable an effective assessment of proposals.
TMA M – Timeframe for updating contracts	Timelines to up-date contracts should be implemented as a requirement, including incentives for licensees for delivery in a timely manner e.g. four weeks. Currently, developers face substantial delays due to the slow pace of current arrangements.
TMA N – Criteria for ESO to reject a modification	Further information is required on defining scope of connection modifications. Currently if attempting to reduce TEC through the CUSC, developers can face substantial delays due to the timeline of the 1 st of April for implementation. The process should be streamlined to prevent unintended consequences, which force developers to unnecessarily hold onto TEC that

is not required and could be utilised for new generation.

Moreover, connection modifications should be opened up to consider hybrid connections. In order to get the greater consumer benefit, hybrid connections should be future proofed to all technologies, including conventional generation (Combined Cycle Gas Turbines and Open Cycle Gas Turbines), hydropower, renewable, hydrogen and flexible technologies (including long duration large scale storage). This would enable market led decisions which have the potential to result in the most economic and efficient means to meet net zero ambitions. An example of this could be a solar farm producing and exporting energy during the day, and then a hydropower station sharing the connection point, producing and exporting energy at night. Thus, utilising the connection at all points of the day, resulting in security of supply and value for consumers.

This dynamic sharing of MEC could also enable optimised use of existing and new infrastructure through the siting of generation such as electrolysis; reducing constraints whilst attaining multiple government objectives, including decarbonisation of industry, innovation and reduced network reinforcement which enables a low-cost transition. Thereafter, by expanding this policy to wider technologies it would aid in expedited attainment of climate targets, a low-cost transition and security of supply through maximised utilisation of MEC.

TMA O – Secondary processes	Support proposal in making connection modifications more efficient and the potential to be implemented at a quicker speed.
TMA P – Dual Track Process	Clarity is required on defining priority projects. However, this proposal should not be discounted at this stage.
TMA Q – Financial compensation	Support proposal and welcome further information at the next stage of consultation.
TMA R – Management of underused capacity	Further information is required on how this could be implemented, including timelines and means of communication before removal of underused capacity. There is a substantial risk that this will impact projects which intermittently used their full contracted capacity, and these connection agreements should not be unnecessarily negatively impacted by potentially arbitrary decisions.
TMA S – Fast-track dispute process	Supportive of proposals to fast-track disputes.

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

As noted in our response to Question 16, the timelines presented appear to represent a much slower pace of change than is required by industry and attainment of climate targets. Reform should occur as soon as possible, where possible.

Question 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?

ESB GT has no further comments at this time.

Question 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?

Critical code modifications are currently being delayed due to slow progress within Ofgem. Ofgem and DESNZ need to review this process, including potentially increasing resourcing, in order to ensure that these modifications take place at the pace required, and ensure that the regulator does not act as a barrier to change.