ofgem Making a positive difference for energy consumers

Extending Competition in Electricity Transmission: Tender Models and Market Offering

Consultation

Publication date:	04/08/16
Response deadline:	29/09/16

Contact:	Gordon Hutcheson
Team:	Transmission Competition Policy
Tel:	0207 901 3927
Email:	TransmissionCompetition@ofgem.gov.uk

Overview:

This document represents the next step to introduce competitive tendering to onshore electricity transmission.

The focus of this document is the process we plan to use to select competitively appointed transmission owners (CATOs) under the late CATO build tender model, and how we propose to regulate them. It focuses mainly on developing arrangements for any projects tendered during RIIO-T1, although it also touches on aspects of our longer term policy for how late CATO build might apply into RIIO-T2.

This document is aimed at parties interested in the competitive regime including potential bidders, investors, incumbent network operators, interested consumer groups, and other relevant stakeholders.

Context

Great Britain's (GB) onshore electricity transmission network is currently planned, constructed, owned and operated by three transmission owners (TOs): National Grid Electricity Transmission (NGET) in England and Wales, SP Transmission in the south of Scotland, and SHE Transmission in the north of Scotland. We regulate these TOs through the RIIO (Revenue = Incentives + Innovation + Outputs) price control framework. For offshore transmission, we appoint TOs using competitive tenders (OFTOs).

The incumbent onshore TOs are currently regulated under the RIIO-T1 price control, which runs for 8 years until 2021. Under this price control, we developed a mechanism for managing the assessment of large and uncertain projects called 'Strategic Wider Works' (SWW). The incumbent TOs are funded to complete 'pre-construction' works, and then subsequently follow up with applications for construction funding when the need and costs for the project solidify. As part of our decision on the RIIO-T1 price control, we set out that projects brought to us under the SWW regime could be subject to competitive tendering.

We previously undertook the Integrated Transmission Planning and Regulation (ITPR) project, which reviewed the arrangements for planning and delivering the onshore, offshore and cross-border electricity transmission networks in GB. Through the ITPR project, we decided to enhance the role of the system operator (SO) to play an increased role in identifying the long term needs of the system and to develop and assess options to meet those needs. In September 2015 we set out our decision to change the SO's and onshore TOs' licences to give effect to these roles. We also decided through the ITPR project to increase the role of competitive tendering where it can bring value to consumers. In particular, we decided to extend the use of competitive tendering to onshore transmission assets that are new, separable and high value. As part of our final conclusions, we included our assessment of the impact of introducing competitive tendering onshore.

Following the ITPR project, we set up our Extending Competition in Transmission (ECIT) project to implement competition in onshore electricity transmission. We published a consultation on our proposed arrangements for competitive onshore tendering in October 2015. We consulted further on our process for identifying when we can run a competitive tender, the pre-tender arrangements under late CATO build, and our proposals for conflict mitigation measures in May this year. We are currently reviewing consultation responses. We will continue to develop the competitive onshore regime, with a view to being ready to run competitive tenders from mid-to-late 2017.

Associated documents

Extending competition in electricity transmission: criteria, pre-tender and conflict mitigation arrangements, May 2016
https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-criteria-pre-tender-and-conflict-mitigation-arrangements

Extending competition in electricity transmission: arrangements to introduce onshore tenders, October 2015
https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-proposed-arrangements-introduce-onshore-tenders

Integrated Transmission Planning and Regulation project: Final Conclusions, March 2015
https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions

Contents

Executive Summary

We are now developing the detailed arrangements to implement competitive tendering for new, separable and high value onshore electricity transmission assets. We consulted on our initial proposals for the regime in October 2015. This document sets out further detail on several elements of these arrangements, including:

- **How we will appoint CATOs** – an update on our proposals for tendering under the late CATO build tender model, including transferring assets from the party responsible for preliminary works to the CATO;

- **CATO regulated revenue, incentives and obligations –** an overview of our approach to regulating CATOs, including our proposals for how a CATO's revenue will be structured, CATO risk allocation, an update on our proposals for the obligations and incentives CATOs will face and our policy for mitigating the risk of a CATO failing or not being appointed following a tender.

This document focuses mainly on developing the more immediate arrangements needed to set up the new competitive regime for any projects we tender during RIIO-T1[1]. In several areas we also outline our initial thinking for RIIO-T2[2]. We will consult on the detailed arrangements for RIIO-T2 at a later stage.

How will we appoint CATOs?

We propose, subject to consultation, that the late CATO build tender model will comprise:

- A tender process which would not delay project delivery compared to the counterfactual of a typical Strategic Wider Works (SWW) project
- Three evaluated tender stages where we assess:
    - bidders' suitability, experience and expertise
    - bidders' outline proposals for the project, and
    - bidders' detailed proposals to build, finance, own and operate the project.
- Bidders engaging with the supply chain and bringing forward detailed designs for the project at the invitation to tender stage to support robustly priced bids.

[1] RIIO-T1 is the current price control period for the three electricity transmission owners (TOs) (and the system operator (SO)) in GB. The period runs from 1 April 2013 to 31 March 2021.
[2] RIIO-T2 will run from 2021 to 2029 and applies to projects that would commence construction during that period.

- Equal weighting in evaluation between the cost and the quality of bidders' proposals at the invitation to tender stage to determine who we appoint as a preferred bidder.
- Opportunities for bidders to innovate and drive efficiencies around construction, finance, operations and maintenance within the parameters of the tender specification.

All preliminary works would transfer to the CATO at licence grant under an asset sale model where the party responsible for preliminary works and the CATO enter into an agreement to manage transfer.

We consider that the majority of planning consents and land rights are currently transferable across GB. We are working closely with the UK and Scottish Governments to ensure planning regimes and the legislative framework support competition.

What obligations and incentives will CATOs have?

CATOs will be subject to the same basic regulatory framework as all other TOs. This means that they will hold an electricity transmission licence granted by us, will have to adhere to relevant industry codes and standards, and potentially enter into additional commercial agreements with third parties depending on the project. We plan to look in more detail soon at the scope of changes that may be required to industry codes to accommodate CATOs.

CATOs do not need to play the same role in the transmission network as existing incumbent onshore TOs, or OFTOs. Moreover, not all CATOs will be the same in terms of the scale, scope or purpose of the assets they own. We therefore propose to establish a baseline CATO framework, but leave some flexibility for different projects or project types. We propose, subject to consultation, the following baseline financial incentives to reinforce CATO obligations under the regulatory framework:

- A delivery incentive based on the CATO only being paid on completion of construction;
- An availability incentive to ensure CATOs' assets are available when they are needed. This would complement a range of technical requirements and operational processes in the wider regulatory framework;
- A penalty for failing to fulfil obligations to enable new connections to the transmission network;
- Financial and reputational incentives to promote good stakeholder and environmental performance, covering leakage of SF6, transmission losses and wider CATO environmental and stakeholder performance;
- An obligation to fund all necessary new asset investment during the CATO revenue term, capped at £100m for each tranche of new investment. This would only apply where new assets are required within a CATO's area; and
- CATO reporting on asset condition at regular intervals, with revenue at risk through a performance bond if a CATO's assets are not in the expected condition at the end of the revenue term.

While we will ensure during our bid evaluation that CATOs have in place robust financial structures which will minimise the risk of financial distress, we also propose to implement a CATO of last resort mechanism to mitigate the risk of a CATO failing. We intend to implement this in line with our existing OFTO of last resort provisions.

How will we structure a CATO's revenue?

We continue to believe that a CATO's revenue should be based on a bid tender revenue stream, fixed in general for a period of 25 years from completion of construction and indexed to inflation. We consider that this will ensure we maximise the potential benefits from the competitive process.

While we consider that in general 25 years is the right duration of revenue term, we will consider for each tendered project whether a shorter or longer period would better serve consumers depending on circumstances at the time. We propose that CATOs would fully depreciate initial capital expenditure over the revenue term. We consider that this would result in better outcomes for consumers by avoiding unnecessary financing costs during the revenue term, and bidders potentially pricing in risk related to any residual value. We also propose that, as a general principle, CATOs should continue to own and operate their assets when the revenue term ends, rather than re-tendering or transferring their assets to an incumbent TO.

We consider that CATOs, like other TOs, should only bear the risks it is efficient for them to manage. In practice there are multiple ways that we would expect CATOs to manage risks. We propose to allocate risks to CATOs broadly in line with those allocated to incumbent TOs. However, as we will appoint CATOs following a tender process and propose to put in place a different regulatory model, the actual allocation of risk may not be exactly the same. We do not propose that in general the risks associated with completion of preliminary works should sit with consumers – both CATOs, through the tender process, and the party responsible for preliminary works can influence how well these are completed.

Next steps

We intend to set out our decisions on many areas covered in this document towards the end of this year or early next year. At the same time we will also set out the next level of detail on these areas, including publishing outline draft tender documents. We also expect to develop a draft CATO licence by Spring 2017. We still intend to have the regime in place and be ready to run the first tender in mid-to-late 2017.

We are keen to hear from, and work with, stakeholders as we develop our policy. We will be running workshops and working groups through the Energy Networks Association over the coming months, but we are also keen to engage bilaterally with interested parties and to receive formal responses to this document.

We are also progressing assessments of specific projects in parallel to the CATO regime development, with a view to establishing how we would apply the generic regime outlined here in those specific cases. We intend to outline by the end of this year our initial view on whether to tender the North West Coast Connections project.

1. Introduction

Question 1: How well aligned do you think the proposals in this document are with our objectives for onshore competition?

Question 2: What do you think are the implications of our overall proposed policy around the tender process, CATO incentives and obligations on CATO cost of capital and levels of competition for a CATO licence?

What do we want to achieve through competition?

1.1. As outlined in our October 2015 consultation, we aim to achieve the following objectives through introducing competition to onshore electricity transmission:

- provide value for consumers, protecting them from undue costs and risks;
- deliver transmission infrastructure necessary to address system needs;
- bring about timely, economic and efficient development of the GB electricity transmission system; and
- create a strong competitive field by attracting new entrants and new approaches to the design, construction and operation of transmission infrastructure.

1.2. We continue to consider these objectives appropriate and that (as supported by our updated May 2016 impact assessment) there are significant benefits from tendering new, separable and high value transmission assets.

1.3. This document focusses on our policy around how we propose to run competitive tenders (which we call 'tender models') and what successful bidders will get (which we call the 'market offering'). At a high level our objectives have influenced our policy around these areas in the following ways:

- We are not looking simply for the lowest cost bids through the tender process, but are also looking to ensure that bids are robust, deliverable and do not place undue risk onto consumers.
- We want to attract investors who are looking to invest over the long term – we think it is important for electricity transmission assets that investors consider the long term interests of the network.

- We want to minimise the chance of delay to delivery of CATO assets by running an efficient tender process in parallel to other activities (eg procurement) that would take place for a Strategic Wider Works (SWW) project under the counterfactual, and by providing a strong delivery incentive to CATOs by only commencing their revenue once assets are complete (this is a stronger incentive than under the SWW counterfactual).

- We want CATOs to take an appropriate amount of risk during construction and operations. We want this to be broadly consistent with the risk that other TOs take. However, as we are proposing to put in place a different regulatory model alongside a competitive process, this may mean that risks allocated to CATOs do not mirror those borne by incumbent TOs, or are more clearly specified.

- We want CATOs to have a robust financial structure to ensure that any potential risks to security of supply are minimised.

- We want to provide clarity on our 'baseline approach' for the tender process and market offering as this will help establish understanding of, and greater participation in, the regime amongst a wide range of stakeholders. However, we also want to allow some flexibility within the CATO regime to enable us to get the best value for consumers for specific projects or at a particular time. We also want to allow flexibility for the regime to develop in future.

Where does this document fit in to the wider programme?

How this fits into our work programme

1.4. In our October 2015 consultation (the 'October consultation')[3] we set out our thinking on many aspects of implementing competition in onshore electricity transmission. This included proposals on the criteria for tendering, our proposed pre-tender process, how we propose to run tenders, what successful bidders will get and how to mitigate conflicts of interest. In May 2016 we published a further consultation (the 'May consultation')[4] about the criteria, pre-tender and conflict mitigation arrangements. That consultation closed on 22 July 2016. We are currently considering responses from stakeholders.

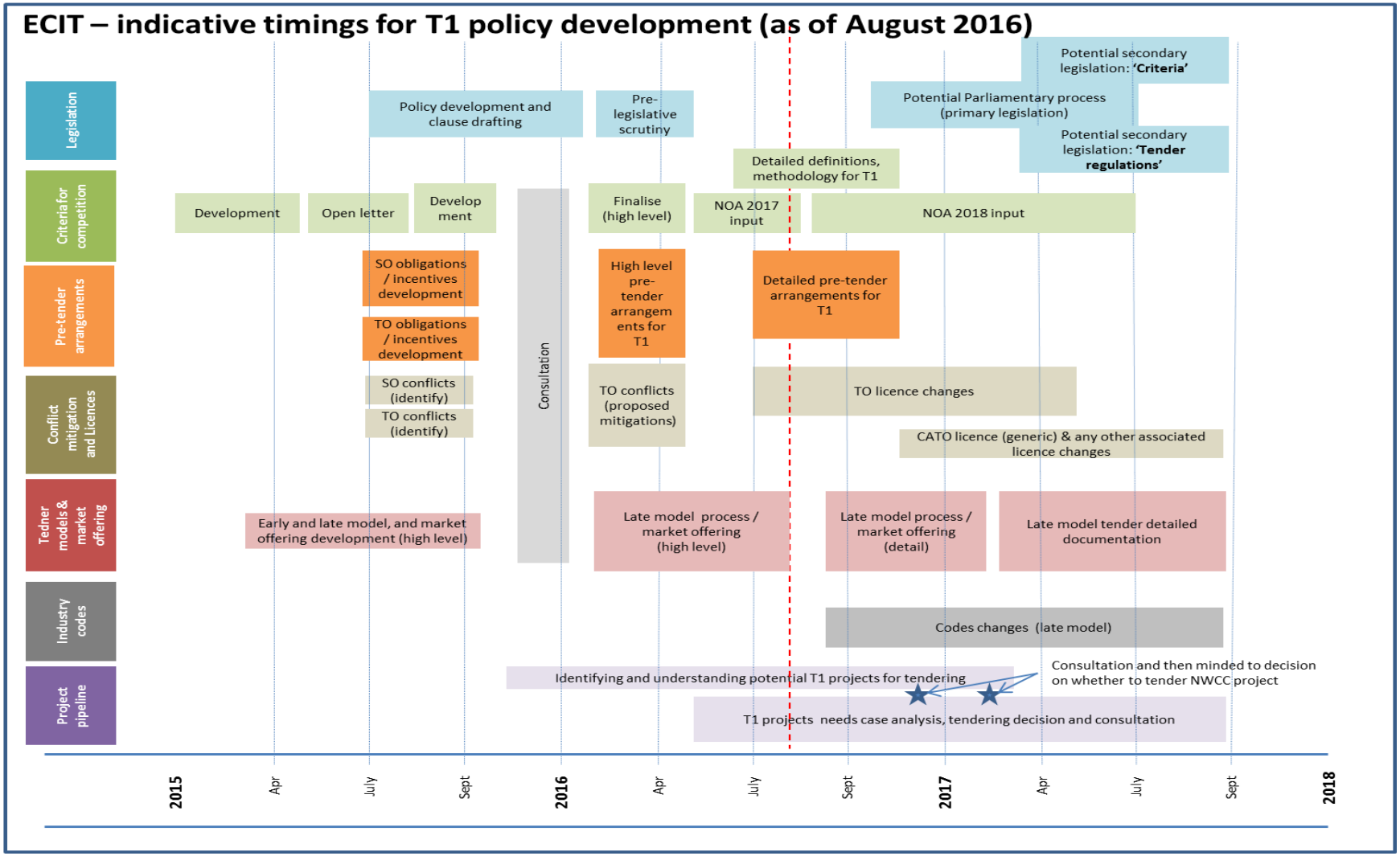
[3] https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-proposed-arrangements-introduce-onshore-tenders
[4] https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-criteria-pre-tender-and-conflict-mitigation-arrangements

1.5. This document builds mainly on our October consultation and considers further our policy relating to three main policy areas:

- Tender models and market offering for CATOs:
    - The focus of this document is on the late CATO build tender model and the market offering we propose for CATOs appointed under late CATO build. This is the model we would apply to any RIIO-T1 SWW project; we therefore need to prioritise its development over early CATO build.
    - We expect that much of the late CATO build market offering might also apply to early CATO build, but will consider this fully in future.
- Industry codes and standards:
    - These are essentially contractual obligations and contain a number of obligations and requirements that CATOs will need to adhere to, as well as things like documenting operational processes that will affect how they do their job. They will also give effect to aspects of our policy for how we will regulate CATOs.
    - Existing provisions in the codes and standards will need to change to accommodate CATOs. We discuss the potential scope of codes changes in this document.
- Licensing and licence policy:
    - CATOs will hold an electricity transmission licence setting out their obligations andreflecting aspects of CATO policy.

1.6. These policy areas are reflective of the workplan we published in our May consultation, updated in Figure 1 below. We have not changed any aspects of our workplan since May and still expect to be in a position to run the first tender by mid-to-late 2017. We expect to say more on our workplan for tendering RIIO-T2 projects in early 2017.

Figure 1: Indicative timings for RIIO-T1 policy development



Wider policy update

Role of the SO

1.7. We discussed the future role of the System Operator (SO) in our May consultation and how that role relates to our work.

1.8. We have previously said, in our ITPR Final Conclusions in March 2015[5], and again in our October 2015 consultation[6], that where late CATO build is used for projects in RIIO-T2 the SO should carry out preliminary works and support the tender process. We think that putting in place the right roles, incentives and obligations for the SO in relation to competitive onshore tendering is important, but must be considered in the context of the SO's wider role and incentive framework. We will consider further the future role of the SO in supporting competition as part of our wider work on the SO's role.

Identifying projects for tendering

1.9. As outlined in our May consultation, we are developing the process for identifying assets that meet our suitability criteria and for making decisions on whether to tender these assets. As part of the ITPR Final Conclusions, we decided to introduce the Network Options Assessment (NOA) process for system planning. We set out that part of the SO's role in this process would be to assess the suitability of transmission options for tendering, and to make recommendations on this. We also set out that the SO would lead certain options and undertake early development works for these.

1.10. Following the publication of the first NOA report in March 2016, we are engaging with the SO and wider stakeholders to further develop the NOA process and methodology, to deliver the originally identified goals arising from the ITPR Final Conclusions. We are also considering more widely the routes for project identification beyond the NOA process.

1.11. In the short term we are currently assessing the suitability of potential SWW projects for tendering and still expect to consult, by late 2016, on whether a potential RIIO-T1 SWW project, the North West Coast Connections (NWCC) project to connect Nugen's proposed nuclear station in Moorside, Cumbria, is suitable for tendering. Alongside our assessment of whether projects are suitable for tendering we are also considering how we would apply the generic regime outlined in this

[5] https://www.ofgem.gov.uk/electricity/transmission-networks/integrated-transmission-planning-and-regulation
[6] https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-proposed-arrangements-introduce-onshore-tenders

document to these projects. For an indicative view of potential projects coming forwards, please refer to our website for SWW projects.[7]

Early CATO build

1.12. The focus of this document is late CATO build and the market offering that would apply to projects tendered under late CATO build. As set out in our May consultation, we plan to prioritise the development of late CATO build and consider it the only viable tender model for RIIO-T1 projects. Any SWW projects tendered during RIIO-T1 have already been developed and progressed by the incumbent TOs, who have also been funded for pre-construction activities through the price control.

1.13. We intend to work with industry to further develop the early CATO build model, from later this year into the beginning of next year, as we consider that early CATO build requires further development before it could be implemented. It is particularly important that we consider the development of any early tender model in in light of an evolving generation mix and ongoing move to low carbon economy that will drive future network investment, and the role of the SO in supporting the identification of non-build options that we introduced in the ITPR project. There is also increasing interactivity with distribution network solutions, and our forthcoming call for evidence with the Department for Business, Energy and Industrial Strategy (BEIS)[8] on a routemap to a smart, flexible energy system discusses how the SO will need to coordinate more with DNOs and TOs to ensure the best whole system approach to addressing system needs. Any early tender model for transmission would need to align with those developments and not, for example, lock consumers into particular transmission solutions too early.

1.14. Some additional specific challenges for early CATO build identified by stakeholders in our previous consultation were:

- Managing the risk of a change in design following the tender and appointment of the CATO, reducing in part or potentially entirely, the benefits from competition;
- Tender evaluation and the comparability of bids given the potential for different solutions to be proposed; and
- Attractiveness of the early model to a range of investors, including new entrants.

[7] https://www.ofgem.gov.uk/electricity/transmission-networks/critical-investments/strategic-wider-works
[8] Formerly the Department for Energy and Climate Change (DECC)

1.15. We expect to publish further details on the early CATO build model in 2017. Stakeholders interested in joining the industry group on early CATO build should contact us or the Energy Networks Association (ENA)[9] who are organising the groups.

What are our future plans?

1.16. Following this consultation we are keen to work with stakeholders in a variety of ways as we further develop the CATO regime. Specifically, we are keen that:

- stakeholders formally respond to this consultation;
- interested parties contact us to arrange bilateral meetings if they wish to clarify any of the points in here, or further explore any of these areas;
- we have an opportunity to engage wider groups of stakeholders, for example through workshops the ENA has arranged on late CATO build, CATO market offering, risk allocation and the scope of potential changes to industry codes and standards.

1.17. Subsequent to this consultation and our further analysis, we then plan to take the following approach to develop the late CATO build tender model and market offering ahead of the first tender:

- We intend to set out our decisions on many areas covered in this document towards the end of this year, or early next year.
- Consult towards the end of this year, or early next year, on further details of the regime. For example, we intend to publish our next consultation alongside outline drafts of tender documents (eg enhanced pre-qualification and invitation to tender stages) so stakeholders can better understand our thinking and feed back on our policy as it develops.
- We then plan to provide a further update of our tender policy by spring 2017, where we expect to include an update to our outline draft tender documents and finalise our tender policy, as well as consult on detailed market offering policy in a draft 'generic CATO licence' and code modification proposals.

[9] If you are interested in participating in any ECIT industry groups or workshops please contact us at TransmissionCompetition@ofgem.gov.uk in the first instance.

- We expect to be in a position to launch a tender by mid-to-late 2017, with finalised tender documents being prepared in advance of each tender stage.

- We are already beginning to look in more detail at specific projects, specifically considering how we would apply the generic CATO regime to these projects. We will continue to do this alongside our policy development and assessment of the suitability of projects for tendering.

- We will work with industry to better understand the full scope of changes to industry codes, followed by industry working groups to input to the drafting of any necessary changes. This would be with a view to updating stakeholders by mid-to-late 2017 on industry code changes, and ensuring all changes are complete, at latest, by the end of 2017.

2. Late CATO build tender model

Summary of proposals

Building on our initial policy proposals for late CATO build outlined in our October consultation, we currently propose the following core elements and provide further details on these elements in the remainder of this chapter:

- A three stage tender process comprising an enhanced pre-qualification stage, an outline proposals stage and invitation to tender stage. We consider this will facilitate an efficient process.
- Bidders should undertake detailed design work and supply chain engagement during the tender process to enable them to provide robust, fixed price bids at the ITT stage.
- ITT evaluation will focus on a combination of price and robustness of proposals, weighted equally. We consider deliverability equally as important as price to CATO selection.
- The ITT stage should in general start once project certainty is established through planning consent being in place. We consider this will allow for the most robust bids. We will look to set specific expectations on timing for each project.
- All preliminary works, including planning consents and land rights, should transfer to the CATO on appointment (ie at licence grant/financial close).

Question 1: What do you think about our proposed approach to tender evaluation? Are any elements missing that we ought to look at?

Question 2: What are the main detailed aspects/criteria of our evaluation that you would like further clarity on as a priority over the next few months in order to inform your decision on whether or how to bid?

Question 3: What do you think about our proposals for variant bids? Which areas are likely to lead to the largest benefits for consumers?

Question 4: How could Ofgem best value the relative merits in variant bids of enhanced consumer outcomes, potential savings and likelihood of delivery where these do not align?

Question 5: Do you consider that our proposed tender process stages and timings provide sufficient time for interaction with the supply chain and bidders to undertake required design work in order to put forward robust, fixed price bids at the ITT stage?

Question 6: Which contracts from preliminary works would you expect to be novated to the CATO on appointment?

Question 7: What are your views on the potential value, and practical implications, of a share sale model for tendered RIIO-T2 projects?

Question 8: Based on your understanding of the HVDC supply market, what are the priority areas we should be looking to consider over the next few months in order to ensure HVDC projects can be tendered efficiently under late CATO build?

Tender specification and pre-tender process

2.1. We set out details of our policy towards the tender specification and pre-tender process in our May consultation[10]. The aspects we consider most relevant to this work are:

- The tender specification (see appendix 2 for details of what this would comprise; this is taken from our May consultation) and project information contained in the data room will provide bidders with the information to prepare bids and the scope on which to bid against. We intend to establish general principles around the main elements that would form the tender specification of a late CATO build project. However we also recognise that certain aspects may need to vary on a project by project basis.

- TNEI/Pöyry's report considered allocation of risk to determine what information should be provided for bidders. We consider risk allocation further in chapter 4.

- We propose to have a Final Tender Checkpoint to confirm the suitability of a project for tendering and to determine the timings of the tender process (ie when to start the different tender stages).

2.2. Since publishing our May consultation we have received a number of responses from stakeholders, as well as feedback through a workshop organised by

[10] https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-criteria-pre-tender-and-conflict-mitigation-arrangements

the ENA[11]. We will take all feedback into account before updating our policy for the tender specification and Final Tender Checkpoint later this year.

When to run a tender

2.3. In our October consultation we outlined some options around when, in the project development process, we could run late CATO build tenders. Respondents were generally in favour of running the tender as late as possible, particularly waiting until planning consents are in place. Respondents thought this would make for efficient pricing of bids by mitigating potential uncertainty from things like consent conditions.

2.4. We think it is important to have flexibility around when to run a tender to ensure we can optimise the process for each project and ensure tendering does not lead to project delays. As such, we propose to decide for each project exactly when we would run each tender stage. We will do this at the Final Tender Checkpoint, and expect to take into account other processes, including the planning process, in our decision. This would allow us to take into account project specific differences, including, for example, different planning regimes and processes in Scotland and England and Wales.

2.5. However, our general preference remains that we would:

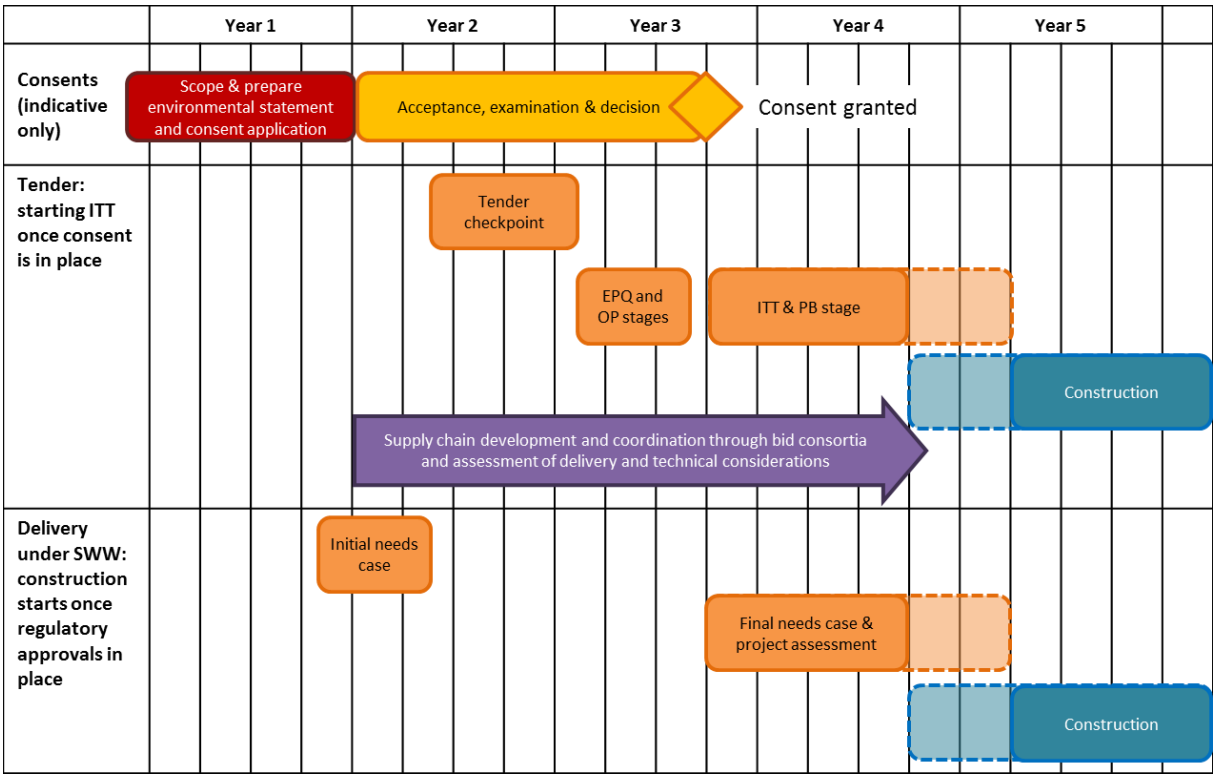
- not start the formal tender process (ie the EPQ or outline proposals stage) until the planning consent application has been submitted, but would maximise visibility to the market of the CATO opportunity well in advance of this to allow bidders to form consortia, develop supply chain relationships and assess delivery considerations.

- commence the formal ITT stage once planning consent is in place (and potentially also once the risk of any legal challenge to the planning consent decision has passed), but potentially look to expedite the process, for example by pre-populating and providing access to the data room to allow shortlisted bidders the opportunity to begin undertaking due diligence and design work before formally commencing tender stages.

2.6. We consider that these principles would allow us to run an efficient tender process that minimises the potential risk of delay through tendering. The diagram below maps our tender process against an indicative process for a project through SWW and the planning process. For simplicity we have based this on the planning

[11] We will soon publish a report form this discussion on our website. Please check here: https://www.ofgem.gov.uk/electricity/transmission-networks/competition-onshore-transmission

process for England and Wales as timings are generally prescribed for projects being assessed under the Planning Act 2008. We recognise that the process is different in Scotland, however we consider that a similar approach would apply.



2.7. While these timings are indicative, and show a potential range of timings for the late CATO build tender process as well as our assessment under SWW, in general we do not consider that our proposed tender process would delay the point at which construction can commence compared to the SWW counterfactual[12]. We also anticipate that CATO bidders may be able to propose innovative approaches to construction management, leading to process and timing efficiencies and further mitigating any risk of delay.

2.8. We understand that under certain circumstances TOs may start certain works on projects in advance of our SWW assessment, for example where they have indemnities from a generator for the value of these works. We consider that these projects could still be tendered without delay by allowing a TO to continue some works which would then be transferred at an economic and efficient cost to the CATO. However, we would not expect these types of arrangements to be needed in the majority of CATO tenders.

[12] This is the point at which a TO would have sufficient regulatory certainty over project costs under SWW (ie completion of the project assessment stage)

2.9. We expect to set out further details on our specific timings for running a late CATO build tender when we have identified a project to tender. As noted above we consider that many aspects of timing will depend on the details of the project so need to be addressed in more detail on a project specific basis, taking into account the need to reflect the interests of consumers and users of the network.

Tender stages and timings

2.10. We proposed a two stage tender process in our October consultation comprising an Enhanced Pre-qualification (EPQ) and an Invitation to tender (ITT) stage. This approach was broadly supported by respondents, although we note that there were some concerns raised about the timing of the ITT stage. Stakeholders were also keen to better understand our approach to bid evaluation through the tender process.

2.11. Since October we have undertaken further analysis on the tender stages and timings, including considering responses to our October consultation, stakeholder input, alignment with the Public Contracts Regulations 2015 and our own learning through running tenders to appoint OFTOs. We currently consider that it may be more efficient to hold an enhanced pre-qualification stage, followed by two further evaluated tender stages, as shown below:

2.12. We expect that this process would enable us to conduct a robust tender process, minimise any risk of delay, ensure that the most appropriate bidders proceed to ITT and therefore ensure we can select the most economically advantageous tender. We consider that the overall process would take 18-24 months which is consistent with our previous proposal in our October consultation. This will be dependent on the specific details of the project.

Enhanced pre-qualification stage (EPQ)

2.13. The EPQ stage would determine if a bidder is qualified to tender for a project and allow us to select qualified bidders to take through to further tender stages on the basis of their financial standing, professional competence and capability.

2.14. We expect this stage to be around three months in duration, including our assessment of bids. We expect that bidders would have formed consortia or bidder groups before participating in this stage in order to satisfy our evaluation requirements by demonstrating the relevant range of capability we would expect to see from a successful bidder.

Outline proposals stage (OP Stage)

2.15. Given the cost involved for us and for bidders in running and participating in an ITT stage, we consider it important to have a robust tender stage before ITT to ensure that only the most competitive bidders participate. The OP stage would allow us to evaluate several elements of bidders' approaches to the project being tendered. This would allow us to limit the number of bidders who can proceed to the ITT stage based on these proposals.

2.16. We expect that at the point of submitting bids to us at the OP stage, bidders would be able to demonstrate the relevant range of expertise we would expect to see from a successful bidder (either in-house or by using sub-contracts). We expect that the OP stage would be around three months in duration; up to two months for bidder development and around one month for our assessment.

Invitation to Tender (ITT) Stage

2.17. Bidders who progress to the ITT stage would then be required to further develop their bids in alignment with their proposals indicated at the OP stage, (excepting justified amendments). We anticipate a period of up to eight or nine months for bid development, with up to three or four months for our assessment. We think that this timeline would give bidders sufficient time to finalise procurement arrangements and to produce a robust and high quality final bid.

Basis of bids and evaluation

EPQ

2.18. We propose that the EPQ stage would cover:

- Basic bidder or bidder group pre-qualification identification information, financial and legal standing, and prior managerial experience.

- Evidence of a bidder's experience in delivery of infrastructure asset build and operation projects of similar size and scope to the project being tendered (preferably, but not necessarily, in the energy sector and in the UK). If examples are not from the energy sector, bidders should be able to articulate the relevance of the project experience to the project being tendered, for example in relation to managing a critical public service, managing local stakeholders appropriately and mitigating environmental impacts.

- Evidence of identification, understanding and management of project risk, particularly risks relating to cost escalation, overall financial robustness and quality and timeliness of project delivery and cost containment mitigations.

2.19. We would evaluate the basic bidder information on a pass/fail basis (ie bidders are required to provide the relevant information to be able to participate in the tender). We then propose to score and weight bidders' responses to a set of questions about their previous experience. The weightings would reflect the most relevant experience for the project. We would expect bidders to reach a certain threshold score to be able to proceed to the OP stage.

OP Stage

2.20. The OP stage aims to ensure that bidders moving through to the ITT stage are those most capable of putting together a high quality and competitive bid in terms of deliverability and cost. The information we propose to require around approach to the project being tendered would include:

- a demonstrable understanding of the complexity and requirements of the project being tendered, including in relation to statutory/regulatory compliance, delivery against consents, design, procurement, construction, operations and maintenance, and environmental and stakeholder management.

- approach to identifying and mitigating a range of project specific risks.

- a financial element, for example an indicative cost of capital for the project, for example through a bidder's proposed Internal Rate of Return and project gearing.

- approach for determining an appropriate economic and efficient funding solution.

2.21. Our initial view is that the OP stage evaluation would consist of a scored and weighted set of questions, with the weighting emphasising the most important elements of the project. We would expect bidders to reach a certain threshold score to be able to proceed to ITT. We anticipate that the outcome of the OP Stage evaluation would see 3 to 4 bidders invited to tender.

Invitation to Tender (ITT)

2.22. Bidders successful at the OP stage would be invited to tender for the project. The purpose of the ITT stage is to allow us to select a preferred bidder (and potentially also a reserve bidder). We expect bidders to propose a fully developed approach to asset design, procurement, construction and operations and maintenance. It must also include a finalised and firm tender revenue stream.

2.23. The table below outlines our initial views on what we would evaluate at ITT:

Section	Information required
1. Confirmation of EPQ/OP stage information	Confirmation that the bidder continues to meet the EPQ/OP stage requirements and there have been no material changes.
2. Design and technical specification	A detailed design for the assets based on the requirements of the tender specification, supported by relevant information (eg electrical diagrams, design studies).
3. Procurement management	Details of the procurement activity performed by the bidder (ie engagement with the supply chain for construction services) supported by relevant evidence (eg proposals from subcontractors, draft detailed contracts agreed with preferred suppliers or subcontractors, ready to be signed on conclusion of the tender process). Details of the bidder's proposed approach to procuring all relevant contracts through the project life cycle (eg to end of the revenue term).
4. Construction and operational management	A detailed explanation of how the bidder will manage construction and operations & maintenance over the revenue term, supported by relevant evidence (eg plans and methodologies for manufacturing, logistics, construction processes, health, safety and asset management strategies). Clear rationale as to why the proposed approaches have been selected and how they will ensure deliverability of construction and ongoing operations, and ensure compliance against all necessary consents and legislation.
5. Financial Deliverability	A fully developed funding solution for the project, including details of the sources of debt/equity, financial structure etc. Clear rationale as to why this is most economic and efficient solution, including other options considered.
6. Tender revenue stream (TRS)	A fully costed TRS, including a breakdown of the main elements.
7. Risk Management	A fully developed approach to risk and issue management, covering all relevant dimensions (eg design, technical, construction, operations) supported by relevant evidence (eg risk registers)
8. Underlying assumptions	The approach and assumptions used to derive the TRS, including the rationale behind assumptions, and approach to developing costs items in the TRS. Assumptions should be consistent with other parts of the submission.

2.24. We consider that we might take the following broad approach to tender evaluation:

- Responses to sections 2, 3, 4, 5, 7 and 8 would be scored. We expect to include minimum threshold scores for each section to ensure all bidders demonstrate a baseline level of competence.

- For each of the above sections where a bidder has met the minimum threshold, the scores for these sections would then be aggregated, with a weighting applied to each section.

- The TRS (section 6) would also be converted into a score, taking into account the different elements within the TRS.

- The score for section 6 would then be added to the combined score for sections 2, 3, 4, 5, 7 and 8 to give an overall bid score. We consider that the weighting between section 6 and sections 2, 3, 4, 5, 7 and 8 could be equal (50:50) at the ITT stage to reflect the appropriate balance of deliverability and cost.

2.25. We consider that the above process would allow us to appoint a preferred bidder, and possibly reserve bidder, who could demonstrate a high level of understanding about the project with a robust approach to delivery and at a competitive cost for consumers.

Innovation

2.26. We expect that tendering will lead bidders to innovate within the parameters of the tender specification and evaluation criteria in order to win the tender. We consider this one of the main benefits of using competitive tendering. As outlined in our October consultation we expect the late model to drive innovation and efficiencies in procurement, construction methodologies and programming, finance, and operations and maintenance.

2.27. We continue to believe that there is significant scope for innovation under the late CATO build model, even accepting that the parameters of planning consent will impose certain rigidities around project scope (eg noise limits during construction or limits of deviation on an overhead line route). We have therefore considered whether accepting variant or alternative bids or solutions (eg a bid which deviates from certain parameters of the tender specification and is submitted alongside a fully compliant bid) would further promote innovation and/or improve outcomes for consumers. We initially consider that a number of elements in a bid may be appropriate for variant or alternative bids or solutions including, for example:

- environmental impact – for example, if bidders could propose construction techniques that reduce the impact on the environment, or

designs that would reduce the potential transmission losses of the assets, this would have wider environmental benefits.

- visual amenity – for example, if bidders were able to utilise new technology to lessen the visual impact of their proposals this may benefit communities affected by new development.

2.28. However, we also consider that including variant or alternative bids or solutions may make tender evaluation more complex and can result in additional work for bidders during the tender process. We therefore welcome views on whether stakeholders consider variant or alternative bids or solutions would be suitable for the late CATO build tender process, including any particular areas where there may be scope for innovation beyond the parameters of the tender specification which would lead to enhanced outcomes for consumers at competitive costs.

Risk allocation

2.29. In our October consultation we outlined our preference for bidders to submit fixed price bids at the ITT stage in the late CATO build model. The fixed price bid would set the CATO's TRS, subject to a limited number of reopeners and indexation, as described in chapter 4. We continue to believe this is the right approach and set out further details on risk allocation in chapter 4.

Design, procurement and supply chain engagement

Design

2.30. In our May consultation we outlined our expectations around preliminary works and what would form part of the tender specification. Design work for the transmission assets of projects to be tendered would effectively be split across the party carrying out the preliminary works and CATO. TNEI/Pöyry's report (published alongside our May consultation) notes an expectation that the CATO should be responsible for undertaking Front End Engineering Design (FEED). We agree with TNEI/Pöyry's conclusions, although we consider it important to develop a common understanding of what FEED entails. We propose that:

- The party carrying out the preliminary works should undertake all engineering design work required to secure planning consent for a project, but should avoid any further design work. We consider that in general this design work would be relatively high-level for most project types.

- Bidders would complete the majority of the detailed engineering design work during the tender process, specifically the ITT stage. We expect bidders will need to undertake this work to enable them to propose robust, fixed price bids at ITT. We do not currently consider that, based on our proposals for the tender process, bidders would be required to do

any significant design work before ITT, although we welcome feedback from potential bidders.

- There may be further limited design work required following the ITT stage – for example during the Preferred Bidder stage and into the construction period. We expect that bidders would take this into account when preparing their bids, to ensure projects are deliverable on time, within the costs bid at ITT and to an appropriate standard.

Procurement and supply chain engagement

2.31. Before and during the tender process bidders will need to engage with the supply chain for both construction and operational capabilities. We consider that this may involve:

- Initial engagement before the tender and during EPQ and OP Stages: Some initial engagement during this period to identify procurement strategies and potential suppliers. We do not expect that bidders would need to undertake a procurement exercise during this period. However, bidders would need to demonstrate competence to manage procurement as well as some initial supply chain engagement to ensure that they could progress the elements necessary for successful project delivery on time and to an appropriate standard, if invited to tender.

- Detailed engagement during ITT: In order to provide a fully costed bid, we expect bidders would need to understand the full range of costs from equipment suppliers, manufacturers and contractors. We expect that the pre-work undertaken with the supply chain should simplify the bid development work at the ITT stage, although we understand that procurement can be complex. We expect that when submitting bids at ITT, bidders would be able to evidence fully costed contracts ready to be signed on conclusion of the tender process. We are keen for feedback on how our proposed tender process and timings align with bidders' ability to engage with the supply chain.

2.32. Potential bidders will need to take their own advice on whether they are required to comply with any relevant procurement legislation for the purposes of assembling a supply chain for this tender process. Once a preferred bidder has been selected and the tender awarded our initial view is that the Utilities Contracts Regulations 2016 would not apply to CATOs. Our initial view is that CATOs would not be "utilities" under the Regulations as they are unlikely to have the relevant "special or exclusive rights" which might otherwise trigger the need to comply. However, it may be advantageous for bidders to approach multiple potential suppliers in order to establish the most economic and efficient delivery of the project.

2.33. We expect to consider as part of the robustness of bids at both the OP and ITT stages whether the proposed supply chain arrangements are deliverable. This is

likely to include the extent to which suppliers or contractors could be mobilised to deliver the project within the required timescales.

Equipment standards

2.34. We initially consider that existing equipment standards will be sufficient to ensure CATOs' equipment is designed, procured and constructed to ensure efficient network operation. We therefore do not consider it necessary to develop a specific set of equipment standards to apply to CATOs, nor for other TOs. We understand that it is important for CATOs' equipment to effectively interface with other network owners', and we expect that any standards required for interfaces would be outlined in the tender specification. We also note that there is a range of electrical standards that would apply to a CATO's equipment (eg standards developed by the International Electrotechnical Commission). We consider that these standards would be sufficient to manage any interface risk with other network owners, while enabling CATOs to innovate in their approaches to procurement, construction and operations.

Ownership unbundling

2.35. The EU Third Package requires that transmission owners are unbundled (or independent) from generation, production and supply interests and are required to be certified as being so. The Authority is responsible for certifying transmission owners' compliance with the Third Package unbundling requirements in GB in accordance with the procedure set out in section 10A to 10O of the Electricity Act 1989. CATOs will need to comply with the full ownership unbundling requirements.

2.36. For CATOs, we expect to follow a similar approach to certification adopted for prospective OFTOs. Although the tender process and certification process are separate and independent procedures, a prospective OFTO usually formally applies to Ofgem for certification once they are appointed as preferred bidder, with a view to being certified by the time they are granted the OFTO licence. Further information on the procedure for processing applications for certification under the ownership unbundling requirements can be found in the guidance[13], issued by Ofgem.

Tender process risks and mitigations

2.37. In our October consultation we outlined our intention to introduce a CATO of last resort mechanism, similar to the OFTO of last resort provisions, to mitigate the

[13] Open letter dated 10 November 2011: https://www.ofgem.gov.uk/ofgem-publications/59314/111110-open-letter-certification-post-legislation.pdf and Certification arrangements in Great Britain following amendments to the ownership unbundling requirements of the Gas Act 1986 and the Electricity Act 1989 March 2015: https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/certification_arrangements_in_great_britain_following_amendments_to_the_ownership_unbundling_requirements_of_the_gas_act_1986_and_the_electricity_act_1989_1.pdf

risk of a CATO not being in place. In this section we consider the potential for non-appointment resulting from the tender process, which is one of the scenarios where a CATO of last resort may be required (as a last resort option). We discuss separately the potential risk of a CATO experiencing financing distress once appointed in chapter 3, which is the other scenario where a CATO of last resort may be required.

2.38. Respondents to our consultation were broadly supportive of the implementation of a CATO of last resort mechanism. Some respondents downplayed the potential risk of a CATO not being in place, citing, for example, the level of commitment generated by the tender process or funders' requirements. Several respondents were concerned about the funding requirements for any entity appointed as CATO of last resort, while others wanted to see further policy/process details. Other respondents suggested looking for alternative ways to mitigate certain risks, for example by appointing a reserve bidder or considering the overall structure of CATO regulation.

2.39. We have outlined in appendix 3 further details on the risks arising through the tender process and the potential range of mitigants. In summary:

- We consider the main risks arising through the tender process are a lack of suitable bidders at different tender stages, poor quality bids that do not meet thresholds, and project delays or changes (eg if a planning consent application is unsuccessful).

- We consider that we can take a range of actions to prevent these risks materialising, for example by consulting thoroughly on our proposed approach to tendering, ensuring potential bidders have sufficient notice of a tender, running the final tender checkpoint before starting a tender and ensuring we build flexibility into our tender processes to accommodate differences across projects or delays to consenting processes (eg by not starting ITT until consent is secured).

- Appointing a CATO of last resort is therefore one of a number of measures to mitigate the risk arising from the tender process and is very much a last resort mechanism. We set out further details on our policy for CATO of last resort in chapter 3.

Transfer of assets, including planning consent and land rights

Planning consent and land rights

2.40. One of the main features of late CATO build is that the CATO would not be responsible for completing preliminary works, including planning consent and acquisition of land rights.

2.41. Some respondents to our October consultation raised concerns about the transferability of planning consents and land rights, particularly those required in

Scotland. We also note that the evidence provided to the Energy and Climate Change Committee in response to the UK Government's draft legislation to enable competition in onshore electricity transmission also highlighted concerns around transferability of certain land rights.

2.42. Since publishing our October consultation we have engaged widely with the incumbent transmissions owners, the Scottish Government, the UK Government (BEIS), and other stakeholders. The table below summarises our current view on the transferability of the planning consents and land rights we expect would be most relevant to the development of new, high value and separable electricity transmission infrastructure. This is based on our engagement with stakeholders and own analysis.

England and Wales		
Type of consent	*What it does*	*Transferability*
Development Consent Order	Planning consents for construction, including consents to install and keep installed overhead lines under S37 of the Electricity Act, planning permission, consent for activities in inshore and offshore areas (if applicable), power to compulsorily purchase land and rights over land (ie to site equipment), right of temporary access to land during construction.	All or part of the Development Consent Order, including all rights and permissions, can be transferred. May require the Secretary of State to consent to transfer, depending on how the order is drafted.
Voluntarily negotiated easement	Permanent right to keep and access equipment (eg towers or cables) on land.	Does not need to be 'transferred' – benefit is tied to a specific section of land
Scotland		
Type of consent	*What it does*	*Transferability*
Consent under Section 37 of the Electricity Act	Consent to install and keep installed overhead lines under S37 of the Electricity Act, also includes deemed planning permission.	Capable of transfer. Typically contains a provision for the Scottish Ministers' consent as a prerequisite to transfer.
Marine licence (if applicable)	Consent for activities in inshore and offshore areas.	Capable of transfer in whole or in part. Typically contains a provision for the Scottish Ministers' consent as a prerequisite to transfer.
Planning permission (not part of a Section 37 consent)	Permission to develop land or alter development on land.	Runs with the land so does not need to be 'transferred'.
Voluntarily negotiated wayleave	Temporary right to keep and access equipment (eg towers or cables) on land.	Capable of transfer, subject to the specific terms of the agreement.

Voluntarily negotiated servitude	Permanent right to keep and access equipment (eg towers or cables) on land.	Does not need to be 'transferred' – benefit is tied to a specific section of land.
Compulsory Purchase Powers	Power to acquire land or rights over land without the landowner's consent.	Powers cannot be transferred. Land obtained by compulsory purchase may be transferred between licensees.
Necessary Wayleave	Rights to install and keep installed an electric line on, under or over any land – rights over land which may be granted by Scottish Ministers where rights have not been obtained voluntarily.	Necessary wayleaves have not historically been transferred and have not historically contained any provision for transfer.

2.43. Based on the above, we consider there are only two areas where transferability in general may not be straightforward:

- Compulsory purchase powers required in Scotland. We consider that where these were required for a project (which would depend on the extent of agreement with landowners), the title to land acquired using compulsory purchase powers may be transferred between licensees (ie to a CATO). We therefore do not consider that there is any inherent challenge or need to alter current legislation.

- Necessary wayleaves required in Scotland. We are continuing to work closely with the UK and Scottish Government with respect to the transfer of necessary wayleaves. Officials from across GB are working together to ensure the planning regime and legislative framework support competition effectively.

2.44. For the avoidance of doubt we consider that any CATOs would be able to make use of the same provisions under planning law or the Electricity Act (permitted by its transmission licence) as existing TOs. This would include, for example, having Permitted Development Rights or being able to apply for compulsory purchase powers or necessary wayleaves if required.

Transfer of preliminary works

2.45. As set out in our May consultation, we propose that all preliminary works relating to the project being tendered would transfer to the CATO on appointment (ie at CATO licence grant/financial close). This would include:

- planning consents and land rights, including any agreements developed through the planning process (eg bilateral agreements with local authorities);

- novation of any relevant contracts or agreements the party responsible for preliminary works has entered into;

- the benefit of any warranties or contractor's liabilities obtained by the party responsible for preliminary works;

- any further project information not available in the tender data room.

2.46. We are considering two main ways to achieve transfer of preliminary works for any projects we tender:

- an asset sale model: this would involve a transfer of all preliminary works between the party carrying out the preliminary works and CATO. We expect this would be similar to the process for OFTOs where an asset transfer agreement is agreed between the offshore developer and the OFTO prior to licence grant[14]; or

- a share sale model: this would involve the party carrying out the preliminary works setting up a project company to complete all preliminary works, with a transmission licence for this purpose. All preliminary works would be held in this company. This company would be sold to the CATO when the CATO is appointed, and the CATO would then take over the preliminary works.

2.47. For any RIIO-T1 SWW project that we decide to tender we expect we would only be able to use an asset sale model as the project being tendered would already have progressed beyond the point where a project company could be set up efficiently to complete the preliminary works. We plan to consider further how we expect an asset sale approach would work for any RIIO-T1 SWW projects.

2.48. However, we consider that there may be value in a share sale model for projects into RIIO-T2. We are keen for stakeholders' views to influence our future policy development and will work to fully understand the potential challenges, particularly around the treatment of people working for the company being sold and tax implications. We consider that, subject to stakeholders' views and our own further policy development, we may be able to adopt a flexible approach during RIIO-T2 where either a share or asset sale model could be used.

Projects using high voltage direct current (HVDC) technology

[14] See for example the guidance we previously published on the form of this agreement: https://www.ofgem.gov.uk/ofgem-publications/50993/transfer-agreement-guidance-30-11-11.pdf

2.49. In our October consultation we outlined potential complexities with tendering projects using HVDC technology. These were:

- The potential need to procure a convertor station before obtaining planning consents, given the variation in physical size across manufacturers; and

- Potential supply chain limitations around cable manufacture, leading to longer procurement periods.

2.50. Respondents were mixed in their views on the extent to which these are genuine concerns. Some respondents agreed that these were challenges, others did not. As part of their work on the tender specification, TNEI/Pöyry also considered the extent to which technology choice would impact on the preliminary works. They conclude that while HVDC is more complex than HVAC, there is no requirement to formally procure anything prior to the tender, provided that the party carrying out the preliminary works were able to assess project buildability to obtain planning consent.

2.51. We continue to believe that projects using HVDC technology are suitable for tendering under late CATO build. We do not consider, based on consultation responses and TNEI/Pöyry's analysis, that the potential barriers identified are material enough to make HVDC technology unsuitable for tendering. However, we also want to consider further how best to approach tendering for HVDC projects, specifically around interactions with the supply chain during the project development and tender process.

3. CATO obligations and incentives

Summary of proposals

We have considered the range of activities CATOs will need to perform, as well as our high level objectives for the regime that we outlined in chapter 1. In summary we propose that:

- While there is no one-size-fits-all approach for a CATO's obligations and incentives, we will establish a baseline CATO model that we can vary as appropriate for different projects.
- CATOs' obligations and incentives should more closely resemble incumbent TOs than OFTOs given their role as part of a relatively meshed onshore transmission network.
- A CATO's obligations will not be set out in one place – there will be obligations under their licence, as well as industry codes and standards.
- We will reinforce certain behaviours through a range of financial and reputational incentives. Specifically, we consider there is value in placing incentives on CATOs around:
  - Timely project delivery;
  - Operational performance (ie system availability and reliability);
  - Long term asset management over the revenue term;
  - Environmental performance; and
  - Enabling new customer connections, where required.
- CATOs will have appropriate financial structures to ensure their stability, and we will put in place appropriate mechanisms to mitigate the risk of a CATO not being in place.

Question 1: What do you think about our proposed package of CATO incentives? Do you think we are missing anything?

Question 2. What do you think about our proposals for the CATO availability incentive?

Question 3: What do you think about our proposals for CATOs to participate in a Network Access Policy (NAP)? How do you think the NAP could best be managed to accommodate CATOs?

Question 4. What do you think about our proposed incentives for CATO asset management? Do you have any views on how we could best appraise asset health?

Question 5: What do you think about our proposed obligation for CATOs to fund new asset investment during the revenue term?

Question 6. What are the main considerations to ensure CATOs are financially robust, particularly during the construction period?

Question 7. What do you think about our proposal that CATOs should provide a construction security and have a credit rating during construction? How might this affect costs to consumers?

Question 8. Do you have any views on our proposed CATO of last resort policy?

Question 9: What do you think of the scope of proposed changes to industry codes and standards for CATOs that we set out in appendix 4. What do you think would be the best mechanism for us to facilitate bidder market understanding of industry codes and standards (bearing in mind that Ofgem resourcing is limited and that there will always be a requirement for bidder due diligence)?

CATO activities

3.1. Since our October consultation we have further analysed the activities that CATOs should undertake to inform our work developing the regime and the obligations and incentives CATOs should have. As part of this work we tested our understanding through a workshop on CATO activities organised through the ENA. We will soon publish a report from the discussion on our website[15].

3.2. We consider that in general CATO activities can be split into three main categories:

- Construction: managing all construction activity including programme management, stakeholder management, regulatory reporting and interfacing with relevant parties (eg generators, the SO, TOs) on things like outage planning.

- Operations: ongoing operations and maintenance, including system monitoring, control room management, physical switching, safety

[15] Please check here: https://www.ofgem.gov.uk/electricity/transmission-networks/competition-onshore-transmission

management, stakeholder management, interface and outage management, asset management, and responding to SO requests.

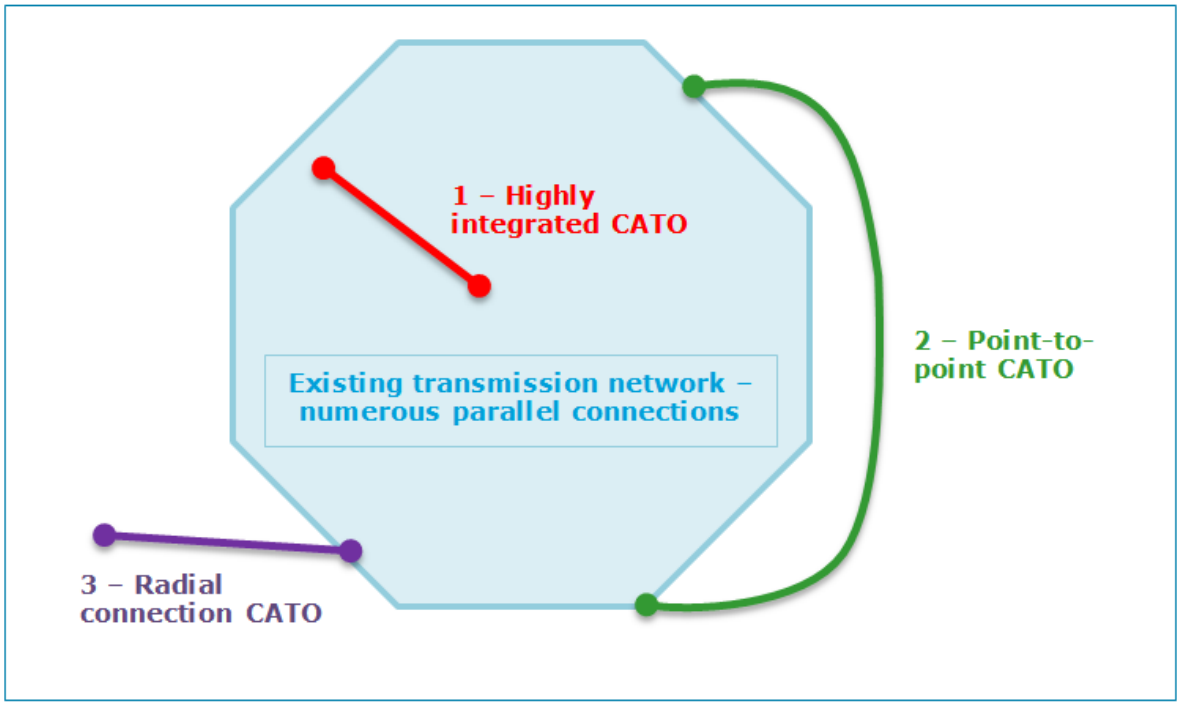
- Network planning and new connections: outage planning, data and modelling requirements (for SO and TO interactions depending on where a CATO's assets are in the network), interactions with the SO (and potentially generators) over new connections within a CATO's boundary of influence.

3.3. One of the main conclusions from our analysis is the potential for CATO activities to vary depending on where the CATO's assets are located in the network. For example, a CATO operating a radial link connecting a single generator would be less involved in activities like network planning and interface/outage management than a CATO in a highly meshed part of the network.

3.4. We propose that the exact role of each CATO should depend on the project and nature of its assets, as this will dictate the full suite of CATO requirements. For example, in certain circumstances direct commercial agreements with stakeholders might be required (eg nuclear generators, other TOs) – we expect these would be project specific and we would look to define these before tendering any project.

3.5. As part of their analysis around operational performance incentives discussed below, DNV GL determined that they expect there to be broadly three categories of CATO as summarised in their diagram below[16]:

[16] See report available at https://www. ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-tender-models-and-market-offering



3.6. The categorisations are:

- **Highly integrated CATO**: Essentially a highly meshed reinforcement of the existing transmission system, likely to have several interface points with other network owners and users.
- **Point to point CATO**: a bulk reinforcement to the transmission system, likely to contain a limited number of interfaces with other network owners and users.
- **Radial connection CATO**: an extension to the existing transmission system, for example to accommodate a new generator connection. These would be similar to OFTOs in many respects and would have limited interfaces with other network owners and users.

3.7. While these categorisations are not exhaustive of types of projects that may be suitable for tendering, we consider that they may serve as a useful starting point for CATO obligations and incentives going forwards. For each project we would also expect to be clear on the specific obligations and incentives as part of the tender process.

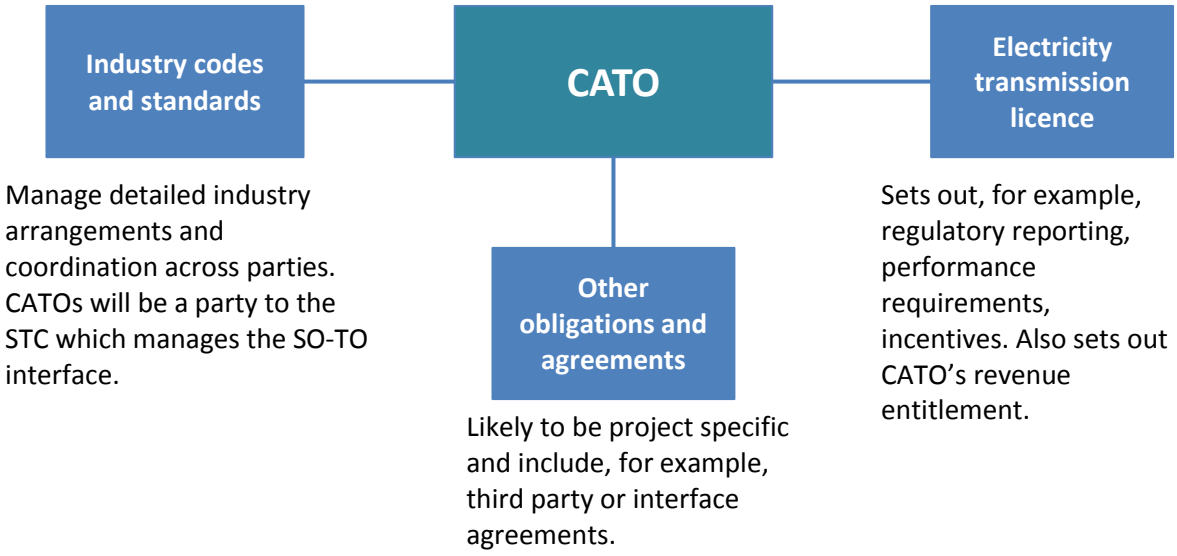
3.8. However, we think there is also a baseline set of activities common to all CATOs, which may be supplemented for particular projects. The remainder of this chapter describes our current view on this baseline and how we want to drive the right CATO behaviours to undertake all required activities (ie to plan, construct and

operate their network economically and efficiently). At a high level we think this is best achieved through a combination of:

- obligations (through industry codes and the CATO licence); and
- a range of financial and other incentives (also reflected in the CATO licence).

CATO obligations

3.9. The diagram below summarises the main CATO obligations:



Electricity Transmission Licence

3.10. CATOs, like all transmission owners, will have an electricity transmission licence through which they will be obliged (under Section 9 of the Electricity Act 1989) to develop and maintain an efficient, co-ordinated and economical system of electricity transmission. The licence does not constitute a contract between Ofgem and the CATO, or between the CATO and consumers. As a minimum, the licence conditions will provide for the following:

- Revenue that a CATO is allowed to recover for owning and operating its assets (paid by the SO);
- Details of performance requirements and revenue adjustments (ie financial incentives);

- High level obligations - eg making assets available for use by the SO or making connection offers;

- Reporting requirements to us, as well as to the SO for charging purposes; and

- Independence and business separation requirements.

3.11. Not all transmission owners are subject to the same licence conditions and obligations. We develop licence conditions to reflect the specific role that we want each licensee to play, which drives its obligations, as well as the broader regulatory context. For example, offshore transmission owners have a different set of standard licence conditions than onshore transmission owners. While these contain broadly the same requirements, there are some differences, for example around the credit rating requirements of OFTOs.

3.12. CATOs will neither have the large portfolio of assets of different ages and types that the incumbent onshore TOs have, nor necessarily the radial generator connections of OFTOs. We therefore do not consider that either the current onshore or offshore regulatory model is appropriate. We intend to establish a base CATO regulatory model, drawing on elements of our existing regulatory models where appropriate, with the potential to vary some elements for different types of project.

3.13. We acknowledge stakeholders' concerns about the consistency of incentives and obligations across different regimes. However, we intend to develop CATO incentives to be compatible with those of other network operators (including the SO and TOs).

3.14. We intend to develop a generic set of CATO licence conditions which will apply to any CATO. However, there may need to be some flexibility on a project and CATO specific basis. The simplest approach would be to award a new CATO licence for each tendered CATO project, although in some circumstances it might be more economic and efficient to grant CATO licence conditions to an existing transmission licensee (eg if an existing TO were to win a project). We would ensure the same requirements apply in both cases.

3.15. We also require that network companies report to us at specified intervals to ensure we are able to keep track of how well they are complying with their licence requirements. CATOs will be required to report to us at specific intervals and on the occurrence of specific events under the licence (eg if there is a period of system unavailability). There will be certain circumstances under which we can take enforcement action under the licence in the event of poor performance, ultimately being able to revoke the CATO licence. However licence revocation is a last resort and details will be provided as part of the licence on the circumstances where this applies.

Industry Codes and Standards

3.16. In addition to their licence, TOs and the SO are also bound by obligations under the industry codes and standards. These codes manage some of the detailed industry arrangements, and there are a number of codes and standards that apply to different industry participants.

3.17. We expect that CATOs would be required to comply with the System Operator – Transmission Owner Code (STC) and the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS), as is the case for other TOs and OFTOs (through their licence). These are the principal codes that CATOs will interact with, and interested parties should make themselves comfortable with the obligations contained therein.

3.18. The STC governs the relationship between the SO and TOs (onshore and offshore). The code sets out operational and informational requirements that assist the SO in its planning and operation of the GB network, and manages processes such as commissioning, outage planning & coordination, and new connections. The STC also obliges TOs to comply with specified relevant sections of the Grid Code.

3.19. The SQSS is a technical standard which sets out the planning and operating methodologies all onshore and offshore TOs in GB must follow. The standard is divided into sections, which vary in application between TOs and OFTOs. We would expect CATOs' assets to be planned in accordance with the onshore relevant aspects of the SQSS (sections 1-6). This includes the activities of CATOs themselves, and the party carrying out the preliminary works prior to any tender.

3.20. We expect to say more about the details of the requirements the industry codes will place on CATOs following further engagement with industry on the scope of the changes required. We consider that the current framework establishes a robust foundation on which to build, and that wholesale change to the framework is not required. Stakeholders confirmed this during the relevant ECIT industry group workshop hosted by the ENA[17] – the main theme was that the STC already provides much of the required arrangements, though it may need to be amended in certain places to accommodate CATOs.

3.21. Consequential changes to other codes may be needed to ensure that the SO can meet its obligations, and that all industry codes are in alignment. We have set out further details in appendix 4 on what all the relevant codes are as well as our initial view on where these may need to change to accommodate our policy proposals for CATOs.

[17] We will soon publish a report form this discussion on our website. Please check here: https://www.ofgem.gov.uk/electricity/transmission-networks/competition-onshore-transmission

Other obligations and agreements

3.22. In some circumstances CATOs may be subject to the requirements of regulatory agreements and arrangements which sit outside of the industry framework of the licence, codes and standards. We note that one respondent to our October consultation highlighted the specific requirements for TOs connecting nuclear generators through Nuclear Licensed Site Provision Agreements (NSLPAs). We understand from stakeholders that these agreements form part of nuclear licensee's safety cases. We are continuing to engage with stakeholders around NSLPAs and welcome comments on whether similar agreements would be required in different circumstances (eg commercial agreements to manage crossings or interfaces between a CATO and 3rd party).

CATO incentives

3.23. In addition to the obligations placed on TOs, we also use a range of incentives (for example financial and reputational) to reinforce specific behaviours. This is common across all network licensees and we tailor the package of incentives to reinforce specific relevant behaviours. This is in line with our duty to ensure that we regulate proportionally and consistently where relevant.

3.24. In our October consultation we proposed placing a financial incentive on CATOs to sharpen the obligation in the transmission licence to maintain asset availability. We also considered four other possible financial incentives around asset management, timely asset delivery, minimising transmission losses and innovation. We asked respondents whether there were any other areas we should consider using financial incentives. While the majority of respondents either did not respond specifically to the question or proposed no further financial incentives, several respondents proposed incentivising environmental, social or societal outcomes and stakeholder engagement. Several respondents also noted the need for consistency across all onshore TOs, including CATOs.

3.25. Building on our analysis of the activities we expect a CATO will need to perform, we have taken as a baseline the existing incentives on onshore and offshore TOs, before coming to an initial view on what incentives should apply to CATOs. These are outlined in the table below – we compare these against the incentives for OFTOs and incumbent TOs in appendix 5. As set out earlier, at a high level we consider that a CATO's role will align more closely with an incumbent TO than with an OFTO; this is reflected in the package of incentives we propose for CATOs:

Category	Proposed baseline CATO incentive
Safety	Nothing additional to compliance with existing law.
Reliability	Availability based financial incentive with penalties for poor performance and bonuses for outperformance.
Availability	Availability based incentive and obligation to develop a Network Access Policy (NAP).
Connections	Financial penalty worth up to 0.5% of annual base revenue for failure to meet obligations under the licence/STC
Asset delivery	'Payment on completion' – CATO revenue stream starts once construction is complete. No further incentives.
Environmental outcomes	SF6 incentive (to minimise leakage) – financial incentive based on performance against a target leakage rate. Reputational incentive around wider environmental performance – CATOs to report annually on transmission losses, business carbon footprint and work on visual amenity (where relevant, eg for new asset investment). Report to be published.
Asset management	Asset management incentive – periodic reporting on asset condition (ie similar to the asset evaluation element of NOMs) alongside a performance bond on asset condition at the end of the revenue term.

Availability and reliability

3.26. In our October consultation we proposed introducing an availability based incentive to drive CATOs' operational performance. The majority of respondents agreed that this is the most appropriate mechanism to use, as well as agreeing that we should consider how to structure this so that CATOs take a 'whole system' view. We appointed DNV GL to further investigate the most appropriate operational performance incentives for CATOs. As part of this work they reviewed responses to our consultation, shared their initial findings with an ENA working group[18], and liaised with the SO. We have published their report alongside this document.

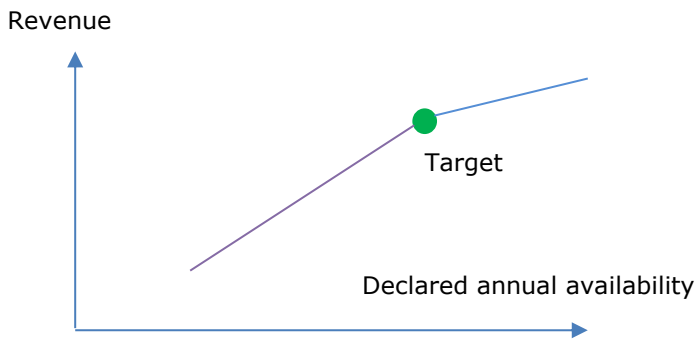
3.27. We do not think that Energy Not Supplied (ENS)[19] is an appropriate metric of availability for CATOs, as they may not connect demand customers directly, nor have the same control over network power flows that incumbent TOs have. DNV GL and the majority of respondents to our consultation also did not consider ENS to be an appropriate incentive for CATOs. We are proposing to base a CATO availability incentive on measured system availability. We believe this will be appropriate for a wide range of possible projects. The next table summarises our proposals for how the incentive will operate:

[18] We will soon publish a report form this discussion on our website. Please check here: https://www.ofgem.gov.uk/electricity/transmission-networks/competition-onshore-transmission

Scope	Our current proposals	Rationale and comments
Core incentive	Incentive based on measured annual availability (ie how often assets are available for use). Measured in, for example, megawatt hours (MWh).	Will be applicable to all potential types of CATO projects Availability is in general controllable by a CATO – will be able to influence asset availability therefore appropriate metric to incentivise.
	Symmetric incentive - Annual CATO availability target with penalties for underperformance and bonus payment for outperformance. Target could be for the whole CATO 'network' or for a specific part of the CATO 'network' (eg an individual asset or circuit)	Establishes a baseline (appropriate and achievable) against which to measure performance. Penalties to financially incentivise CATOs to meet the target; bonus payments to incentivise CATOs to increase annual availability (potentially beneficial for wider system operation, eg through greater flexibility). May be appropriate to treat CATO assets as a whole network for incentive purposes, or to incentivise different behaviours on different assets (eg if CATOs are particularly complex).
	Incentivise reliability (ie assets being available for use when they are needed) by reducing the incentives on a CATO to outperform against the annual availability target.	CATO penalties for underperformance would be more severe than the bonus for underperformance (ie each MWh of underperformance might be worth twice as much as any MWh of outperformance). Ensures CATOs remain incentivised to beat their annual availability target, but not so much that they neglect to perform planned maintenance.
	Limit on the maximum amount of annual CATO revenue at risk as a consequence of poor performance.	Ensure the incentive is of appropriate strength alongside other incentives CATOs have. Limit the potential downside risk to investors in any given year, ensuring investor interest and therefore promoting effective competition.
	Mechanism to 'carry over' poor performance from one year to impact subsequent years' revenue (eg if the annual revenue collar is reached).	Strengthens the incentive on CATO to maintain availability once annual revenue collar is reached. Ensures that consumers are compensated following poor CATO performance
	CATO to develop a Network Access Policy to manage outages and system availability (either in collaboration with other TOs or independently)	Non-financial obligation to ensure that all TOs and the SO collaborate around outage planning to enable cooperation and network development. Supplements current outage planning procedures in industry codes.
	Wider framework to set out CATO required capabilities, provided within industry codes.	Ensure that the SO understands CATO capabilities to enable effective network management. Currently managed though the STC and, for example, clear specification of the services TOs can provide.
'Bolt-on' incentive	Additional weightings could be added to the availability incentive to reinforce certain behaviours for specific projects or project types.	Could include, for example, seasonal weightings or higher weighting for planned outages, depending on the CATO type and role in the wider network.

3.28. With respect to our proposed incentive framework, we have considered the following aspects:

- **The 'core' incentive** – We consider that the 'core' incentive we propose would be appropriate to ensure CATOs focus on system reliability, not simply availability. Specifically we consider that an availability based incentive with adjustments for outperformance above a target level worth less than the penalty for performance below target could incentivise CATOs to ensure that required planned maintenance is carried out, while keeping an incentive to do it efficiently. This is simply illustrated by the figure below: the gradient of the line showing the relationship between annual availability and revenue is different above and below the target:



- **Availability target -** DNV did not investigate what the annual availability target should be for CATOs. Our initial considerations are that the incentive target (ie required percentage of annual availability) may vary depending on the project or technology used – different types of asset may need more planned maintenance or require lower annual availability than others. We will consider further whether we can develop a general target, either for all CATOs or different project types, and welcome stakeholders' feedback.

- **Strength of incentive and revenue at risk** - We intend to consider further the percentage of annual CATO revenue at risk through the availability incentive once we have decided the range of financial incentives CATOs should face. We will need to weigh the strength of the availability incentive alongside other incentives to be able to understand the overall level of risk that CATOs should face. We note that for OFTOs the availability incentive is relatively strong, placing a maximum of ten percent of annual revenue at risk, compared to three percent for incumbent TOs under ENS incentives. This reflects the different role

OFTOs play to incumbent TOs and our desire to strongly incentivise OFTO operational performance. Incumbent TOs have a broader range of incentives to perform a wider range of activities.

- **Availability for all or part of the network** - We also welcome stakeholders' views on whether the incentives should apply to a CATO's whole 'network' (ie all the CATO project assets) or different assets within its network (eg to different circuits or CATO sections). We think that we may in practice have to decide this on a case by case basis – a CATO could, for example, own a complex set of assets where it may be preferable to set different parameters, or it could have an overhead line connecting two substations with no other interfaces which may lend itself to a single approach. We also plan to consider further which approach may best enable the network to develop, and CATOs to add new capacity or build new assets over time where this is required (see 'New asset investment during the revenue term' below).

- **Network Access Policy** – In line with DNV GL's recommendation we propose that CATOs should develop some kind of NAP obligation to manage availability and enable effective outage planning across TOs and the SO. We therefore propose that CATOs should prepare a NAP, or participate in the preparation of the NAP in collaboration with other TOs (eg other CATOs). We note that currently there is one NAP for both Scottish TOs and a separate NAP for NGET. We would like your views on how best to structure the NAP going forwards, and how best to include CATOs, as well as whether any of the current NAP roles and responsibilities ought to be formalised in the industry codes.

3.29. **Using 'bolt-on' weightings -** As a general principle we want to avoid monetising any behaviour where an incentive is not required or appropriate. We therefore do not currently propose to use any of the additional 'bolt on' weightings suggested by DNV GL in the 'core incentive' for all projects (with the exception of asset management incentives which we discuss further below).

3.30. However, we consider that some of these 'bolt-on' weightings could play a role for particular project types, as different incentive structures may suit different project types. Based on the project types identified in DNV GL's report and discussed above, our initial view is that the following may be appropriate:

- *Radial connections*: Cyclical period incentives could ensure CATOs' assets are available at specific points of the year, which may be of benefit if, for example, CATOs are connecting new generators. We have a similar mechanism for OFTOs (which operate radial connections) where seasonal weightings sharpen the incentive to provide availability at the most important times of year (eg when wind conditions are best).

- *Point to point connections*: Depending on the nature of the connection, cyclical period incentives may be useful, alongside additional penalties on

unplanned unavailability (ie a higher weighting would be applied to an unplanned compared to a planned outage). This may incentivise greater reliability for these types of assets.

- *Highly integrated CATO*: We consider that reliability and flexibility would be fundamental to these project types, so consider unplanned unavailability factors, incentives for sticking to outage plans and emergency return to service incentives may be appropriate.

Connections

3.31. The transmission system is not static and users need to be able to connect to and use the system. The SO plays a key role in managing the connections process and engaging directly with customers; however TOs also play a role, including providing system information to the SO. We want to ensure that introducing CATOs does not negatively impact the process by which the SO is able to issue connection offers. We therefore consider that, in addition to the licence and STC obligations to respond to requests from the SO where relevant, CATOs should have a financial incentive to reinforce this behaviour.

3.32. Currently onshore TOs can be penalised up to 0.5% of annual base revenue in the event that they fail to comply with licence or codes provisions around enabling new connections. To administer this, the SO and TOs are required to report to us on their performance, including the numbers of connection offers made each year. We then review the information provided and, in the event of a failure to meet required timings, we can impose a financial penalty depending on the cause of the delay. We initially consider that the same incentive ought to apply to CATOs (ie a penalty for failure to perform of up to 0.5% of annual base revenue). We consider it important to have consistent incentives across TOs with respect to enabling new connections, and want to ensure that CATOs are incentivised to provide the same level of service as other TOs.

3.33. Under current industry arrangements CATOs would only be required to interact with the processes for new connections in certain circumstances, and the extent of any individual CATO's involvement would depend on the type of assets the CATO owns and where they sit in the network. For example, a radial connection would be much less likely to interact with potential new conectees than a highly integrated CATO. We note that the STC already establishes a 'boundary of influence' for each TO which in turn influences whether the SO is required to engage with TOs in offering new connections. We expect this to continue and CATOs to only be required to participate in the connections process where affected.

New asset investment during the revenue term

3.34. In our October consultation we proposed that CATOs should be responsible for new asset investment required on or connecting into their assets, if the investment does not meet the criteria for tendering. We noted that where new asset investment is required on or connecting into a CATO's assets, and it meets the criteria for

tendering, then we would run a tender to determine the CATO responsible for taking it forward, as per our usual tendering arrangements. Respondents generally agreed with these principles, and noted that:

- we should consider setting thresholds for the level of investment CATOs would need to fund, and
- we should consider further a framework for how costs would be assessed.

3.35. We continue to think that CATOs should be responsible for any new asset investment on, or connecting to, their assets, where the new investment does not meet the criteria for tendering. We will consider further the current SO-TO processes for triggering new investment, and whether any changes are required for CATOs. This will include further consideration of the circumstances where a CATO would be required to facilitate new investment, or where the responsibility should fall to an incumbent TO. We expect that the SO will continue to play a role in determining the most efficient route to bring forward any new investment.

3.36. CATOs may therefore in certain circumstances need to be responsible for new asset investment during the revenue term. While we expect that many CATO investors would be comfortable funding new asset investment, assuming they were able to earn a return on their additional investment, we also propose to place specific obligations on CATOs to ensure that the requirement to fund new asset investment is clear and that the party best placed to carry out new asset investment has the means to do so. We have considered further what form a new asset investment obligation might take. Several options for sizing the CATO's obligation to fund new asset investment are outlined in the table below:

Option	How would it work?	Pros	Cons
1 – Establish a fixed cost threshold, not relative to initial capex.	We would set a limit for the level of new investment the CATO must fund over the duration of the revenue term (eg no more than £200m), as well as potentially for each individual tranche of new investment (eg no more than £100m per investment).	▪ Would give CATOs reasonable visibility over the maximum additional funding obligations for individual projects/investments	▪ Risk that this may not cover all required investment over duration of revenue term, and thresholds for new investment may be many times higher than initial capex on smaller projects.

Option	How would it work?	Pros	Cons
2 – Establish a cost threshold relative to initial capex.	We would set a limit for the overall level of investment the CATO must fund during the revenue term that is no more than a certain % of initial capital expenditure by the CATO on its project (eg no more than 50% of initial capex), as well as a limit for each tranche of investment (eg no more than 20% of initial capex).	▪ Would provide some certainty to CATOs on level of maximum additional funding obligations over the revenue term ▪ Sizes the potential funding obligation to the initial capital outlay, which may result in a stable risk profile for CATO	▪ Might mean that over the revenue term the 'threshold' would be reached, creating a potential gap where the CATO is not obliged to invest for new connections ▪ For smaller projects any % is likely to be a low sum which might mean it does not capture possible projects and/or creates a gap against tendering criteria (eg some additional investment below the £100m threshold for tendering may not be delivered)
3 - No cost thresholds during the revenue term.	CATO must fund all new asset investment, irrespective of value of each investment or overall investment required over the duration of the revenue term.	▪ Would ensure the CATO can fund all works required over duration of revenue period – no gaps.	▪ Potentially creates a lot of uncertainty on level of additional funding required over the revenue term, which might lead to bidders pricing in risk ▪ May put pressure on a CATO's financial structure (eg by changing the CATO risk profile).
4 – A cost threshold (eg £100m) for each new tranche of investment, with no overall cost threshold during the revenue term	CATO must fund all new asset investment, irrespective of the overall value during the revenue term. However, cap on the total obligation to fund each tranche of new investment would be aligned to the 'high value' threshold for tendering, ie any investment over £100m would be tendered.	▪ Would provide some certainty to investors over their likely funding obligations during the revenue term. ▪ Would ensure that CATOs could fund any required investment.	▪ May still create uncertainty for investors and/or put pressures on CATO financial structures (albeit not to the extent of Option 3).

3.37. Our initial view is that Option 4 would both ensure CATOs have an appropriate obligation to fund new investment, without creating too much uncertainty for investors on what these investments would be. It is therefore our current preferred

option. We are keen to understand how potential bidders might perceive the risk/opportunity of this obligation, including how it might affect the terms of their bids. We also expect to consider further how industry arrangements would work to determine which TO (or CATO) should be responsible for undertaking what work. We will also consider further how we would assess, at the ITT stage, a CATO's ability to meet any obligation to fund new asset investment over the duration of the revenue term.

3.38. We expect to provide further details nearer the time they would be needed as to how we would determine the costs that CATOs would be allowed to recover in relation to new investment through their TRS. However, we expect that we might use a similar approach to that we use to assess costs of SWW projects to determine economic and efficient costs.

Asset delivery

3.39. We continue to believe that commencing the revenue stream on completion is an appropriate incentive for CATOs to complete construction on time, without the need for further delivery incentives. We note some stakeholders expressed concern in their response to our previous consultation, particularly NGET's concern about the consequences for delay and foregone CATO revenue being less than potential constraint costs.

3.40. We do not consider CATOs to have a higher risk of delayed completion of construction than incumbent TOs. Currently, incumbent TOs do not have specific positive incentives to deliver on time beyond reputational ones, and are also able to recover and earn a return on the value of assets added to their asset base during the construction period. In the event of late asset delivery, we are able to impose financial penalties and in setting the value of any penalties we would expect to take into account the cost to consumers. However, there is no direct mechanism to expose incumbent TOs to actual constraint costs from late delivery. We consider that commencement of CATO revenue on completion is an incentive of at least comparable strength to the potential to penalise incumbent TOs for late asset delivery. We therefore do not consider than any further delivery incentives or penalties would result in better outcomes for consumers.

Environmental outcomes

3.41. In response to our October consultation, several respondents highlighted the importance of driving positive environmental outcomes. Other respondents were keen to ensure that introducing CATOs has no adverse impact on the environment, including through project development and delivery, or planning of new infrastructure.

3.42. Under late CATO build during RIIO-T1 we expect that TOs will continue to be responsible for assessing the environmental impact of new infrastructure as part of the planning process and as part of the preliminary works they take forward before a tender[20]. Any commitment made during the planning process would need to be honoured by the CATO. We consider that the planning regimes in Scotland, England and Wales will ensure that CATOs adhere to these commitments, and that CATOs will be required to work with stakeholders as part of their general business management (eg to complete construction or manage maintenance effectively).

3.43. We expect that CATOs would put in place structures and resources to ensure they can engage effectively with stakeholders during construction as well as ongoing operations. We would evaluate the proposed approach to this during the tender. As such, we do not currently consider that financial incentives (either through rewards or penalties) would be necessary to ensure this happens.

3.44. However, we consider that there is potentially value around incentivising CATOs for wider environmental performance, consistent with incumbent TOs. Specifically we propose:

- SF6 (Sulphur Hexafluoride (SF6), a greenhouse gas commonly used in high voltage switchgear) performance:
    - CATOs should be financially incentivised to minimise SF6 leakage, given its damaging effect on the environment. We consider this might be based on a symmetric incentive against an SF6 leakage target. We think this would drive appropriate behaviour both in the preparation of bids and during construction/operations, to ensure greenhouse gas emissions are minimised. This is the incentive mechanism we currently use for incumbent TOs.
    - We have not yet considered the basis for the incentive, for example whether it would be a fixed percentage of annual base revenue or another measure, or what percentage of revenue would be at risk. Incumbent TOs' incentives are based on the non-traded carbon price for equivalent emissions.
- Reputational incentive around wider environmental performance:
    - CATOs, as businesses as well as TOs, will undertake a range of activities that impact the environment. These include operational activities that could contribute to transmission losses on their assets, their overall business carbon footprint or the impact of any

[20] We set out further details on preliminary works and the pre-tender process in our May consultation.

of their work on, for example, visual amenity (particularly if building new assets during the revenue term).

- We consider that CATOs could be required to submit to us and publish for the benefit of stakeholders a report of their performance in these areas. We think this would ensure CATOs focus on wider environmental outcomes as organisations, as well as providing us with relevant information to help with future policy. We expect to consider further relevant areas and are keen to engage further with stakeholders on what these might be.

3.45. We also expect to consider any areas of CATO performance relevant to their environmental impact during the tender process. For example, we would expect to look at transmission losses for each project at the ITT stage to drive bidders to consider fully the potential impact of their designs. As noted in chapter 2, we also consider there could be a role for variant or alternative bids or solutions in the tender process to drive further innovation, potentially around improving environmental performance.

Asset management

3.46. In our October consultation we considered introducing an asset management incentive for CATOs to ensure they are incentivised to maintain their assets over the whole duration of the revenue term. There was some support for this through responses to the consultation, as well as from stakeholders who participated in the ENA working groups on CATO activities and the CATO availability incentive. Many stakeholders have expressed concern about potential short-termism from CATOs operating assets over an initial revenue period that may be shorter than the assets' optimal life.

3.47. We consider that asset management will be a key CATO activity and want to ensure CATOs are incentivised to optimise asset life. We therefore propose to implement financial incentives, based on a CATO performance bond or financial security, to reinforce a CATO's general obligation to operate and maintain their assets. We are considering two broad options as outlined in the table below:

Option	How would it work	Pros	Cons
Option 1 – Revenue at risk if assets not in appropriate condition at end of revenue term.	Ofgem would set an explicit asset condition requirement for end of the revenue term, tied to some revenue at risk where asset conditions are not met, through a performance bond or financial security.	Financial incentive on CATOs to maintain assets to specified condition – should reinforce obligations.	Potentially complex to define required asset condition at end of revenue term, or to measure this (although this may in practice be required at some level in the tender specification). No regular reporting on asset condition – may prevent any action being taken until it's too late. CATO revenue at risk may be insufficient to cover cost to consumer of asset degradation (depending how we size the security)
Option 2 – As above, plus periodic condition assessment/ reporting	As above, but also at set intervals (eg every five years) CATO would have to formally report to Ofgem on asset condition (could be based on a similar evaluation methodology to Network Outputs Measures, something similar, or 3rd. party audit by independent engineer etc.)	As above but also provides us with information on asset condition before the end of the revenue term (ie to ensure we can require CATO to put a plan in place to rectify any issues). Could make it easier to use performance bond – ie money at risk if CATO fails to rectify any identified problems	May be complex to define required asset condition at end of revenue term or specified intervals. Increases the cost of CATO and Ofgem activity – need to review and interact with reporting at intervals – could mitigate by setting appropriate inspection intervals. CATO revenue at risk may be insufficient to cover cost to consumer of asset degradation (depending how we size the security)

3.48. For either of the above options we would evaluate proposed approaches towards asset management throughout the tender process. Our initial view is that Option 2 secures the right balance of ensuring that CATOs are subject to appropriate reporting requirements and financial incentives on asset condition. We initially propose that a five year inspection interval would strike the right balance between visibility over asset condition throughout the revenue term, without being an overly burdensome financial or reporting obligation for CATOs (or for Ofgem to review).

3.49. Once we have decided which option to take forward we will work to develop an appropriate methodology for inspections/assessment of asset condition. Incumbent TOs are currently subject to Network Output Measures (NOMs), which has an asset evaluation component. NOMs are measurements of asset health and criticality that enable us to assess the efficiency of historic network investment and the need for future investment and asset replacement. They also facilitate more

targeted incentives on network performance for TOs. We are currently working on the methodology for NOMs for TOs so until we know more about what this is going to look like going forwards we cannot make a decision on whether or not the NOMs methodology is appropriate to apply to CATO. We expect to set out further details in our next consultation.

3.50. For the avoidance of doubt, we are only considering using the asset evaluation methodology component of NOMs for CATOs, not the incentives that currently apply to incumbent TOs through NOMs. We do not consider these appropriate for CATOs given that CATO assets would be new and we expect bidders to include any required upgrades during the revenue term in their bids. We expect that this, combined with a financial incentive on the asset condition at the end of the revenue term, would optimise asset management from CATOs.

3.51. We consider that the performance bond could be structured similarly to the financial security we have in place for OFTOs. For OFTOs we require security to be in place by year 16 of a 20 year revenue term to ensure system availability is maintained at the end of the revenue term. Financial security is equal to 50% of base OFTO annual revenue and must be provided in a form acceptable to us. We could then call on this in the event of poor OFTO performance.

3.52. We expect to consider further our policy in this area for CATOs, including the size of the security and whether the performance bond could also be used to ensure continued CATO availability at the end of the revenue term as well as asset condition. We intend to set out further details on this in our next consultation.

Mitigating the risk of CATO financial distress

3.53. Some stakeholders have expressed concern about the potential stability of CATOs and the potential risk to security of supply in the event of a CATO default or financial distress. We consider the primary risks to a CATO's financial stability would be:

- CATO cashflow problems, principally during construction if costs are higher than expected, or during operations as a result of equipment failure, unexpected costs or asset unavailability;
- Default of a subcontractor, particularly during construction but also potentially during operations;
- A delay to the completion of the project, leading to a delay to revenue commencement; and
- An event having a material adverse impact occurring either during construction or operations.

3.54. We have a range of mechanisms to ensure the ongoing financeability of incumbent TOs and OFTOs, for example licence conditions to monitor financial health, as well as being able to assess financeability through offshore tenders or onshore price controls. For CATOs we intend to use a similar framework, and consider the following main elements would apply to mitigate the risk of financial distress:

- setting clear outputs through the tender specification and having clear and efficient change mechanisms in the CATO licence, for example protections around events having a material adverse impact;
- having an appropriate allocation of risk, so that financeability is not continually challenged – see chapter 4 for a further discussion on risk;
- financial licence conditions for CATOs similar to those in place for other TOs – including things like financial ring-fencing and regulatory reporting;
- a focus during our tender evaluation process on robustness and bidder capability, including financial deliverability, as well as cost; and
- CATO funder requirements (eg funders' due diligence and requirements around levels of gearing/protections).

3.55. We also consider that, in addition to the above, one or more of the following could also be used in order to further mitigate the risk of CATO financial distress:

- baseline finance structure requirements (eg around the maximum level of gearing CATOs should have);
- a requirement for a CATO to hold an investment grade credit rating during construction and operations;
- a requirement for a minimum CATO spend at any point to be financed from equity (ie a certain percentage of equity to be used upfront); and/or
- a requirement to post a construction security under the STC (eg CATO is required to post security with the SO for a percentage of capex during construction period).

3.56. Our current view is that, as with OFTO build arrangements under the STC, a construction security posted by the CATO with the SO would be an appropriate mechanism. For OFTOs this is designed partly as a commitment mechanism to the project, and partly as a practical measure to mitigate the risk of increased costs in the event of OFTO default during construction. We consider that a similar approach

should apply for CATOs. However, we do not think that a security of 20% of capex (as established for OFTOs) is necessarily the right level for all projects as it could represent a lot of money for very large projects. We welcome views on how best to structure this construction security, including from the SO on how the security could work.

3.57. We also think that requiring CATOs to obtain an investment grade credit rating during construction, as well as operations, would provide additional security on CATO financial structures, confidence to stakeholders, and potentially improve debt financing terms for CATOs. However, there are costs to obtaining a credit rating – both in terms of the rating itself as well as putting in place a financial structure to enable this. We consider this may be particularly challenging in the absence of any incoming cash flow during construction (see chapter 4). We welcome views from stakeholders on the potential impact of a requirement to hold a credit rating during construction.

3.58. We do not initially consider that requiring a specific gearing level or timing of equity injections to the project would necessarily be efficient, or result in a more secure CATO project company. However, we welcome stakeholder views and will continue to do further analysis.

CATO of last resort policy

3.59. We discussed in chapter 2 the potential risks during the tender process that could lead to a CATO not being in place. Alongside the measures we will take to mitigate these risks and the mechanisms we propose to put in place to mitigate the risk of a CATO experiencing financial distress, we also previously consulted on implementing a CATO of last resort mechanism to help diminish the impact of CATO default should it arise by appointing another existing transmission licensee to take on the CATO's assets. We have considered further how we think a CATO of last resort mechanism could work. This builds heavily on the OFTO of last resort mechanism currently in place. We have considered our policy around the following areas:

- Implementation:
    - We expect this would require amendment to all existing electricity transmission licences to incorporate a CATO of last resort mechanism (like for OFTO of last resort). We consider this could be accommodated by extending the existing OFTO of last resort licence provisions to also apply to CATOs.
    - We also expect that new CATO licences would contain a CATO of last resort mechanism.
- Appointment of a CATO of last resort:

- We want to retain a flexible process that can to take into account project circumstances and the reasons for the original CATO failure. Our general preference is for some competitive element to the last resort mechanism where possible (ie invite submissions), including on costs.

- Any CATO of last resort direction would be limited to electricity transmission licence holders, who we expect would have relevant competence and resources. We would need to consider at the time what revenue we would allow the CATO of last resort to receive.

- We would issue a direction and then amend the licence of the CATO of last resort to award extra funding to take on the project. We expect, as with OFTO of last resort, we would appoint a CATO of last resort for a limited period of time only (for OFTO of last resort it is for five years).

- Funding a CATO of last resort:

  - We do not intend to specifically tie CATO of last resort funding to the funding (eg TRS) awarded to the original CATO. There are likely to be differences in a range of factors, including different financing costs which would mean we would need to reconsider the level of funding to be awarded a CATO of last resort.

  - We expect, as with OFTOs, some of the CATO construction security could be used to cover any additional costs to build or operate the assets. There is a mechanism in the STC to offset any additional costs through the replacement OFTO charge. This allows the SO to use some or all of the construction security to reduce any additional amount it would otherwise need to recover from network users through transmission charges.

  - We would look at whether a CATO of last resort could step into any of the original CATO's contracts or agreements if this was the most efficient way to continue construction. This would depend on the circumstances of the default/financial distress.

4. CATO regulated revenue

Summary of proposals

At a high level we propose the following CATO revenue arrangements should apply as standard; however, we will need to consider whether these remain appropriate before each tender, depending on the nature of the project and the broader financial conditions at the time:

- Revenue to be paid through an annual TRS bid during the tender process;
- 25 year revenue term, usually commencing from completion of construction;
- Asset depreciation period aligned with the revenue term;
- Assets would remain the property of the CATO at the end of the revenue term;
- Gains made by CATO through debt refinancing and equity sales should be subject to some sharing with consumers;
- The proportion of annual revenue indexed to inflation should be proposed by bidders; and
- Revenue stream should be largely fixed, with a limited number of reopeners.

Question 1: What do you think about our proposal to start CATO revenue on completion? Do you have any views on whether there would be benefit in allowing some revenue before completion for certain types of project, and if so, what should this be tied to?

Question 2: What do you think about our proposal to align the depreciation period with the CATO revenue term?

Question 3: Do you have any views on our proposals for arrangements at the end of the revenue term?

Question 4: Do you have any views on our proposed debt refinancing sharing arrangements?

Question 5: What do you think about our proposal to include a mechanism to capture some of the benefit of a CATO equity sale? What impact do you think it would have on the cost of capital bid during the tender?

Question 6: What do you think about our proposed risk allocation for CATOs? How do you think we can best mitigate and/or allocate risks associated with preliminary works?

Overall regulatory approach

4.1. We still consider that a **regime based on a bid TRS** rather than RAV based approach (eg like RIIO) **is the most appropriate approach for CATOs**. This was largely supported by respondents to our October consultation. We continue to consider that a TRS based approach is better suited to regulating companies that we appoint following a competitive tender. We think this will allow us to extract the maximum value for consumers through the competitive tender process, specifically by allowing us to lock in the benefits of tendering for a relatively long fixed period, as well as providing certainty to potential bidders on project revenues, which we expect will lead to more competitive pricing of bids. We note that CEPA's recent report into the savings from tendering offshore transmission emphasised the importance of the tender process *and* the OFTO regime in delivering value for consumers[21]. CEPA highlighted the importance of the clarity of risk allocation with OFTO projects to date, as well as the transparency of the tender and licensing process and benefits driven by being able to optimise financing terms for a specific project based on the certainty of the fixed revenue period. We consider that all of those features also apply to our current proposals for regulating CATOs.

4.2. Two incumbent TOs did not agree with a TRS based approach. One noted that fixing the TRS would not allow us to fine tune incentives over the revenue term. Another suggested that a RIIO type approach of using revenue building blocks (eg depreciation, cost of capital) would provide greater transparency over CATO revenues. We continue to believe that RIIO is an appropriate approach for regulating networks through the price control process. However, as noted above, we consider that a TRS based approach will deliver better value for consumers alongside the tender process. We also consider that we will have sufficient transparency over CATO costs provided through the tender process, and do not expect the need to potentially revisit incentives for CATOs to be the same as incumbent TOs, given the different roles they will play on the network and the different nature of the assets they will be responsible for over the initial revenue period.

[21] https://www.ofgem.gov.uk/publications-and-updates/evaluation-ofto-tender-round-2-and-3-benefits

Commencement of revenue term

4.3. Our October consultation outlined our initial preference that CATO revenue should start on completion of construction, once the assets are available for use. Respondents generally agreed with this principle, with some caveats:

- One stakeholder highlighted that this would be unattractive to pensions funds who would expect returns from the outset; and
- Several stakeholders highlighted the potential for capitalisation of debt payments (and therefore extra costs to consumers) with long construction carry periods.

4.4. We continue to have confidence that **'payment on completion' is the most appropriate general policy for CATOs**. We consider that this will appropriately incentivise CATOs to complete construction on time. We consider that starting revenue before completion of construction would not generally be desirable, as it may reduce the incentive to complete construction on time and/or require specific delivery incentives to sit alongside other CATO incentives, increasing the overall complexity of the regulatory regime. We expect that 'payment on completion' would in general allow CATOs to secure competitive debt financing for projects, given that it is often used for other infrastructure projects (and is therefore generally understood by debt providers). We expect to keep this under review to ensure we deliver the right outcomes for consumers.

4.5. However, we also continue to think that there may be some circumstances where some level of payments during construction might be justified, for example:

- Where the construction period is longer than 3-5 years, CATOs may have to start paying significant debt interest before revenue starts, leading these payments to be capitalised. We consider that this may not represent value for consumers given the unnecessary costs of capitalising debt interest payments. We are keen to understand further from potential bidders how we could structure CATO revenue to avoid these costs for projects with long construction periods.
- There may be projects constructed in stages (eg with multiple connection or completion dates) where it would be more appropriate to tie revenue to the completion of these stages – this may be particularly relevant for larger, complex, projects with multiple sections or circuits.
- We are still considering whether project size, in terms of total capex, is a relevant factor to whether commencing (some) revenue before completion would result in more efficient outcomes for consumers. We consider that one of the main factors with project size could be the level of debt interest payments if they have to be capitalised, rather than overall project size itself. We are keen to hear from stakeholders to

better understand what the main considerations might be around high value projects, including what value might represent a 'tipping point'.

4.6. We expect that for tendered projects we will look for the best way to structure revenue in the event that projects are expected to have a 'long' construction period or are particularly large, staged or complex.

Duration of CATO revenue term

4.7. Our October consultation outlined our initial preference for a 25 year CATO revenue term from completion of construction. Respondents broadly supported this, making the following points:

- 25 years is a comfortable compromise between paying for the investment and attracting competition in sources of financing;
- A 25 year term should be attractive to a range of both equity investors and debt providers; and
- Financing is the main consideration around the duration of the revenue term – it is a more significant cost factor than O&M, which can in any case be fixed over a relatively long period.

4.8. Some respondents, including some of those who agreed generally with a 25 year revenue term, noted that a longer revenue term may be possible or preferable under certain circumstances. For example, some noted that certain equity investors are looking to hold the assets for a long period of time, and certain types of funds are keen to invest over long periods. Several other respondents noted that a revenue term up to 30 or 35 years would be possible without impacting financing, based on current market conditions. However, other respondents, while noting the possibility of having longer revenue terms, also highlighted that this may limit the financing options, particularly by preventing CATOs from using debt provided by banks. Several respondents suggested that allowing for some flexibility in the revenue term duration to allow for projects of different sizes may allow for the most appropriate solution for specific projects.

4.9. Based on these responses we continue to believe that a 25 year revenue term strikes the right balance between being attractive to a wide range of equity investors, facilitating competition in sources of debt finance (thereby driving down costs to consumers) and being an appropriate period to fix revenues without periodic review. We continue to believe that availability and cost of financing should be one of the main drivers in determining how long the revenue term should be, given the importance of financing costs to the overall costs consumers face.

4.10. In practice, some of the above considerations may change over time, with developments in financial markets or technology, or with the details of different tendered projects, including their size in terms of capex spend or perceived level of

risk. **Therefore we propose to set a 25 year revenue term as a general policy for CATOs**, but to retain some flexibility for individual projects depending on the circumstances when we start the tender. There may be circumstances in future where, for example a 30 year term could be more appropriate and would drive better value for consumers. We want to avoid locking out flexibility where it would be in consumers' interests.

Asset depreciation period

4.11. Our October consultation outlined our initial view that there may be benefits in having the same depreciation period for all onshore assets, which is currently transitioning to 45 years under RIIO-T1. This would mean that CATOs would assume a regulatory residual asset value at the end of the 25 year revenue term worth around 44% of the initial capex, assuming the straight line depreciation profile used for RIIO-T1. Respondents to our consultation raised the following points:

- acknowledgement of the logic of consistency with asset lives and the period over which consumers should pay, and indication that bidders would be able to structure bids on this basis.

- some concerns about the level of certainty that would be provided over residual value and how this would be paid. Some respondents highlighted that it could be seen as a risk which investors might price in their bids, or otherwise noted the additional complexity and costs with arrangements to enable this.

- one respondent highlighted that full depreciation during the revenue term is a common approach in other sectors and would represent the lowest cost to consumers. Another respondent proposed that a 25 year revenue term with residual value would be likely to deliver the most benefit.

4.12. We also noted some respondents' concerns about the incentives on CATOs to adequately maintain their assets during the revenue term, which could affect asset life, or the potential liability if another party has to take the CATO assets over at the end of the revenue term. We think these comments are relevant, not to the depreciation period, but to our policy around incentivising effective asset management to optimise the condition of the assets at the end of the revenue term – see chapter 3.

4.13. Having considered consultation responses and further analysed the impact of different asset depreciation options on what consumers will ultimately pay for the assets, we consider that we should not tie CATO asset depreciation to RIIO because:

- CATOs' revenue will be structured differently to TOs' as we intend to use a TRS not RAV based approach. This will affect the profile of consumer

payments over the asset life, which would be different under the two approaches.

- The RIIO depreciation period is also based on average economic lives of assets across the large portfolios that TOs have – the actual technical or economic life of any individual new asset (or project) may be different.

4.14. Given the above, we have considered further what the optimum period might be for depreciating a CATO's assets. We have analysed the potential impact on consumers of a 25 and 45 year depreciation period (for indicative purposes only), and what this might mean for consumers. Our analysis is summarised in appendix 6. We note that:

- Even without assuming any additional costs being factored into bids to account for risk around residual value, the scenario where the assets are depreciated over the same period as the revenue term results in better value for consumers.

- The potential benefits to existing consumers of having a depreciation period longer than the 25 year revenue term are likely to be weakened by the need to capitalise debt payments during the initial revenue term. This essentially means that both existing and future consumers pay more than they need to for the assets.

- The overall value for money for consumers in a model with a regulatory residual value would depend heavily on the financing costs applied to the portion of residual value. Given that this may require a specific financial instrument (for example a non-amortising bond secured by the residual value) we consider this has the potential to both limit the potential innovation in funding solutions for CATOs, as well as potentially result in higher debt costs, depending on the terms available and funders' views on the risk attached to any residual value.

- Responses to our October consultation highlighted the potential risks and/or complexities of having a regulatory residual value. We cannot know with certainty how this might affect bids and therefore value for money for consumers. Therefore we consider on balance consumers are better served by having a simpler model that avoids any unnecessary risk.

4.15. We acknowledge that fully depreciating CATO assets over the revenue term may mean that consumers pay for the initial capex of these assets over a period that may be shorter than their economic life. On balance however we consider that consumers are best served by aligning the depreciation period with the revenue term, given that we expect this would lead to the most efficient costs being borne by both future and existing consumers. Our current view is therefore that we should **align the asset depreciation period with the CATO revenue term**.

Arrangements at the end of revenue term

4.16. Our October consultation outlined four potential options for the CATO assets at the end of the revenue term: decommission the assets; CATO to continue to operate the assets; re-tender the assets; or transfer the assets to an incumbent TO. We also outlined our intention to make a decision on a preferred approach nearer the end of the revenue term, given potential uncertainties around future events that could impact our approach.

4.17. Respondents were keen for us to provide more certainty over treatment, noting, for example, the potential for this to impact bids. Several respondents also noted that investors may prefer to hold the assets following the initial revenue term. Incumbent TOs also expressed concerns about potentially having to take over assets that another party had owned and operated, particularly where the condition of the assets could not be guaranteed. We also note the relevance of concerns expressed by some stakeholders about the potential for 'short-termism' in how CATOs approach asset management, given the potential mismatch between technical asset life and revenue term.

4.18. We cannot predict with certainty what policy choices will be appropriate at the end of the CATO revenue term. However, we also consider that it may be helpful for stakeholders to understand our general considerations that are likely to be relevant to any decision we make at the end of the revenue term, namely:

- We only propose to tender assets that meet the criteria for tendering – as currently defined this means new, separable and high value, which would rule out re-tendering a CATO's assets unless they were completely replaced by new assets above the high value threshold.

- Like other TOs, we expect that a CATO licence would be granted in perpetuity and the assets owned by the CATO to remain the property of the CATO at the end of the revenue term.

- We intend to review the ongoing need for the assets at the end of the revenue term before making a decision on arrangements beyond that point.

4.19. Given the above, we do not therefore expect that we would look to transfer the CATO assets to an incumbent TO at the end of the CATO revenue term. Our current view is therefore that **it is likely that the CATO would continue to own and operate the assets** at the end of the initial revenue term **under some form of price control**, in line with our regulatory approach at the time.

4.20. We will consider further what obligations we expect CATOs to have for decommissioning their assets and how we will evaluate this as part of tenders. We expect this may vary by project, depending on the expected use and type of assets.

Debt and equity changes during the revenue term

Debt refinancing

4.21. We proposed in our October consultation to include a refinancing gain share mechanism in the CATO licence, similar to the one we have for OFTOs. This would allow consumers to benefit from any improvement in financing conditions and risk profile for the CATO, which could lead to windfall gains made by CATO investors through debt refinancing during the revenue term. We did not provide any more details on how we think this could work, or what sharing factors could apply. Consultation responses were generally in favour of having a mechanism to capture any windfalls through refinancing CATO debt, although some respondents were:

- unclear as to what it would capture, specifically around different financing structures;
- keen for more details on what the sharing would be – some respondents suggested it could be the same 50:50 sharing ratio as with OFTOs; and
- keen to extend the mechanism to include a 'pain' share (ie where consumers would also bear a percentage of any losses that a CATO made from refinancing debt).

4.22. We continue to believe that **including a debt refinancing gain share mechanism for CATOs is appropriate** to ensure that consumers benefit from any debt refinancing during the revenue term. We consider there is the potential for CATOs to make significant windfall gains from refinancing project debt, given that the risk profile of projects would be expected to change following completion of construction. As CATO projects would potentially involve high capex, these gains could be significant.

4.23. As per our position in our October consultation we propose that it should be a 'gain and not a pain' sharing mechanism. We expect bidders to propose a robust tender revenue stream during the tender, including financing costs over the duration of the project. Where there is a change in circumstances and the CATO is able to obtain a lower cost of capital for project debt, we expect that a CATO would look to take advantage of this. There is therefore a significant risk of foregone consumer benefits if some of the lower cost of capital is not passed through the CATO's TRS. We consider refinancing sharing mechanisms to be well understood by potential bidders, so are unlikely to increase the cost of capital initially bid. We would not expect that a CATO should need to refinance during the revenue term as a matter of course. Therefore, we would not expect a CATO to refinance where this would result in a higher cost of capital. We therefore do not propose to allow any pain to be shared with consumers.

4.24. We also propose that:

- The sharing mechanism would apply to externally provided debt (ie debt within a project structure provided by banks or capital markets). This is reflective of our policy for OFTOs and excludes the refinancing of shareholder or equity providers' loans which can be used as shareholder equity in a project financial structure. The policy intention of the sharing mechanism is to capture any windfall gains the investors might make through refinancing externally provided debt if there is a change in conditions in capital markets or the risk profile of the CATO. Therefore, we consider it is appropriate to capture gains in externally provided debt only. We are keen to hear from stakeholders as to how we can ensure this establishes a level playing field for all bidders, for example where bidders may have access to debt raised at a corporate level and provided in the form of shareholder loans to a project special purpose vehicle.

- The refinancing gain share mechanism would only apply where there is a demonstrable refinancing gain (ie increasing the shareholder distributions over the duration of the revenue term compared to what was initially bid). Therefore, if a bidder wanted to arrange a specific financing solution and/or 'bake in' a refinancing as part of their bid; the mechanism should only apply in the event that this increased the shareholder returns beyond what was projected during the tender. We consider that this leaves it open to bidders to put together the most competitive finance package, which could include, for example, a bridge loan to cover the construction period. We are keen to hear from stakeholders on how practical this scenario would be to reflect under the terms of any refinancing mechanism.

- While we do not expect a CATO would look to refinance externally provided debt during construction, we consider that the gain share mechanism should be in the licence from the outset and apply during the construction period otherwise there would be a risk that, depending on how 'construction' is defined, a CATO could seek to refinance during this period to avoid having to share the benefits with consumers.

4.25. We have considered further how we might structure the gain share mechanism. The two main options for the sharing factors that we consider could apply to any CATO debt refinancing gain share mechanism are outlined below:

Option	How this would work?	Benefits	Challenges
Option 1: 50:50 share – as for OFTOs.	The benefit of any refinancing would be shared 50:50 between the CATO and consumers	▪ Simple mechanism to implement and for stakeholders to understand.	▪ Potentially leaves large consumer benefits with the CATO – the overall impact could be material post construction given high value of CATO projects and pricing in of construction risk in initial debt finance terms.

Option	How this would work?	Benefits	Challenges
		▪ Likely to encourage CATOs to refinance as can keep a relatively large portion of the gain, given equal sharing	▪ Not aligned to other current refinancing models for project with construction risk (eg PFI).
Option 2: Sharing mechanism equivalent to mechanism for PFI projects[22]	This would be a step up from minimum 50:50 to maximum, 70:30 share between consumers and CATO, based on quantum of the gain, with 90% sharing of any gain through interest margin (debt cost) reduction.	▪ Returns a significant proportion of any refinancing gain to consumers (subject to size of overall gain and exactly where/how we set the thresholds). ▪ Step ups may ensure CATOs are incentivised to refinance, while ensuring consumers benefit from any large windfall gains.	▪ More complex to implement and calculate what the sharing should be, as well as thresholds. ▪ May disincentivise CATOs from refinancing if their gains are likely to be low (even if overall gains are high) – thereby preventing consumers from benefitting.

4.26. Our initial preference is for option 2, to put in place sharing factors in line with the current mechanism for PFI contracts under PF2. On balance we consider that the likelihood of significant gains from refinancing is high given the construction risk and potentially high capex (and therefore high levels of externally provided debt finance) for CATO projects. We think consumers should benefit from a significant portion of the refinancing gains from these.

Equity sales incentive mechanism

4.27. Our aim is to attract long term investors to own and operate CATO assets over the duration of the revenue term and beyond. We consider that the CATO market offering as proposed in this document would facilitate that. However, there is also a risk that a CATO investor could make a financial windfall by selling some, or all, of its equity stake in a project during the revenue term. We note that under PFI a market developed for equity sales on projects, which in some instances has seen the original investors making large windfall gains. This is value that is taken out of a project structure and not returned to taxpayers.

[22] As per HM Treasury's guidance for the standardisation of contracts under PF2: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221556/infrastructure_standardisation_of_contracts_051212.pdf

4.28. For incumbent TOs we decide at each price control what the regulated return on equity should be, which gives us the ability to change the return that shareholders can make. If, for example, the risk being taken by a network company changes, we can reflect that in lower allowed returns. As OFTOs have a longer fixed revenue term, we introduced an equity sale reporting requirement to allow us to capture information about any equity sale and use this to develop our tender policy further, if we have any concerns about the cost of equity for consumers. All OFTO tenders to date have been generator build where the OFTO does not take construction risk, thereby limiting the potential for investors to make any windfall gains.

4.29. For CATOs, given the potential for investors to make windfall gains through equity sales, we propose to implement an incentive mechanism in the CATO licence which would capture some of the reduction in the deemed cost of equity in the project company that could arise from an equity sale. In the table below we outline two potential options for how this could work:

Option	How this would work?	Pros	Cons
1. Clawback mechanism: Essentially a gain sharing mechanism between CATO and consumers.	The gain sharing mechanism could work, for example, through quantifying net reduction in CATO Internal Rate of return (IRR), following an equity sale. Some of the gain to be passed back through a lower TRS for the remainder of the revenue period. Similar to a debt refinancing mechanism.	▪ Allows consumers to benefit from a proportion of the windfall a CATO investor might make through an equity sale	▪ Could drive up bidders' initial required cost of equity, even if equity sales are only a possibility (ie may just increase costs). ▪ Potentially very complex to implement and use, for example, around determining the value of the reduction in the IRR to flow through to TRS. This would add costs for us and for bidders to implement and manage.
2. Equity sale incentive - equity sale would trigger a pre-defined (ie %) reduction of CATO TRS.	Ofgem would define the % reduction of TRS in advance of the ITT stage of the tender. If an equity sale occurs, the incentive would apply.	▪ As per clawback mechanism. ▪ Potentially simple to implement/ structure in licence. ▪ Transparent mechanism for CATO as well as potential buyer of CATO equity.	▪ Could drive up bidders' initial IRR even if equity sales are only a possibility ▪ Need for further analysis on what an appropriate % reduction would be.

4.30. We initially prefer option 2 as we consider it would be better value for consumers as it is more transparent to potential investors, as well as being simpler

to structure, and potentially more efficient in capturing gains. We are keen to understand from potential bidders what impact they expect this type of mechanism might have on the cost of their bids and/or whether it may influence their decision to bid for CATO assets, including the impact of any potential or perceived constraints on liquidity. We expect to also consider further in future consultations:

- Whether the incentive should cover equity only or also include, for example, subordinated debt contributing to the overall shareholder equity in a project structure. We may consider requiring bidders to specify during the tender process what constitutes debt and equity in their financial structure to ensure clarity;

- Whether there should be a threshold on the percentage of total equity sold to trigger the incentive (eg only a sale of over 15% of equity would trigger the incentive);

- Whether there would be any exceptional circumstances that would mean the incentive did not apply (eg financial distress); and

- In light of the above, how the incentive might be drafted clearly and efficiently in practice.

Indexation of revenue

4.31. We proposed in our October consultation to allow bidders to match the proportion of their revenue stream to be indexed to inflation with their actual exposure to inflation risk (what we call 'biddable indexation'). Respondents were generally in favour of biddable indexation, but also highlighted the complexity it can add to bid preparation and evaluation.

4.32. **Biddable indexation remains our preferred option for CATO tenders**. Despite the potential complexity to implement we consider that allowing bidders to match their inflation exposure under the TRS to their actual inflation exposure will result in better value for consumers by avoiding the risk of over or under indexation being priced into bids. We plan to do further work on how this will be reflected in the CATO tender process following future OFTO tender rounds (which also use biddable indexation), as there may be important lessons for us to learn through those tenders.

4.33. We also proposed in our October consultation that the TRS could be indexed to either the retail price index (RPI) or consumer price index (CPI), noting that we were, at the time of publication, consulting on the potential benefits of moving to the CPI for future OFTO tenders and interconnector projects. Not many respondents noted a preference, although some who responded to our consultation also responded to our consultation on CPI/RPI for OFTOs and interconnectors. One of the incumbent TOs also raised concerns that we would be changing the inflation index for RIIO to the CPI.

4.34. We do not consider that we need to come to a decision now on whether to use the RPI or the CPI as the inflation index for CATO projects. As outlined in our decision for OFTO and interconnector projects[23], there are still uncertainties around the practicalities of moving to CPI. We expect to monitor developments, including through our approach to OFTOs and interconnectors, before reaching a decision for CATOs. We will decide on which inflation index to use in advance of the first CATO tender.

4.35. We would also like to reiterate that any decision we make around the inflation index to use for CATO projects (and for OFTOs and interconnectors) would be separate from decisions on indexation under RIIO. As we highlight in our decision on OFTO and interconnector projects, any change to the inflation index for RIIO would require consultation before implementation.

Risk allocation

General approach

4.36. In our October consultation we outlined a preference for CATO bidders to submit fixed price bids at the ITT stage of the tender, with a limited number of reopeners, rather than apply capex or totex sharing factors to the revenue after CATO appointment. The majority of respondents who expressed a preference agreed that sharing factors are not likely to be efficient as part of a competitive process to appoint a CATO. Some respondents noted that it could drive an inefficient approach to risk management and pricing in bids.

4.37. We also sought views on what risks might not be economic and efficient for CATO bidders to price into bids. Respondents generally noted that reopeners should be limited in order to maximise the impact of competition on CATO costs. A general theme from responses was that where a cost or risk is beyond a CATO's control, then a reopener should apply as it would not be efficient for a CATO to price the risk. Specific suggestions made by stakeholders were:

- materials inflation (ie metal prices)
- forex/base rates
- financing costs beyond commitment periods
- unexpected ground and contamination risk
- unusual/extreme weather
- change in design and specification
- change in law
- business rates
- change in planning consent
- risks arising from shortcomings of preliminary works.

[23] https://www.ofgem.gov.uk/ofgem-publications/99800

4.38. In appendix 7 we outline in further detail our initial views on the risks that should be allocated to CATOs. As a general principle we consider that CATOs should be exposed to the risks that it is economic and efficient for them to manage. This is consistent with our approach to the allocation of risk to all network owners. We expect that CATOs can efficiently manage a particular risk in different ways, for example:

- Bidders could undertake effective due diligence as part of the tender process to identify project risks and reflect this in the terms of their bids;
- CATOs could manage the impact of a risk materialising, for example through contingency financing, insurance arrangements or commercial agreements such as warranties; and
- CATOs could manage risk through their own actions during construction and operations, including their ability to influence third parties (eg subcontractors).

4.39. We are not seeking to materially alter the risk allocation to the party constructing electricity transmission assets. However, as highlighted throughout this document, we propose that the CATO regime will be different from RIIO, which might manifest itself in different mechanisms for managing some risks, or for a clearer allocation of risk to CATOs given the different risk management mechanisms.

Adjustments for unforeseen events

4.40. The extension of our reasoning above is that for CATOs, like other TOs, there will be some risks it is not efficient for them to bear, specifically where an event is beyond a CATO's control. While we do not expect to be prescriptive on what all of the risks beyond a CATO's control might be, we do intend to specify the risks that we expect a CATO to bear. We have set out further details in appendix 7.

4.41. We expect to include several licence mechanisms to allow for any adjustment to CATO revenue as a result of unforeseen events. We consider that two types of mechanism may apply:

- Mechanisms to adjust for specific pre-defined events beyond a CATO's control. This would include, for example, changes in business rates; and
- Mechanisms to adjust for unknown events beyond a CATO's control. We would expect to make decisions on such events on a case by case basis, in line with our statutory duties. We expect to clearly outline what risks this would *not* cover through setting out our general policy on CATO risk allocation.

4.42. Our risk allocation framework is intended as a general guide to our policy for CATOs. We may decide for any given project that a particular risk would not best be

borne by the CATO where this would result in economic and efficient outcomes. We would therefore consider allowing, for example, licence protection or risk sharing mechanisms between the CATO and consumers. We expect our approach would depend on the nature of the risk. This is consistent with the approach that we have taken to, for example, SWW projects under RIIO where we have included project specific mechanisms to deal with certain risks. Even where we allowed a licence protection or risk sharing mechanism for a particular risk, we would ensure that CATOs are still incentivised to do whatever they can to avoid or mitigate the impact of any risks and ensure that a licence protection or risk sharing mechanism does not unnecessarily expose consumers.

Risks arising from preliminary works

4.43. Some respondents to our previous consultation suggested that a CATO should bear no risk as a result of preliminary works (eg in RIIO-T1 if these were performed badly by the TO, or where inaccurate or incorrect information was provided in the tender specification). We think it is important to ensure that all parties have appropriate incentives in relation to preliminary works, specifically:

- The party carrying out the preliminary works should be incentivised to undertake preliminary works to an appropriate standard; and
- Bidders should be incentivised to undertake effective due diligence on preliminary works through the tender process.

4.44. Therefore we do not consider *in general* that risks arising from inadequacy of preliminary works should sit with consumers. We consider that any kind of general reopener for CATOs around preliminary works may disincentivise effective bidder due diligence and/or completion of preliminary works to appropriate standards by the party carrying out those works. We expect that:

- The party carrying out the preliminary works would add to the tender data room all relevant information in advance of the tender;
- Bidders would have an opportunity to review this information during the tender. If any errors or inconsistencies are found in the information, bidders should highlight this as part of their clarifications or submissions at relevant tender stages;
- If we consider that there are any issues with preliminary works, the party carrying out the preliminary works should rectify these as soon as possible;
- Where it is not possible for the party carrying out preliminary works to rectify any issues before final bids are submitted at ITT, we would consider how best to proceed. We may consider whether the party carrying out preliminary works could perform remedial works before we

appoint the CATO, or whether it could provide indemnities to the CATO. We would like to discuss further with stakeholders what the best approach might be;

- In general the benefit of any warranties or contractor's liabilities for preliminary works should transfer to the CATO along with the works themselves; and

- If there are project specific characteristics that alter the overall risk profile of a project, or the preliminary works that are required (eg additional surveys or studies), we expect the party responsible for preliminary works would identify these to ensure bidders have the relevant information in the tender specification and data room.

4.45. We consider this process will appropriately allocate risk. We are keen to hear from stakeholders as to whether any independent (ie a third party procured by Ofgem) assurance on preliminary works before or during a tender would enable a more effective process and help to mitigate any potential concerns about appropriate risk allocation.

Appendices

Index

Appendix 1 - Consultation Response and Questions

Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

Responses should be received by 29 September 2016 and should be sent to:

Gordon Hutcheson
Transmission Competition Policy Team
Ofgem
9 Millbank
London
SW1P 3GE

Tel: 0207 901 3927
Email: TransmissionCompetition@ofgem.gov.uk

Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

CHAPTER: One

Question 1: How well aligned do you think the proposals in this document are with our objectives for onshore competition?

Question 2: What do you think are the implications of our overall proposed policy around the tender process, CATO incentives and obligations on CATO cost of capital and levels of competition for a CATO licence?

CHAPTER: Two

Question 1: What do you think about our proposed approach to tender evaluation? Are any elements missing that we ought to look at?

Question 2: What are the main detailed aspects/criteria of our evaluation that you would like further clarity on as a priority over the next few months in order to inform your decision on whether or how to bid?

Question 3: What do you think about our proposals for variant bids? Which areas are likely to lead to the largest benefits for consumers?

Question 4: How could Ofgem best value the relative merits in variant bids of enhanced consumer outcomes, potential savings and likelihood of delivery where these do not align?

Question 5: Do you consider that our proposed tender process stages and timings provide sufficient time for interaction with the supply chain and bidders to undertake required design work in order to put forward robust, fixed price bids at the ITT stage?

Question 6: Which contracts from preliminary works would you expect to be novated to the CATO on appointment?

Question 7: What are your views on the potential value, and practical implications, of a share sale model for tendered RIIO-T2 projects?

Question 8: Based on your understanding of the HVDC supply market, what are the priority areas we should be looking to consider over the next few months in order to ensure HVDC projects can be tendered efficiently under late CATO build?

CHAPTER: Three

Question 1: What do you think about our proposed package of CATO incentives? Do you think we are missing anything?

Question 2. What do you think about our proposals for the CATO availability incentive?

Question 3: What do you think about our proposals for CATOs to participate in a Network Access Policy (NAP)? How do you think the NAP could best be managed to accommodate CATOs?

Question 4. What do you think about our proposed incentives for CATO asset management? Do you have any views on how we could best appraise asset health?

Question 5: What do you think about our proposed obligation for CATOs to fund new asset investment during the revenue term?

Question 6. What are the main considerations to ensure CATOs are financially robust, particularly during the construction period?

Question 7. What do you think about our proposal that CATOs should provide a construction security and have a credit rating during construction? How might this affect costs to consumers?

Question 8. Do you have any views on our proposed CATO of last resort policy?

Question 9: What do you think of the scope of proposed changes to industry codes and standards for CATOs that we set out in Appendix 4. What do you think would be the best mechanism for us to facilitate bidder market understanding of industry codes and standards (bearing in mind that Ofgem resourcing is limited and that there will always be a requirement for bidder due diligence)?

CHAPTER: Four

Question 1: What do you think about our proposal to start CATO revenue on completion? Do you have any views on whether there would be benefit in allowing some revenue before completion for certain types of project, and if so, what should this be tied to?

Question 2: What do you think about our proposal to align the depreciation period with the CATO revenue term?

Question 3: Do you have any views on our proposals for arrangements at the end of the revenue term?

Question 4: Do you have any views on our proposed debt refinancing sharing arrangements?

Question 5: What do you think about our proposal to include a mechanism to capture some of the benefit of a CATO equity sale? What impact do you think it would have on the cost of capital bid during the tender?

Question 6: What do you think about our proposed risk allocation for CATOs? How do you think we can best mitigate and/or allocate risks associated with preliminary works?

Appendix 2 – Tender specification

The table below summarises our proposed baseline tender specification, as outlined in our May consultation. We have now received responses to our May consultation, including around the tender specification which we will consider further. The ENA also chaired a discussion to gather stakeholders' feedback on our proposed tender specification as per the table below.

Category	Type	Documents
Design	Concept	Needs Case Report; Optioneering Report; Functional Specification; Single Line Diagram; records of supply chain engagement; conceptual project plan/programme.
	Preliminary	Route corridor study report; initial drawings/designs and specifications for major components; initial plans and specifications for construction techniques access and logistics; reporting on any supply chain limitations due to initial design choices; contracts, designs etc. for any early procurement.
Studies/ Surveys	Geotechnical	Geotechnical desk study; peat slide risk assessment report and data; phase 1 contaminated land report; preliminary UXO/UXB risk assessment; borrow pit assessment report; ground investigation report; targeted topographical survey report.
	Ecological	Phase 1 Habitat report; protected species survey reports; hedgerow survey reports; national vegetation classification survey report; ornithological survey reports;
	Logistics	Initial access studies and feasibility; Traffic Impact Assessment; Approval in Principle (AIP) with relevant highways authorities.
	Electrical	System studies reports; contingency analysis reports; TO and SO Outage schedule; detail of DNO crossings; system models/data; harmonics data; information on TO and SO interfaces (eg design of electrical boundaries); information on third party interfaces (eg generators, other CATOs).
	Offshore	Offshore geotechnical report based on geophysical surveys as a minimum; metocean study based on regional modelling as a minimum; Information on

		availability of offshore installation vessels.
	Other	Noise assessment report (initial design); noise assessment report (detailed design); construction noise assessment; Landscape and Visual Impact Assessment; Electro-magnetic Field assessment; flood risk assessment; archaeological assessment; detailed geotechnical assessment of ground conditions; detailed archaeological assessment.
Consenting	Social Commitments	Statement of Community Engagement; summary of (or copies of) consultation responses; community liaison group minutes.
	Application Process	Application documents; draft or final consents/licences; summary of pre-application discussions; submissions and documents (eg gatecheck Reports; written responses; inquiry reports).
	Consents	Depending on project type and location would include: Section 37 Consents & Deemed Planning Consents; Development Consent Orders; Marine Licences; planning consents for elements consented through the Local Planning Authority/Local Authority.

Appendix 3 – Tender process risks and mitigations

This appendix sets out our views on the main risks arising through the tender process and the range of mitigations we think there are. As noted in the main document, we consider CATO of last resort to be a last resort mechanism only given the range of alternative mitigants.

Tender process risk	Preventative measures	Mitigations if the risk arises
No suitable qualifying bidders	▪ Consult extensively on form of tender and requirements ▪ Provide clear guidance to bidders on our evaluation strategy for each tender	▪ Re-run tender or reconsider qualifying requirements and re-run tender ▪ Cancel tender – CATO of last resort
Tender submissions are not robust enough/do not past thresholds (eg at ITT)	▪ As above	▪ Re-run tender or tender stage ▪ Consider re-scoping project then re-running tender stage(s) ▪ Cancel tender – CATO of last resort
Insufficient number of bidders (at any tender stage)	▪ Provide as much notice as possible on projects that will be tendered, project marketing, etc. ▪ Consult extensively on the CATO 'market offering' to ensure it is commercially attractive while protecting consumers interests	▪ Re-run tender or tender stage ▪ Consider re-scoping project then re-running tender stage(s) ▪ Cancel tender – CATO of last resort
Preferred bidder (PB) withdraws	▪ Design tender to select an appropriate PB ▪ Bid costs act as a commitment device	▪ Appoint reserve bidder (expect we would appoint at least in initial tenders) ▪ Re-run a tender stage (eg a shorter version of ITT) ▪ Cancel tender – CATO of last resort
Delay to planning consent/other preliminary works being complete	▪ Final tender checkpoint to determine when to start the tender – can look for any risk factors with planning consent	▪ Continue with tender timings as planned (following assessment of risk) ▪ Pause further tender stages to wait for planning process
Planning consent application is unsuccessful	▪ As above	▪ Pause further tender stages while party responsible for preliminary resubmits planning consent ▪ Cancel tender exercise if fundamental problem with project

Tender process risk	Preventative measures	Mitigations if the risk arises
		scope (possible future re-tender with new scope)
Need for the project falls away – no longer required	▪ Final tender checkpoint will assess project need prior to tender ▪ We expect to keep under review before each tender stage	▪ Cancel tender exercise if fundamental problem with project scope (possible future re-tender with new scope)
Need for the project changes significantly, materially changing project scope	▪ As above	▪ Cancel tender exercise if fundamental problem with project scope. ▪ Consider whether project still meets the criteria for tendering. If so, then run another final tender checkpoint followed by possible future re-tender with new scope.

Appendix 4 – Industry codes and standards

This appendix sets out our initial views on where industry codes may need to change to accommodate our proposals for CATOs. We expect to work further with industry over the next few months to help us fully scope the changes required. We expect bidders to make themselves aware of each of the industry codes and standards and their obligations under them.

STC

The System Operator – Transmission Owner Code (STC) governs the relationship between the GB System Operator and Transmission Owners (onshore and offshore). The code sets out operational and informational requirements that assist the SO in its planning and operation of the GB network, and manages processes such as commissioning, outage planning/coordination and new connections. National Grid Electricity Transmission (NGET) is the administrator for the STC, with changes being approved by the Authority.

CATOs will be required to accede to the code as a condition of their transmission licence. We have summarised below areas where we think changes may need to take place to accommodate CATOs.

Section	Change
Section B – Governance	Amendment to the Governance arrangements to include CATOs.
Section C – Transmission Services and operations	Review of arrangements to acknowledge where responsibility lies for England and Wales, where NGET is not the Transmission Owner.
Section D – Planning Coordination	Review of arrangements to check for suitability for additional CATOs. Dependant on changes to Section J – Interpretation and Definitions
Section E – Payments and billing	Dependant on review of Section J – Interpretations and Definitions.
Section F – Communications and Data	(Applicability) Dependant on review of Section J – Interpretations and Definitions.
Section G – General Provisions	Amendments to 3. Nuclear Installations to account for NSLPAs with CATOs. Review of arrangements for CATO of last resort under the STC.

Section	Change
Section H – Dispute Resolution	Dependant on review of Section J – Interpretations and Definitions.
Section J – Interpretation and Definitions	Various definitions to be reviewed to include CATOs, eg Onshore Transmission Owner; Interface Point
Section K – Technical, Design And Operational Criteria And Performance Requirements For Offshore Transmission Systems	N/A
Schedule 1 – Accession Agreement	None identified.
Schedule 2 – List of Code Procedures	Review of Code Procedures arrangement to include CATOs.
Schedule 3 – Information and Data exchange specification	Dependant on review of Section J – Interpretations and Definitions.
Schedule 4 – Criteria for assessing those transmission systems affected by a construction project	Review arrangements for updating boundaries of influence, and including new boundaries.
Schedule 5 – NGET connection application	Dependant on review of Section J – Interpretations and Definitions.
Schedule 6 – NGET Modification applications	Dependant on review of Section J – Interpretations and Definitions.
Schedule 7 – System construction applications	Dependant on review of Section J – Interpretations and Definitions.
Schedule 8 – TO construction offers	Dependant on review of Section J – Interpretations and Definitions.
Schedule 9 – TO construction terms	Review pro forma arrangements to include CATOs.
Schedule 10 – Charges	Dependant on review of Section J – Interpretations and Definitions. Review arrangements for CATOs.
Schedule 11 – TEC Exchange Rate Applications	Dependant on review of Section J – Interpretations and Definitions.
Schedule 12 – TO TEC Exchange Rates	Dependant on review of Section J – Interpretations and Definitions.
Schedule 13 – NGET requests for statement of works	Dependant on review of Section J – Interpretations and Definitions.
Schedule 15 – Transmission Interface Agreement	Dependant on review of Section J – Interpretations and Definitions.

Security and Quality of Supply Standard (SQSS)

The Security and Quality of Supply Standard (SQSS) is a technical standard which sets out the planning and operating methodologies all onshore and offshore TOs in GB must follow. NGET acts as the administrator for the code, and along with the other Transmission licensees is required by licence to maintain the standard. Changes to the SQSS are approved by the Authority.

CATOs will be required to comply with the SQSS as a condition of their transmission licence.

We expect that the SQSS will need changes to accommodate CATOs, and have summarised this in the table below.

Section	Change
Definitions	Various definitions to be reviewed to accommodate CATOs eg definition of small/medium/large power station; definition of onshore transmission licensee.
Rest of Code	References to SPT, SHETL, and NGET throughout code to be reviewed to accommodate CATOs. Dependent on review of definitions.

Grid Code

The Grid Code is primarily a document for parties who interact with the GB Transmission network, for example Generators and Demand users. Its role is to set out the planning and operational details between NGET as System Operator and those users of the system, as well as setting the technical capability and connection specifications of those users. The Grid Code is administered by NGET, with any changes to the code being approved by the Authority.

The STC requires TOs to comply with certain sections of the Grid code, and specifies how certain activities involving the TOs will take place. CATOs should therefore to be aware of their specific roles and responsibilities under the Grid Code.

We expect that elements of the Grid Code, as summarised below, may need to change to accommodate CATOs. In particular, various definitions and references to specific geographical locations may need to change.

Section	Expected Change
Glossary and Definitions (GD)	Various definitions to be amended to accommodate CATOs, eg Definition of Large/Medium/Small Power station
PC – Planning Code	Various references to Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs.
CC – Connection conditions	Various references to Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs.

Section	Expected Change
GC – General conditions	Review of the Governance arrangements to include CATOs.
OC2 – Operational planning and data provision	Various references to arrangements in Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs.
BC – Balancing Code	None identified.

Distribution Code

The Distribution Code is applicable to all GB distribution networks, and is administered by the Energy Networks Association. As for the Grid Code, the Distribution Code sets out the technical and operational specifications that users of the distribution networks must adhere to. Each Distribution Network Operator (DNO) uses the same code.

As the code applies to distribution networks and distribution network users, we do not expect a CATO to become a party to this code. However, we think that some arrangements in the Distribution Operating Code and some definitions may need to change to accommodate CATOs, as summarised in the table below.

Section	Change
DGD - Distribution Glossary and Definitions	Various definitions to be amended/aligned to Grid Code to include CATOs, eg Definition of Large/Medium/Small power station; Onshore Transmission Licensees.
DOC – Distribution Operating Code	Various references to Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs eg DOC9.4.2 Black Start Procedures.

Connection and Use of System Code (CUSC)

The Connection and Use of System Code (CUSC) sets out the conditions for connection and use of the GB transmission network, and also contains the methods by which transmission network charging costs are calculated and allocated to users. The code is administered by NGET.

We expect that elements of the CUSC may need to change to accommodate CATOs, in particular geographical references and definitions. We have summarised in the table below some of the areas that will need to be reviewed.

Section	Change
Section 1 – Applicability of Sections and related Agreements Structure	None identified.
Section 2 – Connection	Various references to Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs eg Safety rules 2.10.1, Interface agreement 2.11.1
Section 3 – Use of System	None identified.
Section 4 – Balancing Services	Dependant on review of Section 11 – Interpretation and Definitions.
Section 5 – Events of Default, Deenergisation, Disconnection	Various references to Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs eg Removal of User Equipment 5.3.4(a)(i)
Section 6 – General Provisions	Various references to Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs eg User Pulse data 6.7.8
Section 7 – CUSC Dispute Resolution	None identified.
Section 8 – Modifications	Dependant on review of Section 11 – Interpretation and Definitions.
Section 9 – Interconnectors	Various references to Scotland/offshore or England and Wales to be reviewed to determine whether these accommodate CATOs eg Safety rules 9.13
Section 10 – Transitional Issues	None identified.
Section 11 – Interpretation and Definitions	Various definitions to be amended to accommodate CATOs, eg Definition of Relevant Transmission Licensee
Section 13 – Enabling works	None identified.
Section 14 – Charging Methodologies	None identified.
Section 15 – User Commitment Methodology	None identified.
Exhibits A-W	To be reviewed to determine whether these accommodate CATOs. In particular, dependent on review of Section 11 – Interpretation and Definitions.
Schedules 1-3	To be reviewed to determine whether these accommodate CATOs. In particular, dependent on review of Section 11 – Interpretation and Definitions.

Balancing and Settlement code (BSC)

The Balancing and Settlement Code sets out the arrangements for balancing and settling the electricity system in GB between users, for example suppliers and generators. The BSC is the method by which the SO can buy or sell electricity to rectify generation and demand imbalances in the market. The code is administered by Elexon, with changes approved by the Authority.

We have not identified any changes that will be required to the BSC to accommodate CATOs.

Distribution Connection and Use of System Code (DCUSA)

The Distribution Connection and Use of System Code (DCUSA) sets out the charging and connection arrangements for the distribution networks.

We have not identified any changes that will be required to the DCUSA.

Appendix 5 – TO incentives

The table below provides a comparison of our proposed CATO incentives with those of OFTOs and incumbent TOs.

Category	TO incentive	OFTO incentive	Proposed baseline CATO incentive
Safety	Nothing additional to compliance with existing law.	Nothing additional to compliance with existing law.	Nothing additional to compliance with existing law.
Reliability	Energy not supplied (symmetric incentive with rewards/penalties for performance above/below target), up to 3% of annual base revenue at risk	Availability incentive – symmetric against a target, up to 10% of annual revenue at risk	Availability based financial incentive with penalties for poor performance and bonuses for outperformance.
Availability	Network Access Policy (an approach to managing outages and TOs/SO working together)	Availability incentive	Availability based incentive and obligation to develop a Network Access Policy (NAP).
Stakeholder satisfaction (ie users of their system)	• Satisfaction survey - +/- 1% of annual base revenue – TOs survey a selection of customers • Stakeholder engagement incentive - discretionary bonus of up to 0.5% of annual base revenue	No specific incentive	None proposed. We do not consider this would be applicable to all CATOs – they will not necessarily interact with a large number of stakeholders in the way that incumbent TOs do.
Connections	Financial penalty worth up to 0.5% of annual base revenue for failure to meet obligations under the licence/STC	No specific incentive	Financial penalty worth up to 0.5% of annual base revenue for failure to meet obligations under the licence/STC
Asset delivery	No specific positive financial incentive, potential to recover some revenue in event of late delivery	Not relevant under generator build as assets already constructed	'Payment on completion' – CATO revenue stream starts once construction is complete. No further incentives.

Category	TO incentive	OFTO incentive	Proposed baseline CATO incentive
Environmental	• SF6 incentive (minimise leakage) – incentive based on the non-traded carbon price for equivalent emissions • Losses incentive – reputational, TOs publish details • Business Carbon footprint – reputational, TOs publish details • Visual amenity - reputational, requirement to demonstrate commitment to mitigation and to report on progress, also visual amenity allowance (ie to underground existing overhead lines) under RIIO • Environmental discretionary reward (to encourage companies to integrate sustainability into businesses)	SF6 reporting requirement (no financial incentive)	• SF6 incentive (to minimise leakage) – financial incentive based on performance against a target leakage rate. • Reputational incentive around wider environmental performance – CATOs to report annually on transmission losses, business carbon footprint and work on visual amenity (where relevant, eg for new asset investment). Report to be published.
Additional wider works	Strategic Wider Works reopener	Reopener for adding incremental capacity during the revenue term	Reopener for new asset investment during the revenue term
Asset management	Network Output Measures (NOMs, metrics on asset criticality and health), potentially rewards of up to 2.5% of base revenue for meeting asset replacement targets	No specific incentive	Asset management incentive – periodic reporting on asset condition (eg similar to the asset evaluation element of NOMs) alongside a performance bond on asset condition at the end of the revenue term.

Appendix 6 – Asset depreciation

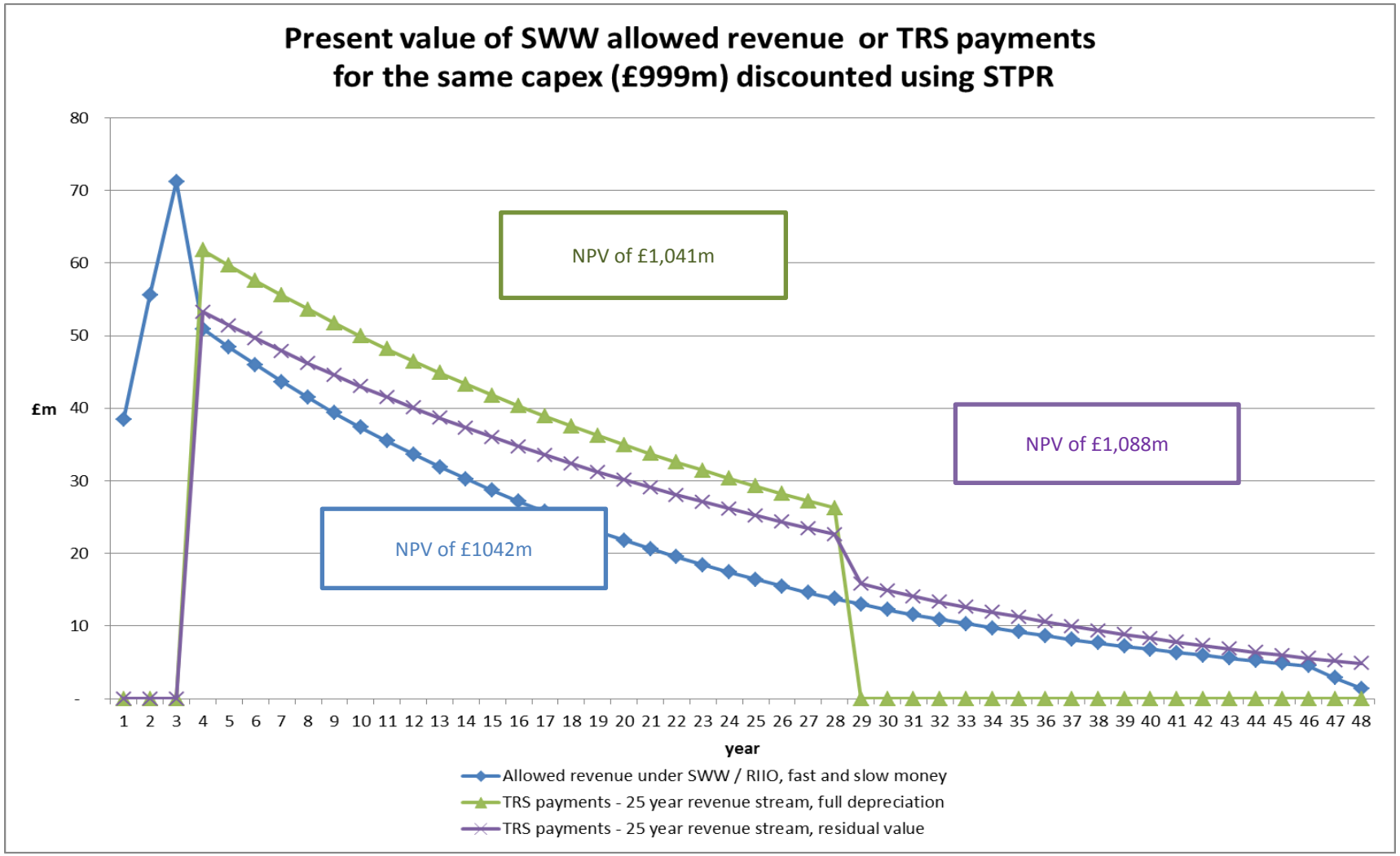
The diagram below shows the size and profile of consumer payments for an indicative £999m of capex under three scenarios:

- Blue line: Project delivered under the SWW mechanism within the RIIO price control. Straight line depreciation over 45 years.
- Green line: Project delivered by CATO with a 25 year TRS. Assets depreciated over 25 years.
- Purple line: Project delivered by CATO with a 25 year TRS, followed by a RIIO-style price control. Assets depreciated over 45 years.

For all of these scenarios we have assumed no benefits (either to capex or financing) through competition. These therefore only illustrate the relative consumer payments as a result of different financing models. All revenue streams are discounted using the Social Time Preference Rate (STPR)[24]. We have not assumed any operational or other costs for simplicity of modelling as the issue is about depreciation of capex, not other costs. We also assume a construction period of three years with CATO revenue starting on completion of construction and SWW capex being added to the asset base during the construction.

The overall cost to consumers at net present value (NPV) is comparable under the RIIO model and the CATO model where revenue term and depreciation period are aligned. Costs to consumers are higher for the model where the CATO depreciates the assets over a longer period.

[24] This is in line with HM Treasury's guidance on option appraisal: https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent


Present value of SWW allowed revenue or TRS payments for the same capex (£999m) discounted using STPR
80
70
60
50
40
30
20
10
-
£m
NPV of £1,041m
NPV of £1,088m
NPV of £1042m
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
year
Allowed revenue under SWW / RIIO, fast and slow money
TRS payments - 25 year revenue stream, full depreciation
TRS payments - 25 year revenue stream, residual value

Appendix 7 – Risk allocation matrix

We have developed a matrix which summarises our current thinking on the risks we expect CATOs to bear.

Tender process stage risks

Risk	Who bears the risk?		Comments
	CATO	**Consumers**	
Delay or cancellation to the tender process (eg though changes to project need or planning)		X	We expect the party responsible for preliminary works will undertake preliminary works in a way that minimises this risk.
Change in required design (ie driven by change in need)		X	We expect the party responsible for preliminary works will undertake preliminary works in a way that minimises this risk.
Inadequacy of tender specification to complete detailed design	X (and party responsible for preliminary works)		Expect CATO due diligence to identify any issues.
Movements in financial markets between ITT and financial close		X	
Movements in commodity prices between ITT and financial close	X	X	Expect bidders may be able to hedge against some price fluctuations (eg for a certain period of time).
Inadequacy of all preliminary works (including planning consent, outage plans etc.)	X (and party responsible for preliminary works)		Expect CATO due diligence to identify any issues during tender process, party that undertook preliminary works can then rectify.

CATO business risks – construction and operation

Risk	Who bears the risk?		Comments
	CATO	Consumers	
Access to the site/land/equipment etc.	X		CATO needs to ensure stakeholder/landowner engagement etc.
Interface with other network operators/users etc.	X (all parties)		Expect CATOs and all licensees to cooperate and CATO to actively manage relationships with interface parties.
Performance of contractors/sub-contractors	X		CATO responsible for managing all its contractors and personnel.
All health, safety and environmental risks	X		CATO must comply with relevant legislation.
Outage planning/windows	X (all parties)		CATO should agree appropriate windows with SO etc.
Price inflation (including metal prices etc.)	X		CATO should bid proportion of revenue stream to be indexed during tender.
Change in interest rates	X		Refinancing gain share only, CATO bears the risks of any refinancing that doesn't save money.
Changes in business rates		X	All TOs can pass this cost through.
Changes in taxation (eg capital allowances)	X		Unless there are mitigating circumstances (eg serious threats to financial stability).
Demand risk/change in project need		X	CATO will receive revenue even if demand/need changes. TO's do not take demand risk.

Construction risks

Risk	Who bears the risk?		Comments
	CATO	Consumers	
Ground conditions of the site	X (and preliminary works party)		Expect that high risks could be mitigated by more upfront preliminary work or surveys, CATO due diligence should pick this up and bidders would need to analyse relevant data.
Construction delays (including through weather etc.)	X		Potential licence protection or risk sharing for events having a material adverse impact
Agreed outage windows not sufficient for construction	X (and preliminary works party)		CATO due diligence should have identified any issues and factored outages into construction plans.
Construction cost overruns	X		Potential licence protection or risk sharing for events having a material adverse impact

Operations risks

Risk	Who bears the risk?		Comments
	CATO	Consumers	
Asset operations/ availability (ie technical risks)	X		CATO responsible for design, construction and operations, potentially limited licence protection or risk sharing around availability.
Additional capex during revenue term (eg refurbishment, replacement)	X		Potential licence protection or risk sharing for events having a material adverse impact; reopener 'new asset investment'.

Appendix 8 - Feedback Questionnaire

Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

Please send your comments to:

Andrew MacFaul
Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk