

Field: Ofgem's Connections end-to-end review consultation response

Field develops, builds and operates the renewable energy infrastructure needed to get to net zero. We are an international company, with our main focus to date being BESS in GB. We have an 60MW/80MWh operational portfolio across three distribution-connected assets, a strong pipeline of ready to build projects connecting to both the transmission and distribution networks, and a 4.5GW development pipeline of large, transmission connected assets. Throughout our response we use examples from development of our assets, with fuller case studies presented in Appendix A [Confidential].

We welcome the opportunity to respond to Ofgem's Connections end-to-end review consultation. We agree with Ofgem that there are key issues in the connections process which must be resolved. We also note that this consultation is taking place against a backdrop of unprecedented policy change for network connections. In order for the changes Ofgem are consulting on, built on with our recommendations below, to have maximum impact, it is imperative that connections reform is implemented well. In particular:

- Ofgem must ensure NESO implements connection reform in a way which does not exacerbate network constraints or exacerbate operability issues. Specifically, NESO must not substitute potential transmission connected storage projects in North Scotland (which alleviate constraints and contribute to system stability) with distribution connected projects (which do not contribute to system stability) or projects further south (which will make constraints worse)
- The Strategic Spatial Energy Plan (SSEP) will form the basis for the "needed" element of "first ready and needed, first connected" beyond 2030. It must be more carefully considered from the point of view of system 'need' than the flawed CP30 zonal capacities contained in the advice from NESO to Government. Most notably, the SSEP must properly take account of the full range of system benefits storage can provide in order to deliver a good spatial distribution of storage for the system

The current connections process is very difficult for developers to navigate. The data available on which developers can make siting decisions is inconsistent and poor quality; levels of service vary wildly between different network companies (we have had good experiences and some very poor experiences); and network companies are not held accountable for the quality and timely delivery of physical connections infrastructure. We make five overarching recommendations for improvement, with supporting arguments and evidence for these provided in our responses to questions on each theme.

- Recommendation 1: Identify and resolve inconsistencies and inaccuracies in existing datasets before considering implementation of data visualisation tools and portals
- Recommendation 2: Resolve key omissions in data currently available, most notably for demand connections, harmonics data, and ongoing Use of System charges
- Recommendation 3: Implement a fair but robust prescriptive incentive and penalty regime for network companies to deliver consistently good service to connections customers, incrementally improving the level of the best performers and delivering a step change in the level of the worst performers
- Recommendation 4: Ensure risk on connections delivery sits with the party best placed to manage that risk – in the context of network connections infrastructure, the incumbent network owner – through an appropriate financial instrument
- Recommendation 5: Implement a strong, principles-based incentive regime on quality of delivery of connections, alongside the prescriptive, financial instrument-based incentive for timely delivery

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

We broadly agree with the issues noted by Ofgem in the consultation. The key focuses should be:

- **Resolving inconsistencies and inaccuracies in existing data sets** – Ofgem, networks owners and NESO should prioritise accuracy of data over introducing “nice to have” visualisation tools and data portals
- **Resolve key omissions in current datasets** – there are key gaps in publicly available data that would enable developers to undertake better early stage development activities. In particular:
 - a. A dataset on harmonics. Harmonics are an increasing issue for new connections which can have a significant impact on project design
 - b. A demand connection register for connections above a defined threshold for both transmission and distribution would allow customers to correctly assess connection viability prior to submitting connection applications

We have responded to individual questions below, drawing on our experience on accessing and analysing data related to both transmission and distribution networks for prospective new assets. We have two key recommendations:

- Recommendation 1: Identify and resolve **inconsistencies and inaccuracies** in existing datasets before considering implementation of data visualisation tools and portals
- Recommendation 2: Resolve key **omissions in data** currently available, most notably on demand connections, and harmonics data, and ongoing use of system charges respectively

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

We broadly agree with the themes Ofgem has identified. However Ofgem must put more weight on the consistency and accuracy of data. Addressing the other issues is futile if the data cannot be trusted. Internal inconsistencies within individual datasets and contradictions between different datasets leave stakeholders with low confidence on the usability of data. If all other issues are resolved but data quality remains poor, industry will have made little progress.

Quality of information example – customers cannot complete early stage project feasibility assessments given the variable quality of information provided in network company connection registers. In the Transmission Entry Capacity (TEC) register, in particular, the “Project Status” is shown to be inaccurate when subject to light scrutiny – for example there are 129 projects which are listed as having TEC in 2024 or earlier that do not have a “Built” status (Table 1).. We have less experience with Distribution projects, but have noticed a similar trend with the Embedded Capacity Registers.

Table 1: Project status of TEC register entries with a pre-2025 'MW effective from date'

Project Status	Count of Projects with TEC in 2024 or earlier
Awaiting Consents	9
Consents Approved	59
Scoping	44
Under Construction/Commissioning	17
Total not yet built	129
Built	6
Total	135

Consistency of information example – DNOs' assessment methodologies are inconsistent. For example, UKPN currently assess BESS as OMW for demand, whereas SPEN (Manweb) assess BESS at 100% capacity for both import and export.

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

No. Accuracy, consistency and completeness of data is much more important than the platform on which it is presented. We urge Ofgem and network companies to first address inaccuracies and inconsistencies, second resolve gaps in information, and only then consider investing time and effort in creating digital tools for the presentation of such data.

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

No, as per response to question 1b.

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

Yes. However as per our response to question 1a, such connections data will only have value if it is accurate, consistent and complete.

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

Completeness of data needs to be improved. We include in our response three key pieces of missing information – harmonics data, clarity on network charging, and data for demand connections. We have commented on the clarity of existing data sources in response to question 1a.

Harmonics data – harmonic headroom at each GSP or MITS node is a key piece of information when considering a potential connection location. With the increasing connection of embedded generation onto the network, we have noticed an increasing risk of network harmonic limits being reached, which could trigger harmonic

mitigation measures (e.g. installing a harmonic filter). Late discovery of the need for harmonic filters has a significant cost impact (approximately £1m quotation for all works for our 33kV BESS Project at Newport, Case Study 1) and makes substation layout more difficult. We recommend that network operators should provide a dataset on harmonic headroom for each Grid Supply Point and Bulk Supply Point.

Availability of data for Demand connections – a regularly updated database of demand connections above a threshold (we suggest 10MW, 30MW and 50 MW to align with Large generator definition in different locations) should be published to facilitate customer analysis of a given network location. This data is key for demand, generation and storage connections.

Clarity on network charging – when assessing early stage feasibility, the likely ongoing network charges an asset will face are a key factor. For distribution connected assets connecting at EHV, this is extremely challenging to assess. Ofgem acknowledged this in 2018 (“we recognise that predictability of charges is important for users” stated in the launch of the Network Access and Forward Looking Charges Review) but to date there have been no improvements in predictability or transparency of charges for EHV connected users. This is a particular challenge for new connectees, who typically receive heavily caveated “illustrative” charges from the DNO relatively late in the connections process. **In order for EHV DUoS to give a meaningful signal, DUoS charge forecasts must be provided earlier and with greater confidence to enable developers to use that information in decision making.** Likewise, predictability of TNUoS charges is challenging. We urge Ofgem to approve CMP444, enabling connecting customers to put reasonable bounds around the range of potential TNUoS charges they could face during the lifetime of the asset.

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

In circumstances where projects are interactive, it may be beneficial for networks to share the identity of each connectee with the other. We recognise there should be appropriate controls around sharing of information between potential competitors; however once in the construction phase, it is likely that two projects will benefit from dialogue rather than funneling information via the network company. Hence we recommend that network companies be required to share the identity of interactive connectees with one another, subject to prior agreement of both connectees.

Case Study 1 – For our 20MW BESS project in Newport in the NGED area, it became apparent that there was a critical project dependency with another customer. Upon submission of our harmonics assessment, we were informed by the DNO that harmonic mitigation was required at our site, at an additional cost of ~£1m to the project. The customer “ahead in the queue” did not meet their connection milestones and have been delayed by several years. We requested confirmation of who was ahead in the queue so we could request realistic construction timescales as we were under pressure to secure a large contract based on their timelines. The DNO was unwilling to share this information. Instead we were given an “indicative completion date” range of 6-12 months, which was eventually updated to over 2 years. We had to risk either committing an additional £1m spend or not adhering to our timescales and not being energised simply by the DNO gate-keeping this date which was critical to our project, being caused by the DNO not sharing information which was clearly material, non-sensitive information.

Further detail on this project is provided in [Appendix A](#).

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

The methodology associated with Construction Planning Assumption (CPA) analysis should be more transparent. This was one of the prongs of NESO's 5 point plan, The outcome was not communicated well.

Data accuracy – As previously mentioned, accuracy of data in the TEC register relating to projects' connection site, connection status and '*MW effective from*' would be helpful. Also, projects' technology type being accurate and simplified (currently, there can be any combination of 15 different types of technology).

Pre-apps are not offered for NGET – instead these are 'regional webinars every 7 months or so. Not very useful and customers are encouraged to simply pay the application fee (>£80k) simply to acquire meaningful intel from the network/system operator.

Theme 2 – Improved standards of service across the customer journey (not including “minor connections”)

We broadly agree with the issues raised by Ofgem and we believe that proposal 2b should be progressed. In particular, there are two key areas where Ofgem and the networks should focus their attention:

- **Ensuring consistently good standards** – the service received from different network companies varies wildly. We have had some generally positive experiences, but several which have been very challenging and have ultimately made the development process significantly harder than it should be
- **Progress with proposal 2b** – a principles based approach has evidently not worked (please see evidence provided in Appendix A). An SLA driven approach to improving the standards of service across the customer journey should be implemented

We have responded to questions below, providing specific evidence from our projects. We have one key recommendation in this area:

- Recommendation 3: Implement a fair but robust **incentive and penalty regime** for network companies to deliver **consistently good service** to connections customers, incrementally improving the level of the best performers and delivering a step change in the level of the worst performers

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

We generally agree with the issues that have been raised, in particular with points relating to “inconsistency of standards of service along the customer journey”. We have had positive experiences where we have received good, pro-active service from network companies, most notably in development of our Oldham asset. By contrast, others have been broadly acceptable and others extremely poor to the extent that projects have been delayed and significant additional costs incurred.

There is no clear expectation of customer engagement from regulated monopolies. Some appear to have a culture whereby connecting customers are treated as an inconvenience to network company teams. This is particularly noticeable, and most damaging, in the key period between acceptance of a connection offer and construction. Network companies face incentives to provide offers in a timely manner, but no incentive beyond offer acceptance to provide good service.

We agree with suggestions that timelines and SLAs should be associated with pre-application engagement, post-acceptance kick-off meetings, and allocation of suitably qualified project teams including Project Managers.

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

We are not in favour of Proposal 2a. Principles-based conditions have evidently not worked to date and a prescriptive SLA driven approach (as per proposal 2b) is necessary to hold the network companies to account.

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

We agree with Proposal 2b. We have detailed a specific set of recommendations for the post-offer, pre-construction phase below but have also recommended other standards of service in the document as detailed below:

- Service Level Agreement (SLA) for post-offer, pre-construction phase (this response)
- Financial incentive to deliver projects on time (see response to question 3d)
- Minimum required information in connection offer updated (see response to question 4d)
- SLA for milestones for network operator /NESO post-acceptance (see response to question 4e)

In the post-offer, pre-construction phase, allocation of suitably qualified resource from the network companies and timely responses to queries in the connections portal are key. We have recommended SLAs on both below, which Ofgem may consider included alongside other prescriptive requirements on DNOs to establish minimum standard and incentivise outperformance.

Timely allocation of resource – we recommend Ofgem introduces a prescriptive requirement on network companies to:

- Allocate a Project Manager within [10] working days of offer acceptance
- Allocate a suitably qualified Project Team within [20] working days of offer acceptance
- Introduce a disputes process whereby connections customers can evidence that “suitably qualified” individuals have not been allocated
- Provide network parameters within [3] months of acceptance (maximum fault level, minimum fault and harmonics data)

Case Study 2 – for our 50MW BESS project at Keith in the SHEPD area, it took over 3 months of chasing to receive a project kick-off call with the Connections PM, which required escalation to Head of level at SHEPD and we have been waiting for over 6 months for harmonics data.

Timely response to queries in the NESO connections portal – The Connections Portal was a good start for having queries in one place, but requires improvement. NESO now refuses in many instances to respond to email queries, necessitating portal improvements. In particular, we frequently see:

- Questions closed in the portal when not answered (e.g. “I have raised this with the TO” being deemed a sufficient response).
- Key queries left unanswered at the acceptance deadline, meaning the customer has to sign at their own risk.

We recommend:

- An SLA associated with response time (e.g. 10 working days) and full closure of the query (e.g. 30 working days).
- Dual sign-off from NESO and customer prior to queries being closed (tick box)
- A window of 1 month upon offer receipt for queries to be raised by customer, allowing NESO/TO 2 months to respond

Case Study 3 – For our 50MW BESS project in Ayr in the SPEN area, a lack of communication, and urgency has resulted in a delay of key network reinforcement works which the project is dependent on, being delayed by over 22 months.

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

The existing regulatory requirements are inadequate (see response to question 2e).

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

We have included brief examples of service issues with DNOs that have led to significant delays of critical path items, and ultimately pushed back completion dates, costing consumers money and increasing carbon emissions as a result. More details for each project are provided in [Appendix A](#).

The purpose of these case studies is to shed light on some of the challenges that developers face, highlight the challenges of delivery in general and the potential repercussions that can arise due to either a lack of engagement or misinformation from the network operator. We believe that these represent good examples of this behaviour and hope that it provides some justification for Ofgem to implement a stronger incentive mechanism to keep network operators accountable for their performance.

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

We have been severely impacted by the network operators poor performance which has directly resulted in significant project delays and financial loss. Timeliness is a key issue, but quality of delivery is also poor and is not given sufficient focus in Ofgem's consultation. Ofgem should focus on:

- **Implementing an SLA-based incentive regime for timely delivery backed by a Financial Instrument**
 - A principles-based approach to timeliness of delivery has not worked (please see evidence provided in Appendix A). We strongly favour an SLA-driven approach to improving timeliness of delivery, backed by a financial instrument to incentivise DNOs to complete projects on time and have provided a suggestion in question 3d
- **Implementing a principle-based regime related to quality of delivery** – while we generally support SLA-backed incentive regimes, we think a principles-based approach is the only feasible option for quality of delivery, provided there is a clear mechanism for developers to submit evidence where standards are not met and a transparent process to resolve issues highlighted

A financial instrument in particular will ensure DNOs bear some risk for non-delivery of connections projects. This would better align with principles Ofgem has relied upon elsewhere – most notably on allocating risks to parties best placed to manage those risks – and as a result will ultimately reduce costs for consumers. This should be supported by a strong incentive regime focusing on quality of delivery. Hence our final two recommendations:

- Recommendation 4: Ensure **risk on connections delivery** sits with the party best placed to manage that risk – in the context of network connections infrastructure, the incumbent network owner – through an appropriate financial instrument
- Recommendation 5: Implement a strong, principles-based **incentive regime on quality of delivery** of connections, alongside the prescriptive, financial instrument-based incentive for timely delivery

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

Yes, we agree with the key issues raised (see evidence provided in 3e). The existing wording in the Current Regulations cited in 2.70 clearly have not held network operators and the NESO accountable for delivery.

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

We do not agree with this proposal. The issues raised by Ofgem are clear evidence that the existing principles-based approach has not worked. It would be futile to persist with even a strengthened version. For example the suggestion to use “all reasonable steps” as a strengthened principle is substantially the same as the “use all reasonable endeavours” piece of legislation for TOs, which has already been proven not to work.

However while timeliness of delivery is important, quality of delivery is key, particularly in relation to health and safety issues. We have had numerous issues with network companies and their contractors, with poor working practices which reflect badly on us as the primary developer of a site and can expose us to additional costs associated with remedial works. We think this is an omission in Ofgem's current areas of focus, which are strongly centred on quality of service and timeliness of delivery. Quality of delivery is equally important.

We support the introduction of a principles-based licence condition, requiring network companies to comply with good working practices and the highest standard of health and safety. This must be supported by:

- A clear mechanism for developers to submit evidence when network companies fall below the high standards which should be expected
- A transparent process for dealing with the issues raised in any submissions

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

We agree that an objective SLA driven approach to accountability should be enforced. Customers are threatened with having their projects terminated if a milestone is not reached, whereas the NESO have a 2-year delay accounted for (via the Backstop Date) which is an indication of the discrepancy between the accountabilities of the customer and network companies.

However we also agree that circumstances outside of the network/ system operators control should not result in a penalty, as per the example in 2.87.

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

We are strongly in favour of a financial instrument to provide compensation to customers where the project completion date has been delayed. Network companies are typically the only party materially involved in construction of a new generating station which have no financial liability for non-delivery. All major sub-contractors involved in delivery will have liability for Liquidated Damages should delivery timescales or quality fall outside of agreed parameters.

As a result, connecting customers bear the full risk of the network company failing to deliver. Ultimately, this is an uncontrollable risk for connecting customers, which manifests as an increased hurdle rate. Risks should sit with the party best placed to manage them. In the context of delivering connections infrastructure, that party is the relevant network company. So they must bear some risk for non-delivery.

Case Study 4 – For our 50MW BESS project in Fort Augustus in the SHEPD area, SHEPD had made assurances throughout the project lifecycle that a critical 132kV cable crossing agreement, which was required for the 33kV cable route to the customer site, had been agreed. A few months prior to energisation we were made aware that in fact no provisions for the 132kV cable crossing had been made. As a result of this, a project that had a completion date of July 2024 is now scheduled to be complete in April 2025, a delay in project completion of 9 months.

We propose a liability of 15% of the contract value if delivery is substantially delayed, for example by nine months or more. This would be more lenient than typical contracts with sub-contractors who face liabilities if delivery is delayed by a much shorter period. Hence we consider this a balanced first step. We acknowledge that this may drive an increase in connection costs to connectees, driven by the network operators using more reliable contractors to ensure financial liabilities are avoided. The benefits of more timely connections offsets the increase in project costs.

[Question 3e. Is there anything else regarding Theme 3 – Requirement on networks to meet connection dates in connection agreements that you consider we have missed?](#) No.

Theme 4 – Quality of connection offers and associated documentation

We broadly agree with the issues Ofgem has identified. In particular, Ofgem focus on:

- **Improving quality of information in connection offers** – the quality of the data provided in connection offers be improved (see question 4a) on securities and network data and there are opportunities to improve connection offers by including additional key information (see question 4d)

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

We broadly agree with the issues Ofgem has identified. We understand Ofgem has defined quality as 'clear, transparent, understandable, accurate, reflective of reality'. In light of that, we have commented on the two issues Ofgem has raised below.

Over-focus on timeliness of quote / offer creation

We don't believe that there is an over-focus. Timeliness of connection offers demonstrates the potential benefit of prescriptive SLAs in other areas so the existing conditions should be built on rather than replaced. Otherwise this could result in customers receiving wildly ranging timelines.

The approach to connection offers is likely to fundamentally change following the current pause in generation applications and the (presumed) implementation of connections reform. If there is a need for change to timelines after the pause is lifted, then two solutions could be i) allow an increase in turnaround time e.g. increase from 90 to 100 days or ii) allow for greater expenditure by these companies specifically allocated to this resource.

Provision of quality information

i) Securities: We agree on the information actually provided in connection offers. Justification for decisions should be provided. In particular for transmission connection offers, costs associated with attributable works, Local Asset Reuse Factor (LARF), Strategic Investment Factor (SIF) and justification of definition of attributable works (e.g. nearest Main Integrated Transmission System (MITS) nodes and no. of circuits) should be provided. An error in these values has a significant impact on short term cash flow for developers as it may result in much higher payable security liabilities, and a project that is viable may incorrectly be discarded due to an error in any of the above information. As it is, customers are encouraged to accept offers at their risk, in absence of meaningful engagement from the TO/NESO.

ii) Network data – For our Auchteraw project (see case study 4), we had completed our grid compliance studies based on fault level information provided during the pre-construction phase. However, 12 months later we received a revised set of data, which was significantly different than originally shared. This not only triggered the requirement for additional studies, but the outcome of these studies raised non-compliances which then had to be re-designed into the project at great cost. The provision of poor quality data increased our design costs and doubled our grid compliance study costs.

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

No. As with our response to previous questions, there is clear evidence that principles-based licence conditions related to connections are ineffective.

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

SLA-based licence conditions will be more effective than a principles-based licence condition.

Rather than a new standard, the new Connections Portal queries system could be utilised to create a continuously updated, comprehensive FAQ document. If NESO completed an audit of all connections queries they have received over the last year, this would give a very useful view of types of queries that come in and a view of duplicate queries. Cataloguing all connection queries and answers, in particular for common process related queries and making this a publicly available, regularly updated document would greatly minimise the volume of non-project specific queries that NESO receives.

As an extension of this point, the Q&A function from NESO connections webinars would be a particularly useful resource for this objective (particularly within the context of Connections Reform). These calls are often attended by hundreds of experienced developers, who have identified the gaps in information of the latest NESO publications and raised pertinent queries as a result.

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

The below is a non-exhaustive list of key information which would be included in a high-quality offer (noting that some are only applicable to transmission connections):

- Justification for definition of attributable works, including references to nearest MITS node and number of circuits
- Accurate Single Line Diagram (SLD) provided, showing isolators, Circuit Breakers (CBs), ownership boundary, Transmission Connection Assets (TCA) and shared works clearly defined
- Explanation of the optioneering that has taken place, e.g. a brief description of the top three scenarios and indicative costs
- Assurance that 'Bay sharing' has been considered and why it is or isn't feasible
- Assurance that alternate options have been considered (Staged offer/ANM/teed connections)
- Rather than a 'backstop date', a financial incentive for Network/System operator to adhere to construction milestones
- A milestone for NESO to request outages to the TO included in the Construction Programme
- Accurate fault level (minimum and maximum) and harmonics data

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

Appropriately charging customer for re-offers

Customers should only be exposed to the cost of Modification Applications (ModApps) when the requirements for a ModApp is customer-driven. We have been required to pay ModApp costs for changes which are only required due to a change in design policy by the network.

For example, we received a transmission BESS connection offer in North Scotland. We requested a Point of Connection with the ownership boundary being the TO compound of the new bay in the TO substation. We were informed that the developer site was too far and that a metering compound would be required, which was reflected in the connection offer provided. However, since challenging this during the post-acceptance phase, we were informed that SSE Design policy had changed and that customer sites within 1-2km would be able to have the ownership boundary within the TO substation. Even though this new policy facilitates the arrangement we originally asked for, we have been told that we needed to go through the mod-app process, at our own expense.

Accountability of NESO/ network operators when failing SLAs

There is no impact on NESO for not adhering to connection timescales. We have had two transmission connection applications that simply “slipped through the net”. We were informed of this fact a week before the offer was expected (85 days subsequent to clock start). This pushed our development timescales back but ultimately we have yet to receive any confirmation that our queue position was not affected. As our ‘countersignature date’ is ~ 6 months further along than it would have been, this may have significant material impact on the viability of this project.

Theme 5 – Ambition of connection offers

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

We agree that there is a risk of conservative connection dates being offered if SLAs associated with programme/milestones are implemented. Another risk is further under-resourcing of network operators with the additional administrative burden.

But it is concerning that Ofgem feels unable to manage this risk. Network companies are large, well-financed companies making stable returns funded by consumers. Failure of network companies to be ambitious on connections will increase costs for consumers and delay emissions reductions which (predominantly low carbon) new generators can provide. Network companies are key facilitators in the net zero transition, and should recognise their position as such and take their responsibilities to match the ambition of other industry parties seriously.

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

We agree with the proposal. Regarding “earliest achievable connection date” – not all customers want the earliest possible date. So potential wording could be something like: “use best endeavours to provide an offer for the lowest cost POC based on the customers technical requirements and requested connection date.”

2.109 – this should be captured in the NESO’s new connections reform CNDM/Gate 2 criteria methodologies

2.110 – Firmly agree with alternative solutions being offered. Agreed with the ‘opt-in’ implementation.

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

No.

Theme 6 – Minor connections (not applicable to Field)

No response offered.

Theme 7 – Provisions and guidance for determinations

No response offered.

RIO T3 – Electricity Transmission Network Incentivisation (not applicable to Field)

No response offered.

Appendix A: Case studies [Confidential]

Case Study 1

- Project: Traston Road BESS, Newport
- Size: 20MW/40MWh
- DNO: NGED, South Wales
- Connection Point: Newport South 33kV Substation
- Status: Operational

This asset went live in 2024. We encountered numerous issues with this project during the construction phase, detailed below.

Poor DNO contractors. The DNO contracted with a sub-standard contractor for the cable route. Works started later than was expected and the work took longer than was expected. Most concerningly, there were health and safety issues throughout the works. For example, in the first instance, the initial contracting team was sent away from site as they were unable to present evidence that they were suitably qualified to undertake the works. We hold our own contractors to high standards, particularly related to health and safety, and expect DNOs to do the same.

Poor service on compliance issues within the project team. The team allocated to the project showed a lack of understanding and experience of the G99 process, especially when it came to energisation, commissioning and compliance. When engaging with our DNO connection manager, rather than providing guidance to us and our contractors, the DNO would refer us back to G99 when unsure on procedure which was unhelpful.

- This issue was most problematic close to energising when a site-based engineer from the DNO was involved. The requirements the engineer was testing for were not in line with G99 or the back office side of the DNO approvals.
- Despite our best efforts, the DNO did not understand the issues until during commissioning, which caused delays with document approvals and the asset going live, costing us revenue

Accessing harmonics data. The DNO collected harmonic data from the site in order to feed that into our harmonic study to check compliance, but it seemed they were very unsure how to collect the data and interpret it. In the end they realised the data was insufficient and so we then had to come up with a new plan to collect the data.

Harmonics issues. The DNO allowed us to connect the project with known harmonics issues (simulated), albeit a very minor one. The process of then understanding a route to compliance was very muddy. As a result we invested time and effort into contracting for mitigation (a harmonic filter), which would have cost of ~£1m, with high pressure due to another project ahead of us in the connection queue connecting to the grid shortly.

The DNO unreasonably withheld details of the other project data (ahead of us in the connections queue, but not yet connected), which could have alleviated the pressure associated with the need for a filter. It ultimately transpired that the other project was connecting in three years time, relieving the need to resolve the issues quickly.

Case Study 2

- Project: Drum Farm BESS
- Size: 50MW/100MWh
- DNO: SHEPD, Northern Scotland
- Connection Point: Keith 132/33kV GSP
- Status: Approaching Final Investment Decision

Drum Farm is a development asset on which we intend to take Final Investment Decision (FID) in the coming months, with construction starting mid-2025 and operations starting mid-2026.

As we approach FID and sign construction contracts, we have struggled to source the required background information that would help inform the business case. For example, background harmonic data (for a G5/5 study) and fault-level data (for a P28 study) to inform preliminary studies help developers make more informed (and critical) decisions around investments, planning and detailed design.

These issues would not have arisen if more information were provided earlier in the connections process, and if the DNO were more engaged with our queries. Recommendation 2 and Recommendation 3 would tackle these issues, repeated below:

- Recommendation 2: Resolve key **omissions in data** currently available, most notably on demand connections, harmonics data, and ongoing use of system charges respectively
- Recommendation 3: Implement a fair but robust **incentive and penalty regime** for network companies to deliver **consistently good service** to connections customers, incrementally improving the level of the best performers and delivering a step change in the level of the worst performers

Case Study 3

- Project: Holmston Farm BESS, Ayr
- Size: 50MW/100MWh
- DNO: SPEN, South Scotland
- Connection Point: Ayr 132/33kV GSP
- Status: Approaching Final Investment Decision, estimated project completion date January 2026

The connection for Holmston Farm was initially dependent on SPEN completing reinforcement works (installing a Bus-Section Reactor (BSR) to limit fault current. The connection offer was made in April 2022

- The connection date as per our original connection offer is for June 2025. Our connection is dependent on SPEN reinforcement works. After months of chasing on the programme of these works, we were informed in Q3 2024 that these works were delayed due to the long lead time of plant to be ordered and were provided an indicative completion date of these works of April 2027. We were told this would be an issue as the customer connecting ahead of us (customer 1) had a latest completion date of Jan 2026 meaning that we would be off supply until April 2027
- In Q4 2024, we were then told that a revised completion date for customer 1 was April 2028, and that we would be allowed to connect ahead of the completion of the network reinforcement works, as long as customer 1 has not yet connected.
- There remains an open risk on this project as to whether we will be able to operate our site based on the progress of another customer. This risk is due to SPEN failing to implement their procurement process for the reinforcement works, leading to an effective project delay of 20 months from original connection date to the completion date of the reinforcement works

As it stands, customer 1 has revised their connection date to 2028, so we will not be delayed. But if customer 1's completion date comes forward, we will be instructed to be off supply until the reinforcement works are complete, due to no fault of our own and with no compensation from the DNO for lost revenue.

Recommendation 4, repeated below, would partially tackle this issue, both by incentivising the DNO to deliver on time and providing some financial redress to the connectee if they fail to do so:

- Recommendation 4: Ensure **risk on connections delivery** sits with the party best placed to manage that risk – in the context of network connections infrastructure, the incumbent network owner – through an appropriate financial instrument

Case Study 4

- Project: Auchteraw BESS
- Size: 50MW/100MWh
- DNO: SHEPD, North Scotland
- Connection Point: Auchteraw GSP, Fort Augustus
- Status: In construction

This project is in the construction phase. We have encountered numerous issues with quality of service and quality of delivery from the DNO.

Quality of service. Throughout the connection process, there was a distinct lack of clarity regarding the organisational structure of the team in the DNO managing our connection. This was particularly evident in the case of the Connections Contract Manager, who for a significant period, ceased responding to emails and failed to attend meetings. We were only informed of their departure from the team by another employee of the DNO. It then took several months to receive confirmation of a new Connections Contract Manager's assignment to the project and instructions to direct all communication through them for internal distribution. Our most frequent communication throughout the project was with a Network Design Engineer who, despite their best efforts, often appeared to be out of their depth and unable to obtain adequate support.

Recommendation 3, repeated below, would partially tackle this issue, particularly if assignment of a suitably qualified project manager and project team, and responsiveness to queries are metrics used to quantify performance:

- Recommendation 3: Implement a fair but robust **incentive and penalty regime** for network companies to deliver **consistently good service** to connections customers, incrementally improving the level of the best performers and delivering a step change in the level of the worst performers

Quality of the connection offer and follow-up. The DNO assured us that all necessary wayleaves and consents from private or third parties had been secured to facilitate the cable route from our site to the substation. We requested evidence of this which was not provided. We were informed weeks before the project's scheduled energisation date that wayleaves had in fact **not** been secured, and no contractor had mobilised to initiate the cable route site works.

Subsequent communication revealed that, due to a lack of due diligence on the part of the DNO, the TO had requested detailed information regarding the installation methodology and design for crossing the new 33kV underground cables under two sets of pre-existing 132kV underground cables owned and operated by the TO within its land area. The complexity of such a design at this advanced stage of the project caused significant delays.

If these discussions had taken place when the grid connection offer was initially made, appropriate provisions could have been implemented to enable us to energise according to the agreed-upon schedule.

Delivery of the connection. The DNO engaged a sub-standard contractor for the cable route. During their initial mobilisation, the contractor:

- Cut the lock on the gate of our access track
- Stored sand in front of the main gates of our site
- Caused unnecessary damage to the field where the cable was being installed
- Showed no evidence of plans to limit vehicle movements or adhere to a designated route

We received numerous complaints from local residents as well as the Highland Council, stating that the roads had been covered with mud and that the contractor had been working over the weekend without prior notification.

The Contractor's suitability was questioned a second time when the TO requirements necessitated a complex temporary works design. Given their poor performance on a generally simple installation, we were concerned about their ability to complete the works safely. The Contractor opted to build the temporary works structure in a controlled environment ahead of the on site works occurring. Upon visiting the temporary set up, we were underwhelmed by their efforts to install the system as per the temporary design plan.

As a result of the DNO's failure to firstly identify (at the offer stage) and secondly resolve (during the construction phase) complications with the cable route, our go-live date has been delayed from a previously agreed date of July 2024 to April 2025, a delay of 9 months. Our estimated lost revenue due to this delay is £1.8m.

Recommendation 4 and Recommendation 5, repeated below, would partially tackle this issue, both by incentivising the DNO to deliver on time and providing some financial redress to the connectee if they fail to do so, and providing recourse to developers when network company contractors do not adhere to high standards::

- Recommendation 4: Ensure **risk on connections delivery** sits with the party best placed to manage that risk – in the context of network connections infrastructure, the incumbent network owner – through an appropriate financial instrument
- Recommendation 5: Implement a strong, principles-based incentive regime on quality of delivery of connections, alongside the prescriptive, financial instrument-based incentive for timely delivery