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Dear James

Extending competition in electricity transmission: arrangements to introduce onshore tenders

Executive Summary

This response is on behalf of National Grid Electricity Transmission plc.

We support the work that Ofgem is undertaking to explore the potential introduction of onshore competition. We fully recognise that introducing competition into markets is generally a good way to deliver value to consumers and this is something we embrace in our day to day activities when engaging with our supply chain.

Onshore electricity transmission assets constitute critical national infrastructure and it is vital that the possible introduction of competition has a thorough regulatory impact assessment that covers the potential consumer and broader stakeholder impact. We believe the work undertaken by Ofgem to date provides a good starting point for further stakeholder engagement. However, the current regulatory impact assessment draws too heavily on the Offshore Transmission Owner (OFTO) experience without adequately accounting for differences between the onshore and offshore regime. For example, under the proposed onshore regime, competitively appointed transmission owners (CATOs) would be undertaking major construction activities and this has not been a feature of the OFTO regime to date. We also think it is important in weighing up these critical questions to explore different experiences of competition beyond the OFTO space. This is something we start to address in this response.

Given the fundamental nature of the changes being proposed to the regime, we commissioned two pieces of independent work to help us understand better the potential benefits, costs and risks associated with introducing competition into onshore transmission assets. The first piece of work, undertaken by Frontier Economics, was to provide a cost benefit analysis relating to the potential introduction of CATOs. The second, undertaken by Navigant, was to explore key lessons from the introduction of competition into onshore transmission assets overseas. Both these independent reports highlight important areas to consider when developing the CATO regime and are attached to our response. These form part of our contribution to aid further discussions on how, where and when to introduce competition for onshore transmission assets.

The key insights from the independent studies and our own engagement with our stakeholders are set out below. The cost benefit analysis undertaken by Frontier Economics (Appendix 2) identifies that:

- The benefits of competition, though potentially material, are limited in scope. In particular while debt cost raised in the current market will be lower under a CATO model than under RIIO-T1, this is a consequence of prevailing market conditions and the introduction of competition will not alter this.
- There are material administrative costs, transactional costs, loss of some coordination and economies of scale which mean the late CATO model is only likely to be preferred for large scale projects. The Frontier analysis suggests a project breakeven point of greater than £250m.
- The assessed potential benefits of competition are higher for larger projects, however these projects are likely to be more strategically important and the cost of delay arising in these projects will be greater. Frontier Economics have not included the value of delay costs/risks in the quantitative CBA but have estimated the approximate scale of risk to give an indication of the likely impact. The analysis shows marginal increases in the risk of delay and/or marginal increases in the perceived risk of delay impacting a developers cost of capital, could easily eliminate the potential benefits of the CATO model.
- Early tendering could deliver innovation reducing cost, but results in weaker competitive pressure on actual build costs when compared to the Late CATO model. Whether the early CATO model is overall preferable to the Late CATO model will be project specific and depend on the scope for innovation gains.
- Frontier Economics identify a number of observations on the Regulatory Impact Assessment undertaken to date which includes a view that the analysis draws too heavily on the OFTO regime without adequately accounting for the differences.

The conclusions from Navigant (Appendix 3) include the following:

- Whilst steps have been taken towards some countries introducing greater competition in electricity transmission, there is very little history and experience to draw on with regard to completed projects. This means lessons that encompass success and failure of delivery, implications for ongoing maintenance and the ultimate impact of competition on system reliability are limited.
- Considering the whole of life costs, rather than just upfront costs, is important (and difficult) and there is some evidence that a tender process introduces a bias towards capital rather than opex based solutions.
- Experience in all markets highlights the criticality of having a back-up plan and provider of last resort should the transmission provider fail to deliver.
- The additional complexity in planning for and establishing transmission under a competitive arrangement should not be underestimated. This has an obvious transaction cost for the regulator and SO. The broader inefficiencies in planning and delivery timeframes, coordination of multiple players and the impact of less clarity of responsibility between SO and TO, including the potential impact on reliability, are significant, but difficult to quantify.

Our overall assessment, taking into account the independent studies and our own engagement with our stakeholders, is:

- The two independent studies provide important information which should be considered in exploring how, where and when to introduce competition into onshore transmission assets.
- Our engagement with stakeholders reinforces our view that we are now at a stage where it is critical that generators, developers, network owners, policy makers, community groups, NGOs and end consumers are all fully engaged in assessing the potential impact of the CATO regime before fundamental decisions are taken. Any changes have the potential to impact on customers, communities and the environment for years to come and it is crucial that we all take the time to get this right.
- Engagement needs to take place on both the development of the general CATO regime but also on a project specific basis, as the Frontier Economics analysis highlights any actual or perceived risk in delay could more than exceed the potential benefits of introducing onshore competition.

In summary, onshore electricity transmission assets constitute critical national infrastructure and it is vital that any changes to the regime are developed to be of benefit to consumers both in terms of costs and in terms of security of electricity supply. It is vital that time is taken to get this right. Our own analysis and stakeholder engagement suggests that further work is needed in five key areas, namely:

- i. the potential *benefits* of onshore competition,
- ii. the potential *costs* of onshore competition,
- iii. the *risks* associated with onshore competition,
- iv. the *tender model* itself: and
- v. the *management of conflicts of interest*.

These areas are considered in turn in the sections below:

i. The potential benefits of onshore competition

Whilst there could well be circumstances in which onshore competition delivers financial benefits to consumers, many of the reference points cited in the consultation require further assessment. In particular, there is an over-reliance on analogies to the OFTO regime which do not properly account for the differences between onshore and offshore transmission.

The risk reward trade-off for projects so far competed in the OFTO regime is very different to that which would exist under an onshore competition regime as OFTOs do not have any construction risk, do not expose financiers to a large asset transfer risk at the end of the revenue stream and do not involve the same complexity in relation to structuring and evaluating bids.

Moreover, many of the suggested benefits that might arise from twenty five year revenue streams and higher gearing levels are regulatory framework questions that should be considered independent of issues relating to competition in onshore transmission. The possible benefits of the twenty five year revenue stream and competition need to be seen as very separate questions.

An OFTO analogy which needs to be fully explored with potential onshore developers is the potential impact on a developers project of introducing competition on onshore transmission, particularly if the transmission works provide the generator with access to the energy market. We are aware the risks associated with introducing competition into the build of offshore transmission was a concern to offshore developers and it is important that the views of onshore developers are similarly understood in considering how and where to introduce onshore competition.

The Frontier Economics work also identifies that some of the possible financing benefits that have been cited for the OFTO regime are in essence an accident of timing. In particular, project financing is cheaper than RIIO-T1's ten year average because debt costs have fallen over time and are presently low. OFTO project financing would seem comparatively expensive if viewed at a point in the cycle when interest rates had risen substantially. In essence the existing National Grid Regulatory Asset Base (RAB) (as with all incumbent Transmission Owner RABs) is the consequence of multiple financing arrangements that have come about at different times and constitute a wide range of debt of different ages. Care needs to be taken when potentially comparing single project arrangements that occur at a particular point in time, to these arrangements which reflect a much wider range of projects which initiated over very differing timescales.

Similarly, twenty five year revenue streams and allowable debt gearing levels are separate questions to those relating to competition. The consultation cites potential 90% gearing. RABs are built on a degree of gearing and the NGET RAB is essentially constructed around a 60% debt, 40% equity arrangement. We maintain a credit rating consistent with this grading and these reference points have been set to ensure that customers are protected from the potential risk of default. Existing transmission licences could be amended to facilitate a higher gearing for major investments akin to Ofgem's 90% suggestion, if such a move was seen as desirable for consumers. However, this would bring with it increased risks of parties defaulting which in our view would have serious adverse consequences for consumers. As such, it is our view that such a step should only be considered after significant further detailed examination. Enabling different financing arrangements than those under the RIIO regime to deliver potential value to consumers is therefore an option for Ofgem without introducing competition.

We would also note that twenty five year revenue streams are being advocated in part because it is felt that investors will not be prepared to invest upfront for assets over a longer time period. This is not an issue for incumbents and the potential consequences do need to be properly understood. Shorter revenue streams *could* have an impact on associated CATO incentivisation and decision making. Certainly it will be important that care is taken to ensure that the associated regulatory regime still means that asset decisions are taken on a whole life basis as there is a risk that there is not a sufficient incentive on CATOs to plan long term to maintain and extend the life of assets beyond the 25 year period.

We explore the early and late tendering models in more detail later in this response. However, it should be recognised that they may have different benefits for consumers. Hence it is important to preserve the optionality of both approaches, such that the appropriate decisions can be made on a project by project basis. Essentially the trade-off is between the ability to lock down bids and potential cheaper finance package benefits in the late model, relative to the potential engineering and innovation benefits that are more likely to come about under the early model.

ii. The potential costs of competition

In assessing whether a cost benefit to consumers will accrue from onshore competition, there are three key areas of costs that need to be assessed. Namely cost to achieve, whole life costs and any variations in operational costs that come about due to an increase in operational complexity. We believe that contractor costs are unlikely to change significantly as a consequence of competition as the supply chain is already contested, but equally we recognise that these proposals would introduce competition into other direct costs and ongoing operational costs.

In terms of costs to achieve, the nature of some fixed costs inherent in running a tender process mean that the possible benefits of competition will be more marginal on smaller projects. Indeed Ofgem's consultants have highlighted that the benefits for projects of circa £100million are negligible, with the Frontier Economics report suggesting the breakeven points even higher (circa £250m). However, we acknowledge that there may well be circumstances where the potential benefits outweigh the direct costs.

In addition to the direct costs associated with introducing competition into onshore transmission assets there are also potential indirect costs that need to be further explored. For example, if investors in generation projects perceive an increased risk associated with the introduction of competition (as was the case in the Offshore regime) this could impact on their cost of capital. More work is needed to assess these potential indirect cost implications as it would not be in the interests of consumers to introduce competition if the indirect costs outweighed the potential savings on competed transmission assets.

iii. Risks of competition

In previous responses we have highlighted our concerns that the introduction of competition could result in new risks to the users of the network.

The electricity transmission system represents critical national infrastructure. The feedback we continually receive from stakeholders is that whilst they do not want to pay extra to have the existing 99.99999% reliability further improved, they do not want it to decrease reliability either. Ensuring that these standards can be maintained should form a key test as to whether the potential levels of risk associated with any changes to the regime are worth taking.

A competition for onshore transmission assets will presumably be based materially on price and it is important to understand whether this might lead to risks involving compromises on visual amenity and environmental standards, that could affect communities and environmental interests. It is crucial that these possible risks are properly explored and mitigated in the next phase of development and many stakeholders will need to be involved in this process.

Transmission customers and consumers should not be exposed to undue delay as a result of any change in delivery approach and we maintain that this needs to remain as a key principle. We fully recognise that incumbents are not immune from delays but it is important that a regulatory impact assessment considers factors that may potentially increase the *risk* of delays, for example, the risk of delays that could flow from introducing new stages and additional interfaces into the *process* or risks associated with running activities in parallel to avoid project timescales being delayed.

The ability of bidders to manage unexpected events that may arise during delivery (e.g. protestors, severe weather) and minimising the likelihood of a newly appointed CATO defaulting

during construction will be important elements when developing the regime and the bid criteria. The timetable for introducing competition is challenging and ensuring the factors, which could increase the risks of delay, need to be fully considered if transmission customers and consumers are to benefit from the introduction of onshore competition.

Frontier Economics in their report recognise it is difficult to include the risk of delay into the cost benefit analysis but have undertaken some analysis to estimate an approximate scale of potential impact. Section 5 of the report describes the approach taken to the CBA and provides analysis that suggests marginal increases in the risk of delay would result in the potential costs exceeding the likely benefits of competition.

Putting aside whether any of the above risks of delay materialise there is a risk that competition may also increase the financing risk for new power stations due to uncertainty and the *potential* for delays being added into the process. In our view, particularly given current plant margins, it is critical that all relevant stakeholders are fully engaged in the decision making process as to whether an asset should be contested. In particular where re-enforcement work is taking place for a single developer, that developer needs to be fully consulted. Investors in these projects need clarity and a chance to engage with decision makers on the potential consequences of contestability on financing/ quantification of risk/ delays and so on. Whilst others can speculate on these consequences, only those closest to the project can know what it will mean for them and their insights should be fully considered.

As an initial reference point, Frontier Economics in their report (section 5) calculated an increase of less than 5 basis points in the average project lifetime required return on equity would eliminate the likely benefits of the late CATO model (based on a nuclear developer).

Whilst the assumptions behind the Frontier Economics analysis on the potential costs associated with the project delays (perceived or actual) are open to challenge and interpretation, the key point remains that understanding these risks and the potential impact on power station developers is critical.

The information described above indicates understanding the potential risks associated with introducing competition need to be considered in parallel with the potential benefits. The consumer case for introducing competition into onshore transmission assets needs to be considered on a project by project basis and in conjunction with key stakeholders, such as power station developers.

iv. The appropriate tender model

We recognise that if a tender is to be run in the near term, it will have been de-facto developed to the point of consents by the incumbent TO and therefore will in effect be a “TO late” model. We believe, as supported by the Frontier Economics analysis, that on an enduring basis whether the early or late tender model is potentially preferable will need to be a project specific decision. As such, we remain concerned with Ofgem’s view that in the medium term an “SO late” model, where the SO will undertake all detailed design and consents, should constitute the favoured approach. It is our contention that the enduring late model may represent a sub-optimal approach for consumers for the following reasons:

- The enduring late model, where the SO undertakes consenting for another party to construct, makes it difficult to align incentives in the interests of consumers. Ensuring the SO has the right incentives and capabilities to drive innovative engineering solutions

will be difficult in an organisation which is not an asset owner and that does not have the experience of constructing assets.

- Ensuring the SO has the right incentives and capabilities to obtain optimal consenting solutions balancing the needs of consumers and communities will also be a major challenge.
- We are particularly concerned about a regime in which National Grid, makes promises to communities, that another unrelated party ultimately has to deliver on. The development of further onshore infrastructure requires sensitive collaboration with communities and other stakeholders and the importance of long standing relationships should not be underestimated. Ofgem's preferred "late," tendering model entails a project not being put out for tender until the consenting work has been undertaken. This would potentially see one party making promises to communities at the consenting stage, whilst not going on to build and operate the assets. We are concerned that communities will inevitably have less confidence in and a weaker relationship with all parties under these arrangements, than they do today.
- We are aware that a number of Scottish parties are arguing strongly that consents cannot be legally transferred in Scotland. Even if the legal difficulties could be overcome it is not obvious National Grid, as SO, undertaking consenting activities in Scotland on behalf of a third party would be welcomed.
- In the late model significant work will have been undertaken by the SO in preconstruction and consenting activity. There is inefficiency and risk in handing over a project at that point of development. We are not aware of any examples worldwide where competition has been introduced that create a handover at the point proposed in the late model.

In addition to the points raised above we are acutely aware that the energy market is going through fundamental change with increasing complexity associated with distributed generation, "smarter" households and the need to develop a much more active demand side response market. It would seem to us that the SO focussing in these areas provides more "bang for buck" value wise for consumers than the SO replicating existing TO work on pre-construction and consenting activity.

In our view, given that the first contested projects are likely to take place under a transitional TO "late" model, a significant window of opportunity exists for the industry to properly work up both the enduring "late" and the "early" model. As part of this work we think there are two potential alternative late models that should be considered, namely, either the incumbent TOs could undertake the consenting, or consenting work could be competitively tendered, and the early model should be further developed using some of the international experiences identified in the Navigant report. We are keen to develop these models further with Ofgem and stakeholders.

In developing the enduring early and late models with stakeholders clarity should be provided around the obligations, capabilities, incentives and remuneration for undertaking any activities as well as understanding the associated risks and rewards for the parties concerned. Fully understanding and agreeing all of these parameters will be a pre-requisite for us in determining whether we can willingly take on these obligations.

v. The management of conflicts of interest

We agree with the principles Ofgem highlight in relation to the management of conflicts of interest. The need for proportionality, transparency and a level playing field are all critical factors of conflict mitigation which we support. We look forward to working with stakeholders to build on

the set of high level principles that have been set out, in order to develop a more detailed set of proposals that can then be scrutinised further. In particular we would suggest Ofgem work with the industry to agree the rules around Strategic Wider Works projects as a priority, as it is likely the first contested projects will be drawn from this category. We agree with Ofgem's statements in the consultation that the regime should be developed to enable the incumbent TOs to bid in the process, as we believe this will deliver value to consumers.

We will continue to take a proactive approach to ensuring that potential conflicts of interest and the associated mitigation measures are closely scrutinised and appropriately managed as has been demonstrated with the implementation of our role as delivery body under EMR and the new enhanced SO activities. We continue to believe that transparency is the key in terms of information, processes, methodologies, compliance statements and stakeholder engagement with regulatory oversight.

Our answers to the specific questions raised in the consultation are contained in the attached appendix. We are happy to discuss our views contained within this letter and appendix further should that be helpful. For further details, please contact Ben Graff ben.graff@nationalgrid.com.

Yours sincerely

[By email]

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Appendix 1: Answers to consultation questions

Chapter: Two – What will be subject to competition and how will we identify those projects?

1. *What are your views on the proposed detailed interpretations of new, separable and high value (the ‘criteria’)?*

The high level approach to new, separable and high value seems reasonable and we recognise that some further detail has been developed since the previous consultation. As highlighted in our previous response we believe that radial projects are best suited to serve as the pilot for the contestability regime. We have also highlighted in the main body of our response that in addition to these criteria, the critical nature of projects should be taken into account when determining whether a project should be contested. Equally projects being competed should have a single driver. This will enable projects to be delivered at the most economic and efficient time for consumers as they will only be dependent on one factor.

When considering what constitutes separable assets, the definition needs to evaluate factors such as ensuring that the assets deemed as separable do not materially impinge on the reliability or performance of other party’s existing assets or property, that the extent of the impact on wider system performance is considered and that the added complexity caused by separate ownership should be appropriately assessed.

We are supportive of the approach that new should mean new. However, we have concerns over the proposals in relation to the potential repackaging of works that do not meet the criteria in the first instance. It is vital for all parties that the rules here are clearly and transparently defined (for example incorporating the principle that re-packaged work must be under-pinned by a common driver.) A revised Network Options Assessment (NOA) methodology should define whether projects meet the criteria and should only be revisited if there are significant changes to the project scope.

There has been limited CBA to date which justifies the £100m high value threshold. We note Cambridge Economic Policy Associates Ltd’s view that projects of £100m are at the cusp of tendering economic efficiency and this assessment should be considered in any enduring model when Ofgem may potentially look to reduce the high value criteria threshold, as noted in paragraph 2.5.

Our views on electrical separability are covered in our response to question 3.

2. *Under what circumstances do you think asset transfer from an existing asset owner to a CATO would be required, recognising the principle that projects identified for tendering should be new?*

We agree that the transfer of assets from an existing asset owner to a CATO should be limited, particularly given the proposed definition of the new criterion. To provide certainty in relation to ownership responsibility and associated liabilities, we believe it is important that assets are not shared.

Regarding Ofgem’s examples of assets to be transferred:

- It is fair for preliminary works to be transferred to the CATO to reduce the duplication of work when this is properly remunerated.

- We are concerned about the viability of transferring land relating to assets. This is particularly an issue in Scotland where it is not clear how this could work under Scottish law. This also raises wider community concerns as TOs / the SO would have made assurances and built relationships with communities and land owners during the preliminary works stage. It is essential that these assurances are enforced and delivered during the build phase, however the trust between parties would be difficult to maintain in any enduring late model where consenting and delivery are to be separated.
- We believe that assets which need to be decommissioned and replaced should be treated on a case by case basis. In some cases it will be more economical for the incumbent to decommission the assets ahead of them being replaced by a CATO; however in others it could be more efficient for the CATO to undertake all the work.

3. What are your views on our proposal that electrical separability should not be required at each interface, but that the SO can propose it to us if it thinks there is a cost-benefit justification based on system operability?

The approach proposed by Ofgem that it should be for the SO to provide a justification if electrical separability would be required for specific parts of the network is fair. Electrical separability would be difficult to subject to a cost benefit analysis due to the volumes of uncertainty over likelihood and frequency of issues arising. However, we do believe that a risk assessment would be suitable on a project by project basis for circumstances where the SO believes that electrical separability is required for the efficient operation of the network. We are happy to work with Ofgem and industry to develop the details of how this will work in practice.

4. What are your views on the suggested process and roles for identifying projects for tendering?

- **We have proposed specific roles for the SO – do you think there are any additional roles the SO could take on to support competition?**
- **What's the most appropriate way to ensure that the network options assessment (NOA) considers the widest range of network options, including those that would be tendered?**

We believe that much more detail is required in order to establish how projects will be identified and a range of options provided into the NOA process. We agree that the NOA report is best placed to identify projects for tendering, however the proposals are a very significant change to the methodology agreed for the first NOA report in March 2016. It is essential that we have clarity on what is expected and within what timescales in order for the NOA to evolve appropriately and so, to ensure that we can meet the requirements expected from Ofgem and industry.

The SO is best placed to identify alternative no build or commercial solutions for projects. The SO however, is not an expert in asset build options, innovative asset solutions and the environmental conditions across the whole of GB which are required to drive different options. We have noted previously how the early model will provide the most innovative and widest range of solutions which can deliver consumer benefit. The early model clearly links with CATOs providing solutions into the NOA process which they will then be able to compete for and design in detail as they have the expertise in this area.

We will always keep under active consideration whether there are additional roles the SO should take on to facilitate onshore competition and look forward to continuing to explore this and the appropriate incentivisation framework, further with all parties, as the ECIT process develops.

To avoid duplication of resource and for work to be undertaken by experts, as much as the competitive process as possible should be undertaken by the party delivering and being accountable for the asset.

5. *What incentives and obligations should the SO and TOs have for undertaking preliminary works for tendered projects, and is there any value in considering a success fee incentive?*

For the preliminary works undertaken by the TO for projects in flight, and by the SO in an enduring model we agree that there is value in considering a success fee which could be linked to the value of the project being tendered. We believe that a balanced scorecard approach is the most relevant and would allow for several areas to be considered. We agree with Ofgem that clear criteria would be required to reduce the subjectivity of the scorecard particularly in the context of timely delivery where this depends on the decision making of third parties. Due to the nature of the incentive, it appears to be more fitting to have this as a cash sum i.e. upfront at the point of a successful tender rather than over the whole asset life.

It is essential that outside of the incentive, incumbent TOs and in the future the SO are properly funded for activities undertaken to support the tender process. Filling data rooms and responding to significant volumes of questions is essential for a successful tender and is likely to be a very time consuming and costly activity.

In addition, based on the proposed NOA model of the SO and TOs providing options, in future price controls, both the SO and TOs will require pre-construction funding in relation to developing these options. It seems most appropriate to have provisions in the System Operator – Transmission Owner Code (STC) to ensure that the incumbent TOs provide options into the NOA process. There are potential incentives which could be introduced at this early stage to ensure that a wide range of options are brought forward.

We believe that more clarity is required around liabilities for preliminary works but fully agree with the general principle that it is inappropriate for the CATO to be indemnified by the SO in respect of such preliminary works. All of the information regarding preliminary works will be available through a data room, and therefore it will be the responsibility of the CATO to undertake due diligence on all areas of the design and consents etc. Ofgem note that a licence mechanism could allow CATOs to recover economic and efficient costs incurred by them due to problems with the preliminary works. To safeguard consumers, such cost recovery should be limited only to those matters which were unreasonable to foresee during the due diligence stage.

6. *Should CATOs pay for the preliminary works at the point of transfer?*

We support the Ofgem proposed option that the CATO should not pay for the preliminary works as this avoids unnecessary circular revenue flows. It also better matches the timing of the costs and revenues associated with the preliminary works, allowing them to be substantively concluded by the time the preliminary works are transferred. Moreover, if the CATO does not pay for the preliminary works, it does not need to raise extra finance to fund these costs; therefore consumers do not need to pay the associated financing costs. The costs would then be recovered as they are incurred.

On a related note we are assuming that these costs are recovered through TNUoS as they are assets based charges, rather than BSUoS which recovers the cost of operating the system.

This more closely represents how these costs are recovered today. In order to ensure that these costs are recovered correctly the NGET licence is likely to require changes to reflect the different roles of the SO and TO. Indeed to ensure appropriate non-discriminatory treatment of the TOs, OFTOs and CATOs there are a number of areas of the NGET funding that should be reviewed to ensure that they remain appropriate and that the risks are correctly apportioned. For instance, management of various innovation funding mechanisms, recovery of inter TSO payments, management of under and over recoveries of TNUoS are possibly SO roles.

Chapter: Three – How will the tender work and what will CATOs get?

1. What are your views on our proposed late CATO build tender model?

Including:

- ***the basis of bids;***
- ***the use of cost sharing factors; and***
- ***what risks, if any, it would not be efficient for a CATO to manage during construction.***

In question 4 we outline the rationale that underpins our reasoning for why we consider that, whilst there may be potential benefits arising from competition to consumers under the early build tender model, under the late model we consider that there is a risk of any benefits being outweighed by the costs. Notwithstanding this, the following comments outline our views on the late tender model if Ofgem were to proceed with this option.

It is important to note that the successful bidder of a CATO tender will be awarded a licence (or an extension of an existing licence) as a transmission owner. This fundamentally distinguishes the CATO tender from other competitive tenders that are contracts for the delivery of products and/or services and it is important that the tender model arrangements fully recognise the legal responsibilities conferred on the CATO for the full revenue term (25 years).

In line with the existing price controls for incumbent TOs, we support the principle that, whether arising as part of the construction or operation phase, project risks are best placed with the body that is in a position to manage those risks. As such, the vast majority of risks should be allocated to the CATO.

A comprehensive and robust assessment by Ofgem of CATO bids will be critical to the cost effectiveness of introducing a competitive tender process. Bidders will have differing perceptions of the risks involved and are likely to make varying allowances for those risks in their bids. There is a clear possibility that, in seeking to provide the most competitive tender, bidders will not adequately price in all the risks associated with the project. Successful bids should demonstrate that full account has been taken of those potential project risks which the CATO can influence or manage through the use of hedge or insurance instruments. This includes variables such as project delays due to securing consents or asset procurement and global commodity price fluctuations. To drive the right behaviours on this, as noted in Ofgem's consultation we support that the scope for reopeners in the revenue stream should be limited.

By their nature the timely and successful delivery of these projects will be critical to system security. As such, we agree with the requirement for the successful bidder of a project to provide some form of security finance (as referred to in paragraph 1.167 Appendix 5), such as bid bonds, to ensure that they are sufficiently incentivised to bid at levels that are representative of what they can feasibly achieve and to ensure they remain committed to the lifecycle of the project.

We agree that it is appropriate to designate elements that are entirely outside the control of the CATO, such as business rates and fundamental changes to health and safety legislation requirements, as cost pass through items. We also agree with Ofgem's initial views that the use of cost sharing factors may be appropriate under limited circumstances but should be avoided where possible under the tender revenue stream model of remuneration. Having a tender revenue stream concurrent with sharing factors is likely to create the risk of bidders making different assumptions for service delivery; this could make the task of performing a comparative assessment of the value of bids at the tender stage more difficult and less transparent.

Paragraph 1.90 (of Appendix 3) highlights the potential issues and delays that may arise from the proposed transfer of necessary land access rights, under the late model, to the CATO. We have concerns regarding the legality of transferring rights and consents to the CATO, particularly given the commitments and obligations that are often required to be made by the applicant when obtaining such planning permissions.

We would also highlight another potential CATO risk, which relates to the needs case changing or being deferred, after the CATO has been awarded the project. Something similar has come about on recent projects (for example Bramford – Twinstead) and this raises a host of practical questions as to how a CATO might deal with this uncertainty. These questions include the firmness with which the CATO could be awarded its revenue stream in the first place through to how lenders should price the cost of capital to factor in the risk of the mandate ultimately either changing or ending. These practical questions require significant further thought.

2. What are your views on our proposed early CATO build tender model?

Including:

- **what tender specification would best facilitate innovative but deliverable bids;**
- and**
- **how we can best manage cost uncertainty after the tender.**

Compared to the late model, we see the early CATO tender model as potentially offering added value for the consumer through competition. This is likely to become even more the case going forward, as integrated Transmission and Distribution solutions and integrated build/ no build decisions become more prevalent.

Primarily this is because the early model provides the opportunity of introducing new and innovative solutions to required deliverables over the lifecycle of the project to resolve the system need identified. We expand on this in question 4.

We recognise that under this model there are likely to be elements that, to achieve optimal outcomes from the tender process should be subject to a reopener mechanism. We would suggest that any non-fixed costs that enter the bid process, such as the 'best indicative cost' of construction and operations, should only be permitted to move subject to explicitly defined parameters and specified dependencies. Taking this approach should place some limits on the ambiguity between tenders that would accompany the introduction of non-fixed costs.

Regarding the tender specifications, we agree that the setting of these should be done to facilitate as broad a range of innovative designs and technical solutions as possible, however there will be a number of parameters that bidders will require of the SO and/or incumbent TO. These include: boundary capacities, reactive power parameters, fault clearance times, fault levels, impedance levels as well as compliance with the relevant electrical standards document

(depending on where the CATO is connecting¹). Ultimately, specifications must deliver the best total value for the system as a whole and will need to be carefully assessed against this backdrop. As the detail of this possible regime is developed, it will be important to explore in more detail the precise role the SO might have in assessing and potentially inputting into potential design solutions, to ensure that whatever is ultimately taken forward delivers the best outcome in terms of system operability.

We recognise the concerns outlined in paragraphs 1.128 and 1.129 (Appendix 4) regarding the balance between allocation of risks with respect to changes resulting from the planning consent process. As far as possible the design of the tender model should require strong but realistic bids at the tender stage, but should not give rise to distorted incentives that could drive unfavourable behaviours later in the process. In particular, for the planning consultation and consent process to remain meaningful a level of flexibility is required from the developer. To some extent this flexibility should be accounted for by reasonable contingencies within the bid. However, to mitigate the risk of the developer being incentivised to disregard any adverse responses to the planning consultation, it may be prudent to include some form of revenue stream reopener or cost sharing incentive to support the necessary and reasonably unforeseen changes resulting from the stage of the process.

3. *Do you have any views on the best way to tender projects using high voltage direct current (HVDC) technology?*

As well as the longer lead times for equipment procurement, the co-ordination and delivery of HVDC projects require very specific staff expertise. Tasking the SO with the initial part of a HVDC project and then passing the construction to a CATO will impose costs for the SO to recruit for and perform the necessary function, and will give rise to the risk of delays and inefficiencies resulting from transferring the project between different bodies.

Paragraph 1.98 (of Appendix 3) suggests that there may be potential for competitive tendering of HVDC projects to stimulate activity in the supply chain resulting in shorter lead times, we are not confident that this would transpire. Under the existing arrangements NGET is already incentivised to seek efficient solutions, in terms of timing delivery and minimising costs through procurement, in the supply chain. As such the potential marginal benefits of opening HVDC projects to competition may be limited, particularly set against the increased risks of delays and tendering implementation costs. If the SO is required to undertake procurement as part of the preliminary works, the number of variables by which competition can drive increased value will be fewer. We would like to understand the extent of cost savings that is anticipated from tendering HVDC projects and where these savings are expected to be made.

4. *Do you have any views on our proposal to prioritise late CATO build? Do you have any views on specific circumstances where early CATO build might lead to better outcomes than late CATO build?*

We recognise that if a tender is to be run in the near term, it will have been de-facto developed by the incumbent TO and will in effect be a “TO late” model. We believe, as supported by the Frontier Economics analysis, that on an enduring basis whether the early or late tender model is potentially preferable will need to be a project specific decision. As such, we remain concerned with Ofgem’s view that in the medium term an “SO late” model, where the SO will undertake all detailed design and consents, should constitute the favoured approach. It is our contention that

¹ E.g. the Relevant Electrical Standards (RES) applies to direct connections in England and Wales, equivalent documents apply to SPT and SHE Transmission areas in Scotland.

the enduring late model may represent a sub-optimal approach for consumers for the following reasons outlined in the main body of this response.

We would also re-iterate that we are acutely aware that the energy market is going through fundamental change with increasing complexity associated with distributed generation and the need to develop a much more active demand side response market. Increasingly integrated Transmission and Distribution solutions (and integrated build/ no build decisions) will be needed and these will favour the more early model as that provides a better basis on which to encourage innovation. We would like to see further work undertaken to further develop the early model option.

5. Do you have any views on how we could mitigate the risk of a CATO not being in place?

To avoid the adverse impacts associated with delays to or problems with asset output delivery, we agree that a transparent mechanism is needed to ensure that a CATO is in place.

In order to mitigate the risk of a CATO not being able to continue with its obligation, a thorough evaluation of the viability of the bidders' proposals should be undertaken as part of the tender assessment process. This should comprehensively assess the viability of all proposed parameters and require supporting evidence. We would also suggest (as per our answer to question 1 above) that requiring bid bonds to be put in place by the successfully appointed CATOs should serve as a form of commitment by the CATO to the project and security to Ofgem.

As part of introducing effective competition a level playing field should be maintained between all participants. This includes defined financial reward and incentive arrangements that provide protection for any CATOs, OFTOs and/or TOs that are required to fill the role of 'CATO of last resort' in the event that a CATO is not in place at any point in the project and asset lifecycle. We would like to see further details of specific mechanisms that are proposed for CATO of last resort, being mindful that the experience of OFTO projects (that have typically been generator-build) may not be directly transferrable to CATOs.

6. What are your views on our proposed revenue package for CATOs?

Including:

- ***the proposed duration of the revenue term, including how it links to the asset cost recovery period and whether operations and maintenance costs can be fixed over this period; and***
- ***our proposed approach to indexation, refinancing and enabling new asset investment?***

We have highlighted our critical thoughts on 25 year revenue streams within the main body of our response. In addition we would note here that whether or not operations and maintenance costs can be fixed over the 25 year duration, these costs can be managed more effectively by the CATO than any other body and therefore it is efficient for the CATO to carry the cost risk. Various hedging options can support the management of this risk (such as forward contracts for materials) and as part of the tender process a key requirement of the CATO would be to adequately account for the risk within their bid. Fixing the level of these costs provides a strong incentive to the CATO to perform well against the benchmark. It is appropriate that as the successful bidder, if the CATO is able to deliver at lower costs it is rewarded and conversely, that the consumer is not penalised if outturn costs exceed those anticipated by the CATO.

The tender design should contain provisions that require the CATO to operate and maintain its transmission assets to a condition standard and technical life that is in line with a 45 year asset life and we support an incentive framework that seeks to achieve this. If the residual value payment at the end of the revenue term were intended to provide this incentive then we would recommend clarifying the mechanism that determines the value as clearly as possible. A lack of clarity over the treatment of the residual value could lead to higher revenue bids than might otherwise be achieved if bidders price that ambiguity into their tenders as a bidding risk. These costs again should be considered in the whole life costs of the assets.

A clear framework should be determined at the invitation to tender stage for managing the costs of any additional new asset investments. We agree that in the first instance, the CATO is best placed to undertake new investment work on its assets. For this to be carried out economically clear mechanisms are necessary to ensure it is delivered at an efficient level of costs and carried out in a way that is optimal for the system as whole.

We agree with the point in Table 5 (Appendix 5) that the bidder-determined partial indexed revenue stream option has the disadvantage of introducing more complexity to the process of evaluating bids in the tender process. We envisage that this option would require assumptions to be made (e.g. for levels of inflation) in the tender evaluation that could fundamentally change the economic order of the bids presented. We would advocate a tender model in which bids are submitted on a common basis, this should help support a transparent and robust tender process.

7. What are your views on our proposed package of financial incentives for CATOs?

Including:

- **how we could structure an availability-based incentive to ensure CATOs operate their assets with a 'whole network' view;**
- **the proportion of a CATO's annual revenue that should be at risk; and**
- **whether there are circumstances under which 'payment on completion' would not be appropriate to incentivise timely asset delivery.**

We agree with Ofgem's view that an availability based incentive is an appropriate mechanism for driving reliable and efficient output CATO performance. In order to ensure efficient operation of transmission assets from a whole system perspective, the availability incentive should include a mechanism that encourages the CATO to take a collaborative and flexible approach to outage planning, that is, it should reward CATOs for moving planned outages in response to requests from the SO. We therefore do not think that a flat availability incentive rate, that does not recognise whether a change to an outage has been undertaken to benefit the consumer by reducing overall system costs, would achieve this outcome. One option to enable this would be to exempt an outage that has been requested by the SO from the CATO's availability incentive. In addition, the incentive should take into account reliability to drive the right behaviours for planning maintenance outages rather than unplanned outages and faults.

Whilst 'payment on completion' would serve as an incentive for timely asset delivery, its effectiveness as an incentive very much depends on the circumstances in which the CATO finds itself during construction. It is likely that if the CATO has experienced unexpected delays in the design or early construction phase then payment on completion would not be a strong enough incentive to pay additional construction costs to ensure timely delivery against the financial consequences of delayed payment of its cost of capital. This is therefore also likely to come at a cost to consumers as the savings made from not paying the CATO until completion is unlikely to outweigh the resulted constraint costs. Therefore it is vital that the penalties to which the CATO

is exposed for late delivery are of sufficient magnitude to drive the behaviours that will lead to the most efficient outcome for consumers.

8. Are there other types of incentives not covered in this chapter that you think should apply to CATOs?

As indicated in paragraph 1.166 of Appendix 5, adhering to its obligations as a transmission asset owner under the STC, the Grid Code, the Electrical Standards Documents and other frameworks, is fundamental to the CATO's role in supporting a secure and reliable electricity system. Transparent financial incentives should be in place, alongside potential sanctions that the CATO is exposed to as a transmission licensee, which would penalise the CATO for failing to meet its requirements and obligations.

There will be complexity added to the outage planning process due to additional parties being included in this process, with potentially different drivers. Therefore, a holistic approach to incentivising the outage planning process is required between the SO, incumbent TOs and CATOs to support this process.

Chapter: Four – Managing conflicts of interest

1. Are there any risks of conflicts of interest arising from the SO's role that we haven't identified?

We understand and take very seriously any concerns regarding potential conflicts of interest arising from National Grid's SO role. We are committed to robustly implementing the mitigation measures we have in place in accordance with the requirements in our licence conditions relating to our role as enhanced SO as well as the EMR delivery body. We have not identified any additional risks of conflicts of interest but are always keen to work with Ofgem and stakeholders to review the mitigation measures we currently have in place and implement further necessary measures in relation to new or evolving roles in order to ensure that there is wider industry confidence in their effectiveness.

2. Are there any risks or conflicts of interest arising from the participation of incumbent onshore TOs that we haven't identified?

We do not think that there are any additional conflicts of interest arising from incumbent TOs bidding. We have a breadth of experience of ensuring conflicts of interest are mitigated and are keen to work with Ofgem, the Scottish TOs and industry to ensure that any conflicts are sufficiently mitigated in order to facilitate a level playing field for all parties to compete.

3. Are there any additional conflicts of interest that we haven't identified?

As noted above, we do not see any additional conflicts of interest which haven't been identified. We are keen to work with industry and Ofgem to ensure that there is comfort that we have implemented sufficient, practical and economic mitigations to address any conflicts of interest.

4. What measures do you think would be appropriate to mitigate the risks and conflicts of interest? What additional conflict mitigation measures would be needed if the SO takes on a broader role in supporting competition?

Please see our answer to question 1 of this chapter.