

## North West Coast Connections Project

### Ofgem Consultation Response

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Date: 23 February 2017

Dear James,

#### **North West Coast Connection project - Consultation on the projects Initial Needs Case and suitability for tendering**

This response is on behalf of National Grid Electricity Transmission (NGET).

#### **Summary**

We welcome this consultation which offers a valuable opportunity to examine both the regulatory needs case for the North West Coast Connections (NWCC) project and whether competitive tendering is in the interests of consumers and communities. We have consistently advocated the need for individual project assessments for the transitional RIIO-T1 projects to assess the costs, benefits and risks of proposals to compete them. We therefore welcome Ofgem's assessment which seeks to consider some of these issues.

We agree with Ofgem that there is a need for new transmission infrastructure to connect Moorside power station and that the connection will require four circuits to meet the NETS SQSS requirements.

In terms of competition, we see this consultation as an important step in deciding whether competition in transmission is suitable for the NWCC project, and have taken this opportunity to consider if doing so could provide benefits to the end consumer. We agree with Ofgem that the Tunnel and North sections of the project cannot be competed because this would not enable the timely delivery of the project.

Based on the programme available when Ofgem published their consultation document, we can see that there may have been an opportunity to compete the South section as defined. However, due to consideration of stakeholder feedback, consultation responses from our own statutory consultation and our further consideration of our statutory duties we are proposing to underground 23km of the new connection to preserve visual amenity through

the Lake District National Park. This in turn means work needs to start earlier on this part of the project to ensure its timely delivery. Therefore based on the same approach Ofgem applied, we consider that based on the revised programme and current assumptions there is not sufficient time to complete the underground section within South package.

This leaves some overhead line either side of the underground section and Roosecote Substation within the South package that might be potentially completable. However, the value of this package of works is now closer to £100m. Consequently, we do not consider the potential benefits of competing this reduced scope of the South section would outweigh the risks of breaking the project into packages, which would add risks and additional costs for many stakeholders.

Based on a wider review of this specific project case, we do not think that any of the NWCC project should be placed under a competitive tender for a CATO due to additional costs to consumers and the potential increase in investment risk for the generation developer.

We have set out our detailed response to the questions raised in Ofgem's consultation below. Ofgem is requested to use this consultation to provide clarity at the Initial Tender Checkpoint stage on whether any package of the NWCC project will be competed. This will allow us to continue effective progression of the project and seek to align the structure of our Development Consent Order application, where feasible, with any decision if timescales permit. Furthermore, clarity over the delivery approach of the Tunnel and North section will support our engagement with the market to deliver these elements and help ensure we can secure the best prices for consumers.

We continue to seek to work constructively with Ofgem, the generation developer and other stakeholders to look at the deliverability, consumer case and other relevant issues on this project. However, at this stage we do not see a compelling consumer case for competition on the NWCC project.

I am happy to meet to discuss any aspect of this response further, or if you have any questions please contact either myself or Ellen Struthers ([ellen.struthers@nationalgrid.com](mailto:ellen.struthers@nationalgrid.com)) from my team.

**Yours Sincerely,**

*By email*

**Paul Auckland**

**RIIO Strategy and Innovation Manager (Electricity Transmission).**

**Question 1: Do you agree that there is a technical need for the project if Nugen’s project goes ahead?**

Yes, we agree that there is a technical need for the project. National Grid has a signed connection agreement with NuGeneration Ltd (NuGen) to connect Moorside, a 3,387 MW nuclear power station to be located near Sellafield in Cumbria. Under the Electricity Act 1989 National Grid has a licence obligation to provide a connection.

There is currently no existing transmission infrastructure near the proposed Moorside site, and a connection through the distribution network would require several circuits which would neither be economical nor environmentally acceptable. As a consequence, there is a need for new transmission infrastructure. This project is known as the North West Coast Connections (NWCC) project. We note that Ofgem agrees in the consultation that a transmission solution is needed as part of the “SWW Assessment – Initial Conclusions”.

**Question 2: Do you agree that connecting the Moorside site using four 400kV circuits is appropriate and compliant with SQSS requirements?**

National Grid has a licence obligation to design and operate the transmission system in compliance with the criteria of the NETS SQSS. National Grid has assessed the performance of different transmission connection options against the NETS SQSS criteria and has demonstrated to Ofgem through the Initial Needs Case that only a connection design using four new transmission circuits is compliant with all the NETS SQSS requirements. This is the minimum technical solution to connect Moorside. We note that Ofgem agrees in the consultation that four 400kV circuits are needed for transmission solution as part of the “SWW Assessment – Initial Conclusions”.

**Question 3: Do you agree with our initial conclusions?**

National Grid has reviewed the Ofgem initial conclusions at 2.41 – 2.44 of the consultation document. We agree with points 2.41 and 2.42 that should NuGen commission Moorside there will be a technical requirement for four 400kV circuits, and that the process undertaken to select the preferred option is logical and appropriate.

*Point 2.43: “the project’s design will still be subject to significant uncertainty and that it is possible additional mitigation will be required through the planning process or that additional costs will be identified as the project matures”*

National Grid has just completed the Section 42 planning consultation on its preferred connection option. Although we recognise that this is a live project and could be subject to some change, we have thought carefully about our proposals. National Grid will take into account the feedback provided by stakeholders and communities as part of this consultation alongside other factors that we must consider, such as landscape, archaeology and technical requirements. This will inform the mitigation that is required and could lead to further refinement of the solution.

National Grid proposes to submit the planning application for development consent in 2017. We are currently undertaking further survey work to gather the necessary data for the DCO application and associated design. This DCO submission will be based on what we consider to be the optimum proposals that comply with obligations imposed upon us by planning policy:

- deliver a scheme that balances the environmental, social and economic factors;
- that is in accordance with our statutory obligations; and
- most appropriately addresses stakeholder concerns.

The Planning Inspectorate can only assess the scheme that has been applied for and once we submit the planning application we would anticipate only very minor changes to the proposals within the scope of the assessments carried out prior to the Secretary of State granting any DCO.

*“Point 2.44: Ofgem reserve the right to revisit the decisions taken by NGET to reach its preferred connection option if the costs of the preferred option escalate significantly”*

As part of this ongoing assessment of the connection option being taken forward the cost estimates for the project will be reviewed as additional information becomes available. It is noted that Ofgem considers that there is a potential for the preferred option project costs to increase as a result of the incorporation of further mitigation, which we could be obliged to include. However, there is also an opportunity to reduce costs as the design of the project is developed further and there are opportunities to innovate through the delivery of the project.

We note Ofgem’s view that the costs of an alternative HVAC subsea connection option could converge with those of the preferred tunnel solution. In the cost estimates that have been presented to Ofgem, National Grid has shown that the cost estimate for HVAC is greater at £3bn (p80) than the preferred tunnel option at £2.8bn (p80). As mentioned above we think the cost of the preferred option could decrease, but there is also a potential for the HVAC option to increase in cost. We will provide updated cost estimates as part of the Final Needs Case submission, and we shall continue to consider the issue as part of our back checking process.

On a project of this scale, that is required to go through the planning process, we need to make decisions at stages through the project based upon the knowledge available at the time. These informed decisions take into account information from stakeholders and communities at a particular point in time, and often need to consider a range of uncertainties. Whilst we seek to back check our solution when new information comes available we have to consider at that point what the most economic and efficient solution for consumers would be, taking into account any consequences such as an impact on the timing of connection through taking a different course of action.

Therefore we are concerned that Ofgem could be introducing significant regulatory uncertainty if hindsight regulation were to be applied to the difficult choices we make on behalf of consumers and communities.

We are satisfied that we have reached a sufficient and appropriate level of cost understanding to allow us to select between options and have proceeded to Section 42 consultation on that basis.

**Question 4: Are there any additional factors that we should consider as part of our Initial Needs Case assessment?**

The Initial Needs Case provides an opportunity for Ofgem to assess the need for the proposed project and the selection of the technical design. As part of the NWCC project we have worked extensively with Ofgem over the past two years to provide information on the development of the proposals and provide updates as key decisions were taken. During this time we have worked with a wide range of stakeholders to help shape our solution, alongside gathering information from experts on environmental, technical and socio-economic factors amongst others.

We have set out in Question 3 our general agreement with most aspects of the initial conclusions that have been reached. We consider that Ofgem and their consultants, TNEI, have undertaken a sufficient assessment of the Initial Needs Case as part of the Strategic Wider Works process to answer the question of whether the right option has been taken forward. There are no additional factors that we think should have been considered as part of the Initial Needs Case assessment to confirm the selection of the preferred option for consumers. However, we think that as part of the consultation review Ofgem consider the importance of the views of the generator.

We are continuing to work on the development of the NWCC project and are in the process of assessing the feedback from the recent Section 42 consultation which will inform our Development Consent Order submission and the Final Needs Case submission.

**Question 5: Do you agree with our view that:**

**(a) the overall project meets the criteria for tendering?**

**(b) the potential sections meet the criteria for tendering?**

Part A

National Grid agrees that the NWCC project as a whole could meet the criteria for tendering of New and High Value and could be packaged to be Separable at the final point of connection to the existing transmission network. We consider that the extension works at Harker and Middleton substations are not Separable and a more detailed response, including our reasoning, is provided in Question 9.

We consider that there are additional criteria for tendering that need to be reviewed in the case of this project. This includes the deliverability of the project, the economic case for onshore tendering the NWCC project, transferability of the Development Consent Order and an assessment of the risks. These are discussed in our response to Question 6.

Part B

Ofgem has divided the project into three sections: North, South and Tunnel. In Table 2 of the consultation an assessment is shown against the tender criteria. We think these packages would be logical and have some detailed comments that we think would help to define them further.

**North:** Agree that this section meets the tender criteria (new, high value and separable) apart from the extension and modification works at Harker substation. We propose the

boundary is located outside of the substation at the drowndropper connection to the line traps/line termination fitting.

**Tunnel:** Agree that this section meets the tender criteria apart from the extension and modification works at Middleton substation that we consider are not separable.

**South:** Agree that this section meets the tender criteria. However, we consider this package could be subdivided further. This section could be split into two southern packages where each would meet the tender criteria:

- South 1 - underground cables in the Lake District National Park (LDNP); and
- South 2 - overhead line section between Moorside and Roosecote and Roosecote substation

Our reasons for this are based on deliverability, the ability to meet NuGen's connection dates with onshore competition, given the extent of undergrounding we have now proposed in the LDNP in response to further consideration and stakeholder views as part of our Section 42 consultation.

As stated in our response to Part A above, we consider that there are further criteria that need to be considered on the NWCC project and these are discussed in our response to Question 6. However, a key concern is the absence, in our view, of a robust Cost Benefit Analysis for consumers that looks at the decision of competing this project against the costs and benefits for particular packages.

**Question 6: What are your views on our deliverability assessment for:**

**(a) the overall project?**

**(b) the potential sections?**

**In particular, considering our analysis of the design, procurement, and construction timelines as submitted by NGET.**

We are in discussion with NuGen regarding their connection requirements, including their programme, and are working to develop a solution that meets their needs whilst taking into consideration the requirements of planning policy. The information provided in response to this consultation is a revised iteration of the proposed delivery programme to that presented in Ofgem's consultation. At the time the programme on which Ofgem consulted was submitted for the Initial Needs Case we were still in the process of undertaking the Options Appraisal of Alternative Technology (OAAT) and the proposals for the project were subject to change and further consultation. The outcome of the OAAT work has been reflected in the design for the project contained in the recent Section 42 planning consultation and the programme update has been made available to Ofgem in response to this consultation.

An updated high level programme is provided in Figure 1 below and our response to this question is based on that programme. The main update to this programme is the timescales required to deliver the LDNP cable which we consider will take approximately 5<sup>1</sup>/<sub>2</sub> years from contract award. We are currently undertaking ground investigation works in this area to get a clearer understanding of the specific conditions, which could impact our view of the delivery timescales. Ultimately we expect the timescale will be informed through our delivery tender

process, at which point there will be a full appreciation of the DCO conditions which might impart additional constraints on the programme. The programme will continue to be developed to our Final Needs Case.

Figure 1. North West Coast Connections Project Draft Programme



## Part A

National Grid does not consider that the project overall is suitable for tendering through the CATO process on deliverability grounds. As Ofgem has noted NuGen has defined dates for the following requirements:

- Site supplies in 2022 which requires the two northern circuits to be connected; and
- Connection of unit 1 in 2025 which requires all 4 circuits.

Given that the proposed timescale for awarding a tender to a CATO is mid-2020, this does not provide sufficient time for the whole of the project to be delivered under the onshore competition regime and meet NuGen's connection dates. NuGen will be providing a critical low carbon energy supply for the UK and contributing to energy security, and the transfer of the whole project to a CATO would result in a delay to the connection given the timescales in the programme.

## Part B

In our response to Question 5 we have outlined that we consider that the South package could be subdivided further into: 'South 1' and 'South 2'. Based upon those proposed revised packages we consider that none of the sections of the NWCC project should be subject to onshore tendering because there is not a consumer benefit case for doing so as the cost and complexity of onshore transmission will outweigh the benefits. Although from the perspective of deliverability alone, South 2 may be deliverable through transmission competition.

It is important to note that whilst we are mindful of particular areas of uncertainty (changes to NuGen's dates, change to the CATO implementation timetable and change to the DCO timetable (outlined in point 3.27)) we need to progress the project to meet the contracted connection date. Therefore we consider it beneficial that the competitive packages of work are established as soon as possible and in advance of the DCO submission. This may allow us to separate the physical elements contained in the packages of work and the associated requirements in the DCO submission to some extent, though some complexities will remain. These steps taken now could ease any transferability issues at a later date.

We also consider that it is important that there is no reassessment at Final Tender Checkpoint stage of the non-competitive packages identified at the Initial Tender Checkpoint stage. This will ensure packages at Initial Tender Checkpoint are progressed smoothly to delivery. We are concerned that any reassessment could have implications on the DCO and any failure to comply with the DCO conditions could result in criminal sanction.

Ofgem has separated the project into three potential sections: North, Tunnel and South and has undertaken an assessment of the deliverability of each section.

### *North and Tunnel Sections*

We agree that for the North and Tunnel sections there is insufficient time for detailed development, procurement and construction of the connection to meet NuGen's connection dates. This continues to be the case under the updated programme provided above. Therefore, we recommend that these sections should not be placed under the CATO regime.



NGET TO continue to be in a good position to deliver the North and Tunnel packages. For any package that isn't tendered under transmission competition, we will ourselves competitively tender our delivery solution to the market supplier base in order to ensure the best value for consumers. Should any package be identified for CATO delivery then our focus would be on ensuring that appropriate tender specification outputs are available to be placed in the data room and supporting the tendering process.

### *South Section*

As proposed in the response to Question 5, we have subdivided the South section further:

- South 1: underground cables in the Lake District National Park; and
- South 2: overhead line section between Moorside and Roosecote and Roosecote substation.

There would be an inherent risk to the delivery of the 'South 1' package for the connection date if this was to be competed as there is insufficient time for detailed development, procurement and construction of the connection to meet NuGen's connection dates based on the current programme.

In terms of 'South 2', whilst from a delivery perspective this could potentially allow enough time for the necessary CATO legislation and appointment process to be put in place and a competitive tender run, we do not consider that tendering the 'South 2' package of works alone provides value for the end consumer, as the overhead costs associated with the tender process are likely to outweigh any potential savings which can be achieved by competitively appointing a CATO.

We consider that breaking up the project into packages is an unsuitable approach for this project given its scale, complexity and the importance of delivery to meet energy needs. The increased costs for a range of parties and the increased risk of delays potential leading to a high delay cost for consumers far outweigh any potential benefits from competing a small section of the project.

Ofgem should therefore complete a project specific cost benefit analysis on competition for this single 'South 2' element of the project before deciding to progress it or any other small sections through the onshore competitive route. It is important that a clear consumer case is evidenced that protects and benefits consumers and communities, rather than being driven by timescales for a particular project. We set out our reasons why there is not a consumer case on this project below:

- **Delay risk:** the additional risks caused by adding a new party to a complex project could result in a significant cost if a delay to the connection occurs as a result. If delays happen to the connection, then the consequences are substantial. We have calculated a cost to consumers of ~£300m for a 1 year delay that increases to almost £900m should any delay extend to 2 years<sup>1</sup>. Further information is provided in Appendix 1 of this report.

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<sup>1</sup> This information has been previously provided to Ofgem, but is included as part of our consultation response to inform all stakeholders as appendix 1.

- **Low value of works:** the cost of the ‘South 2’ overhead line and substation package is close to the £100m threshold for tendering set by Ofgem, where Ofgem considers costs to outweigh benefits for a project to be competed. An independent study we commissioned from Frontier Economics highlighted that the efficient package size for tendering is larger than £100m and whilst we note the decision to set this threshold as the criteria for potential tendering, we do not consider that it sets an efficient minimum package size in all situations.
- **Legislation:** we note that Ofgem reference a change to the timetable for implementation of the CATO regime as one of the areas for uncertainty for deliverability of competitive tendering. Whilst good progress has been made in defining how the regime and processes will work for onshore transmission tendering this still remains at a high level. Introducing onshore tendering will require government legislation to be able to award a CATO licence, and with the pressing national priorities it’s unclear when this will happen. If legislation isn’t in place in time then this could have a significant impact on the development and delivery of the project. This could also lead to some unnecessary costs to consumers as changes are made to the DCO to make it more transferable and work is done to prepare information to be placed in a data room.
- **DCO/Land agreements:** whilst it has been noted in the consultation that development consent can be transferred, we are concerned that the complexity of this task for such a large project has been underestimated. Transferring a DCO has never been done before. Particularly, we consider that conditions that fall across the entire project such as mitigation e.g. tree planting are difficult to separate between the packages. There will also be a requirement to transfer land rights to a third party which could itself be a lengthy process.
- **Interaction with ENW works:** any package of works that is tendered will need to carefully consider the interaction with the ENW works to ensure that a coordinated delivery programme is achieved. This interaction with the ENW network is a key driver on the programme delivery timescales and should not be underestimated. As there would be more interfaces with ENW (and other statutory undertakers) they would have to manage more interactions and risk would correspondingly increase.
- **Increased cost to Generation:** there may also be a risk cost attached to the generation project itself if a vital part of the infrastructure to connect it is delivered through an unproven CATO process. This has driven a concern that competition will lead to higher financing costs for developers.
- **Substation extension and modification:** we agree with the position that the modification works at Harker and Middleton substation are not new, however we also consider that the extension works at the substations are not separable. This is because the extension works will involve connecting to the existing GIS and moving existing circuits which would more efficiently be undertaken by the incumbent as one complete package with the modification works. Therefore we propose NGET TO retain the work and ownership of Harker and Middleton substations as this option will provide economies of scale for the completion of works by a single contractor.

- **NGET readiness:** NGET TO, having developed the project is in a strong position to take it forward in a timely way and deliver a successful outcome for our customers and stakeholders. We will put forward a cost for delivering these works that represents value for money for consumers and deliver them meeting the commitments to customers and communities. Our track record on delivering projects is strong. Ofgem sets the allowance for these works, so can ensure the cost is efficient on behalf of consumers.
- **Fragmentation and costs of competition to consumers on this project:** there will be a loss of benefits that a single delivery organisation can leverage such as: securing cheaper prices from the market for the full scope of works, and the ability to flex our delivery approach to respond to issues across the full project. Onshore competition will also add additional costs to the project: costs of developing the bids for CATOs; the assessment by Ofgem and their advisors; and the costs to other stakeholders such as Highways England / Network Rail from increased interface requirements that should not be underestimated. Given the relative size of the South 2 package that might be CATO deliverable, these transaction and one-off costs may be material compared to any estimated benefits.
- **Bundling of works:** The South 2 overhead line sections would not be geographically contiguous with any other potentially CATO delivered works due to separation by the underground cable section through the LDNP. We consider that there could be a delivery cost efficiency in combining the part of these works from Moorside to North Drigg with the North overhead line works. This would also reduce the number of interface points across the overhead line and underground cable construction area.

**Question 7: What are your views on the need for overall coordination of the whole NWCC project if the project were to be split into packages with different delivery parties?**

We consider that this question relates to the construction and commissioning phase of the NWCC project if the overall works are to be delivered as discrete packages by multiple transmission licensees. We have defined coordination as: *the alignment of activities with the ability to share information on project delivery in order to identify and adapt to any changes to meet the connection date.*

We consider that coordination of the construction and commissioning phase on such a large project is essential. The successful delivery of the NWCC project will rely on there being coordination between NGET TO, any CATO and other parties such as ENW.

If the project proceeds and is being delivered by a number of transmission licencees then it will be in all parties' interests to ensure delivery progresses satisfactorily. There are already some mechanisms in place through the SO, and NGET TO that Ofgem could implement through the CATO licence (e.g. a Network Access Policy, and requirement to co-ordinate) and these should be assessed further. Therefore we do not propose that there is a requirement for an overarching coordination function.

We propose that the following existing mechanisms are used to manage the coordination between parties:

- SO: holds agreements with the customer and TO's. SO manages outages and the relationships with the Generator and has a high level view of the programme through the NOA. Able to maintain a high level coordination function.
- Transmission licence and existing STC arrangements provide requirements for TO's to coordinate and share information. It would be in the best interests of all parties to follow this for the successful delivery of the project.

Ofgem could also consider whether there is a requirement to implement any further requirements through the CATO licence. Alongside this once a CATO is appointed the CATO and NGET TO may decide to put in place a bilateral commercial co-operation agreement.

We have reviewed the options for coordination including placing an overall coordination task with the incumbent NGET TO, however we think this is unlikely to be acceptable to a CATO. Likewise, we consider that a CATO overseeing incumbent NGET TO works would not sit well with seeking to introduce competition and equivalence for parties. We also expect that any addition of an independent party to carry out a coordination function would result in significant additional costs and interfaces over the course of the delivery of the NWCC project and would deplete any consumer case for competition. Therefore we conclude this would be an unnecessary addition.

Whilst we do not propose that there is any form of overarching coordination function there needs to be a recognition that there will be additional costs for both the SO and NGET TO as a result of the introduction of an additional interface. Also, more widely the overall costs for all parties, including external stakeholders, as a result of the additional interface need to be considered in the overall consumer case for competition.

**Question 8: If some, or all, of NWCC were to be tendered, what, in your view, is the most appropriate allocation of risks across the relevant parties (TO, CATOs, and consumers)? How should these risks best be managed?**

We consider that the assessment of risk allocation should not just be limited to the delivery period, but should be reviewed across the lifecycle of the project: design (placing information into the data room), delivery, operation and maintenance and operation and maintenance post 25 years.

The main principles we think should be considered are as follows:

- the risk allocation between CATO, consumers and any party should mirror that of incumbent TO, consumers and any other party.
- risks sit with the party best able to manage them.
- where risks can't be managed by any party due to exogenous factors such as "force majeure events" or the regulatory regime (e.g. RIIO-ED1), then these should be borne by consumers to ensure that any significant unavoidable losses or gains are avoided. These are currently termed cost and output adjusting events (COAEs).

There needs to be clear liability associated with each risk to ensure this is accurately priced in CATO bids and in the NGET TO Strategic Wider Works (SWW) submission. It will also be necessary to provide clarity about how any risk mechanisms may work through the lifecycle of the project at the start so risks aren't paid for twice by consumers.

Our view is that at the stage of Final Tender Checkpoint all of the risk for the competitive works should be passed to the CATO, apart from defined events (COAEs) referenced above. Our proposed approach intends to mirror the SWW framework. Therefore risk for competed packages should be ended for NGET TO post a Final Tender Checkpoint for works progressed by a CATO.

We have considered some illustrative examples of risk allocation at each stage of the process:

**Design:** CATO should identify the risk of requiring and undertaking further development works in the tender they submit based on the information that is provided in the data room.

**Delivery:** There needs to be further consideration of the process for managing the risk of a 'knock-on' incident that impacts the delivery programme of another party, either CATO or NGET TO. It is important to understand that this could impact the reputational performance of the affected party as well as having commercial implications. Therefore a mechanism to allow the causal factors to be properly understood needs to be developed. It will also be important to capture the learning for future benefit.

**Operation and maintenance:** The CATO is best placed to manage the risk associated with maintaining the assets that they have built. One particular risk we wish to highlight for consideration is equipment type faults. Our view is that these should be treated in the same way that a RIIO regulated transmission company has to manage them by taking the risk, as a CATO selects its own equipment and could mitigate this risk as it sees fit.

**Question 9: What are your thoughts on the substation modification and extension works at Harker and Middleton, in the context of efficient CATO delivery, including the options presented in this document?**

Ofgem has noted in the consultation that they consider the substation extension works as 'new' and the modification works are not new. Three options for re-packaging these works between the relevant parties have then been set out at 3.40 in the consultation document.

We consider Option 1 - 'Incumbent TO ownership of whole substation' is most appropriate under the re-packaging options, because we consider that the extension works, whilst new, are not separable. Also, as the incumbent will be responsible for completing a large part of the works (modification) it is more efficient for the complete substation package to remain with the incumbent.

We agree that Option 2 (CATO ownership of the whole substation) is not appropriate in this case, because it would require transfer of existing assets and a requirement for due diligence by bidders.

We also consider that if Option 3 (Ownership of substation split between CATO and incumbent TO) were to be taken forward at either Harker or Middleton substation that there would need to be consideration of several additional issues, which include duplication of:

LVAC supplies, telecoms, welfare facilities, direct current supplies. These have not been considered for separation in the design work that is being carried out for the Development Consent Order (DCO) and have not been accounted for in the Environmental Impact Assessment. Any additional requirements from the result of a split of the works could have an impact on the DCO consent. Therefore this option should not be taken forward.

Under Option 1, our proposal for the package boundary would be the downdropper connection to the line traps/line termination fitting. The reasons for this selection are set out for each substation below.

### Harker

The works required at Harker substation include extending the existing GIS substation to connect into a new AIS extension. Electrically this will be operated as one substation. Alongside this three existing circuits (Gretna, Moffat and Hutton1) will be relocated from their current location to the AIS extension. These existing bays within the GIS substation will then be operated as Stainburn 1 and 2.

This is illustrated in the Figure below. A clearer view of the figure can be found at: [http://www.northwestcoastconnections.com/docs/RouteAlignmentDocs/Volume%203%20-%20Plans%20and%20Drawings/Volume%203.7\\_Site\\_Layout\\_Plans/Site%20Layout%20Plans.pdf](http://www.northwestcoastconnections.com/docs/RouteAlignmentDocs/Volume%203%20-%20Plans%20and%20Drawings/Volume%203.7_Site_Layout_Plans/Site%20Layout%20Plans.pdf)

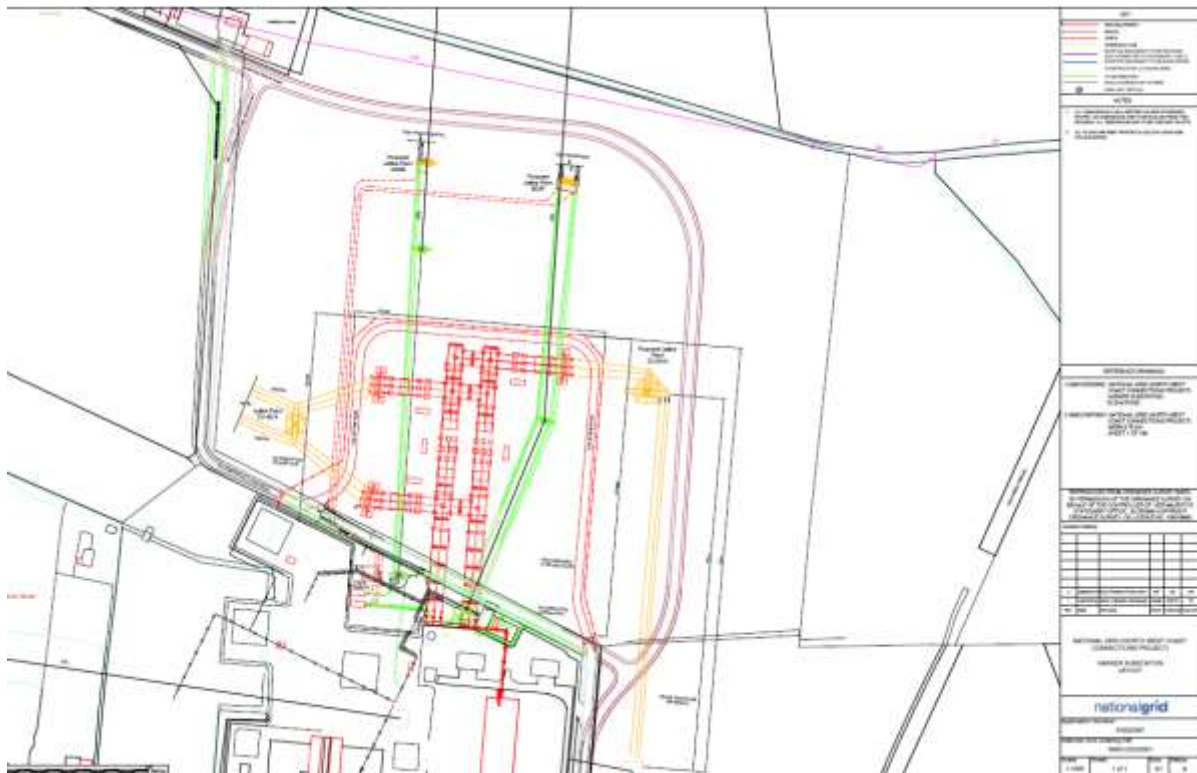


Figure 1. Harker substation site layout plan

The modification and extension work at Harker substation will result in a single compound. In this situation the works are more complex than an extension of an existing busbar as they involve transfers of the existing circuits (Scottish circuits referenced above) and the existing protection and control equipment. If this work was to be undertaken by a CATO it would require works on existing NGET assets within the existing substation, and an increased level of coordination to ensure there is no detrimental impact to the Scottish connections. We

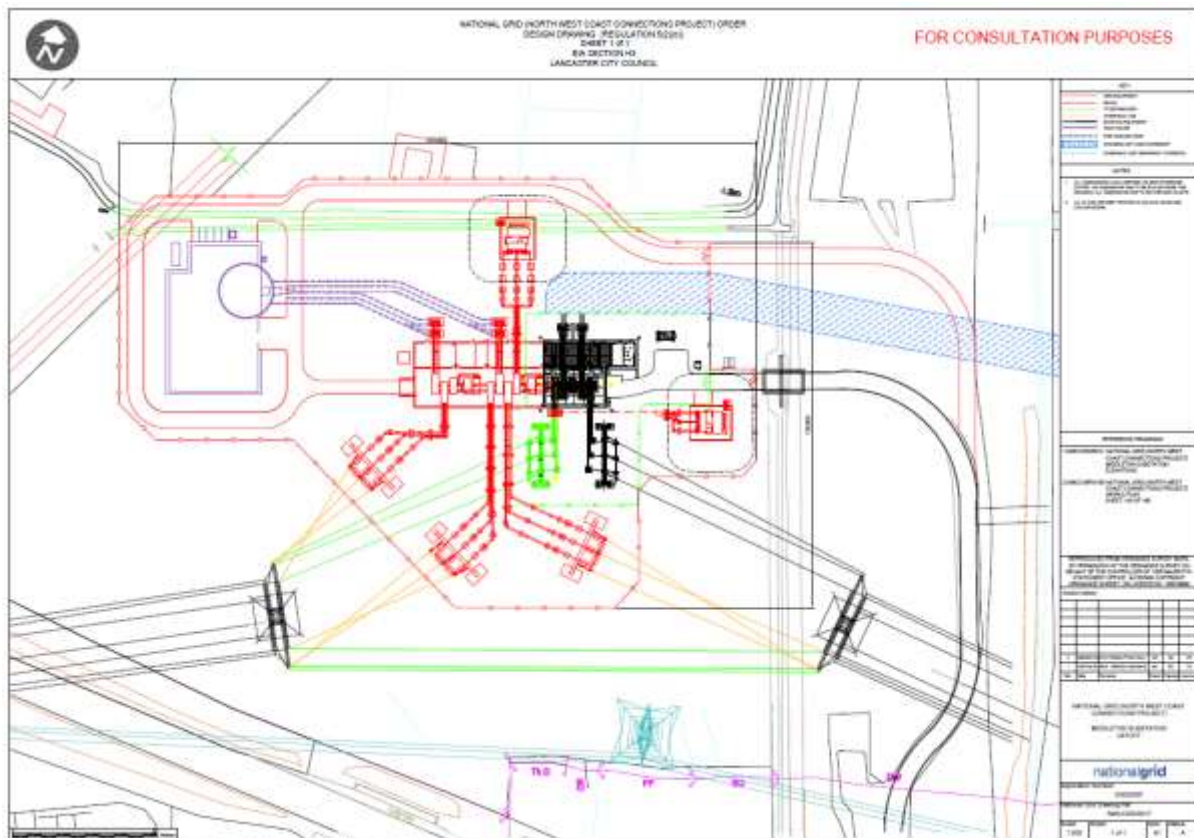
consider that this will increase the safety considerations and the working risks at the site, which ultimately could increase the costs of completing these individual works above the costs of completing these as one package.

As this work interacts with our existing substation assets we do not consider it separable. If it were to be undertaken by another controlling party, then we would require adjustment to our energy not supplied incentive such that any event would be excluded from our incentive.

Furthermore, the works at Harker are programmed to be delivered for 2022 to meet NuGen's requirements for site supplies. Therefore we do not consider that these works are deliverable under onshore transmission competition as there is not sufficient time to undertake design, procurement and deliver to meet the connection date.

### Middleton

The works at Middleton will involve an extension of the existing GIS substation to accommodate the new feeder bays and bus section. The completed footprint of the substation will include the substation extension as well as the tunnel head house. Figure 2 below shows the proposed layout at Middleton.



The image of Middleton above shows the existing building, and GIS within, in black and the extension of both the building and the GIS in red to the left of it. The purple structure shows the head house, tunnel shaft and cables connecting to the extended GIS substation.

At Middleton substation the switchgear that can be used on the extension will be defined by the switchgear in the existing substation because of compatibility issues. This means there are limitations on the supplier base, and a single source contract for new equipment would

have to be used. We already have a competitive framework in place for equipment supply and therefore we consider there is limited value in transmission competition at this site.

At Middleton substation the key issue in relation to the separation of works is that there will be transfer of existing assets onto the extended substation which is bridged between the substation modification and new tunnel head houses. All of these works need to interface with the existing site and therefore there is an economy of scale in assigning these works to a single transmission owner.

In conclusion, we propose Option 1 is taken forward at both Harker and Middleton substations as this option will provide economies of scale for the completion of works by one contractor on behalf of NGET TO. This will also help to avoid any increase in safety risks for parties working in compact areas.