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Hinkley-Seabank – Consultation on Final Needs Case and potential delivery models

Consultation

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Contact: James Norman

Team: New Transmission Investment

Tel: 020 7901 7420

Email: NTIMailbox@ofgem.gov.uk

Overview:

This document sets out our views on the proposed Hinkley-Seabank project, for which National Grid Electricity Transmission submitted a Final Needs Case in March 2017. The project would allow a new nuclear power station in Somerset to connect to the main transmission network in GB.

We set out our initial views on two parallel assessments we are undertaking on Hinkley-Seabank. The first is our assessment of the Final Needs Case under our Strategic Wider Works framework, a mechanism we developed for the RIIO-T1 price control to manage large projects that were uncertain at the time of the price control settlement. The second is our assessment of the project for its suitability for competition, and consideration of potential delivery models, including a special purpose vehicle model and a model intended to provide a proxy for the benefits of competition.

Context

The 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 Scottish Hydro Electric 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.

The incumbent onshore TOs are currently regulated under the RIIO-T1 price control, which runs for eight 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 become more certain. 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 competition.

Following our decision on the RIIO-T1 price control, we 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 this project we decided, among other decisions, to increase the role of competition where it can bring value to consumers.

Following the ITPR project, we set up the Extending Competition in Transmission (ECIT) project in early 2015 to introduce additional competition in the delivery of new, separable and high value onshore electricity transmission investment. We have published a series of ECIT policy consultation and decision documents, which are available on our website. In December 2016 we published our first combined SWW and competition consultation for the North West Coast Connections project, and published an update to that consultation in July 2017.

In June 2017 we published an update on our plans to introduce competition to onshore electricity transmission, stating that we are deferring further development of the Competitively Appointed Transmission Owner (CATO) regime until the timing of enabling legislation is more certain. We reiterated that we continue to consider that there are significant benefits to consumers in introducing competition into the delivery of new, separable and high value onshore electricity transmission projects. We noted that we would set out our thinking around alternatives to the CATO regime as part of this consultation on Hinkley-Seabank.

Associated documents

North West Coast Connections – Open letter update, July 2017
https://www.ofgem.gov.uk/publications-and-updates/update-our-assessment-north-west-coast-connections-project

Update on Extending Competition in Transmission, June 2017
https://www.ofgem.gov.uk/system/files/docs/2017/06/update_on_extending_competition_in_transmission.pdf

North West Coast Connections – Consultation on the project's Initial Needs Case and suitability for tendering, December 2016
https://www.ofgem.gov.uk/publications-and-updates/north-west-coast-connections-consultation-project-s-initial-needs-case-and-suitability-tendering

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

Criteria for onshore transmission competitive tendering, May 2015
https://www.ofgem.gov.uk/publications-and-updates/criteria-onshore-transmission-competitive-tendering

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

Strategic Wider Works Guidance, October 2013
https://www.ofgem.gov.uk/publications-and-updates/guidance-strategic-wider-works-arrangements-electricity-transmission-price-control-riio-t1-0

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Executive Summary

In March 2017 we received a Final Needs Case submission from National Grid Electricity Transmission (NGET), for its proposed Hinkley-Seabank (HSB) project[1] – an £839m[2] electricity transmission project to connect the new Hinkley Point C nuclear power station in Somerset being constructed by EDF.

This consultation sets out our thoughts on three areas:

- The regulatory framework for HSB and other similar projects, and our initial thinking on possible arrangements for securing the benefits of competition for consumers now. This includes our initial thoughts on the suitability of the new, separable, and high value criteria, developed in the context of the CATO regime, in relation to alternative project delivery models.
- Our view on the needs case for HSB and the costs NGET is currently proposing for delivering HSB.
- Our initial view on HSB's suitability for delivery through the 'SPV model' and the 'Competition Proxy' model, which we consider could deliver consumer benefits relative to the 'status quo' Strategic Wider Works (SWW) delivery arrangements.

Arrangements for introducing the benefits of competition into the delivery of future onshore electricity transmission projects

We set out that, notwithstanding the delays to enabling legislation for our proposed Competitively Appointed Transmission Owner (CATO) regime, we continue to consider that there are benefits to consumers from introducing or replicating the outcomes of competition into the delivery of certain onshore electricity transmission projects**.** As such we confirm that we intend to continue to assess the suitability of SWW projects for competition as and when the incumbent Transmission Owner (TO) submits an Initial or Final Needs Case for our consideration.

We have undertaken an initial high level review of the 'new, separable and high value' criteria, developed in the context of a CATO competition, to consider whether these remain appropriate in relation to the potential delivery models we propose in this consultation. Our initial findings indicate that the criteria may be appropriate when considering whether to apply the SPV model, but that the 'separability' criterion, and potentially the 'new' criterion, may not be required for the Competition

[1] National Grid refer publically to the project as 'Hinkley Point C Connection': http://www.hinkleyconnection.co.uk/

[2] This figure consists of all Strategic Wider Works related construction and pre-construction spend to-date, as well as indicative cost estimates for future expenditure and estimated risk funding.

Proxy model. We intend to carry out a more comprehensive review of the appropriateness of the criteria for these models over the coming months.

Needs case for HSB

NGET has presented a clear economic and technical case to us that it is beneficial for GB consumers for the HSB project to progress. We consider that the majority of NGET's design choices have been economically justified. However, in our view, NGET has not fully justified the estimated additional £65m cost[3] of the new 'T-pylon' technology it intends to use on HSB. NGET has also not yet adequately justified its methodology for setting risk funding for extreme weather, nor the level of cost contingency included in the cost estimates for extreme weather risk (£116m).

NGET will have the chance to refine its analysis and strengthen its justification for these aspects of the project when we formally assess and consult on the costs of HSB next year. At that stage, if we are unconvinced that the additional costs proposed by NGET are adequately justified, we will disallow them when we set NGET's revenue for HSB.

We received consultancy support from TNEI Ltd on the assessment of the HSB Needs Case and have published its report alongside this consultation.

Assessment of potential delivery models for HSB

We have assessed HSB against our new, separable and high value criteria, as for our consultation on the North West Coast Connections project.[4] We consider that HSB meets the criteria, subject to the exclusion of assets representing 2% of the capital value of the project. We therefore consider that there is a strong case to consider competitive delivery models for HSB.

Consistent with the recently announced pause to our work on the CATO regime, we are not currently proposing that HSB should be delivered under our CATO framework. Given delays to the introduction of enabling legislation, there is a risk that we would not be able to appoint a CATO in time to deliver HSB to Hinkley Point C's contracted grid connection dates.[5] If the HSB connection dates change, we may review our position on the use of the CATO framework.

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[3] This figure represents NGET's current view of the cost difference between using T-Pylons instead of lattice towers, as well as the cost of developing T-Pylons that NGET have attributed to the HSB project.

[4] https://www.ofgem.gov.uk/publications-and-updates/north-west-coast-connections-consultation-project-s-initial-needs-case-and-suitability-tendering

[5] We have recently announced a pause to our work on the CATO regime: https://www.ofgem.gov.uk/system/files/docs/2017/06/update_on_extending_competition_in_transmission.pdf

We are considering two alternative competitive delivery models that could deliver a significant proportion of the benefits of a CATO tender. These are:

1. **The Special Purpose Vehicle (SPV) model** – NGET would run a competition for the construction, financing and operation of HSB through a project-specific SPV. The SPV would deliver HSB under the terms of a contractual arrangement with NGET, who would retain responsibility for and operational control of HSB. The SPV would finance, construct and operate HSB for a fixed period, potentially 25 years, in return for a defined revenue under its contract with NGET.

2. **The Competition Proxy model** – NGET would deliver HSB, but we would set NGET an allowed revenue in line with the outcome we consider would have resulted from an efficient competition for construction, financing and operation of the project. We would fix this revenue for an extended period, potentially 25 years. The revenue would be based on our determination of a weighted average cost of capital (WACC) for the duration of the revenue term and efficient costs for construction and operations. We would use appropriate benchmarks (e.g. from tenders that we run in the offshore transmission sector) and reviews to determine these costs.

Whilst delivery under the 'status quo' delivery model for HSB (ie. the existing RIIO SWW arrangements) remains a viable option and therefore under consideration, we consider that both alternative delivery models above may offer more favourable outcomes for consumers, and are likely to be deliverable in line with the required connection date for Hinkley Point C. We expect the key benefits of these models are derived from a combination of: downward pressure on capital and operational expenditure; financing savings from leveraging the low long-term cost of debt and equity currently available in the financial markets; and a level of gearing (relative proportions of debt and equity) closer to that typically seen in efficient project-financed projects of similar risk profile.

Next steps

We will conclude our assessment of the Final Needs Case for HSB with a decision in December 2017. If these initial findings do not change through the consultation process, our decision will confirm that NGET will be funded for the efficient delivery of HSB under the terms of the delivery model we ultimately select. This funding will not include any areas of cost that we do not consider efficient or appropriate to fund following our Project Assessment.

Alongside this decision on the Needs Case, we intend to consult on the delivery approach we are minded to apply to HSB, and how we propose to determine the allowed revenue for HSB. We also intend to consider whether the SPV or Competition Proxy delivery models could help to ensure value for consumers for any future SWW projects that come forward for construction under RIIO-T1.

We are considering the appropriateness of the new, separable and high value criteria, which were developed in the context of the CATO regime. Subject to further consultation and policy development, we may decide to formalise the criteria in an appropriate form and consult on any necessary changes to transmission licences.

In early 2018, we expect to publish further details on approaches for introducing the benefits of competition for projects that come forward for construction during RIIO-T2.

We welcome your responses to this consultation, both generally, and in particular on the specific questions in Chapters 1, 2, and 3. Please send your response to: NTIMailbox@ofgem.gov.uk. The deadline for response is 11 October 2017.

1. Regulatory framework for Hinkley-Seabank and other similar projects

Chapter Summary

This chapter sets out the regulatory framework we use for assessing Hinkley-Seabank and other similar projects. It covers our process for determining whether the project is needed, and our approach to assessing potential delivery models, including the use of competition. It includes our view on the future of competition in onshore transmission, and our initial consideration of the suitability of the new, separable and high value criteria going forwards.

Question box

Question 1: Do you agree with our initial views on the appropriateness of the new, separable and high value criteria for the SPV and Competition Proxy models?

Question 2: Do you think the criteria for identifying projects suitable for delivery through models intended to secure the benefits of competition should be the same, irrespective of which delivery model is used?

Introduction

1.1. This chapter describes how we assessed HSB under the existing arrangements under the current price control and our approach to assessing potential delivery models for HSB, including the use of competition. We also update our general proposals to introduce competition into the delivery of onshore electricity transmission.

Regulatory framework and our role

1.2. As an economic regulator, part of our role is to ensure that the revenues of natural monopolies, such as onshore and offshore transmission owners (TOs and OFTOs) are set to allow them to deliver their various obligations efficiently.

1.3. TO revenues are traditionally set through price controls. Price controls set the amount of money that a TO can recover from consumers for the delivery of its required outputs and other obligations. The current price control, RIIO-T1, is the framework that sets the TO's revenue for the period covering 1 April 2013 – 31 March 2021.

1.4. As part of RIIO-T1 in 2013 we created the 'Strategic Wider Works' mechanism (SWW). This funding mechanism allows TOs to deliver additional large electricity transmission projects not accounted for in the original RIIO-T1

settlement due to uncertainties with need, timing, design and overall cost of these projects at the time RIIO-T1 was set. There is more detail on how costs, including the costs of SWW projects, are treated under RIIO-T1 in Appendix 2.

1.5. We can also use competition where appropriate to deliver better outcomes for consumers. We do this in offshore electricity transmission through the Offshore Transmission Owner (OFTO) regime.[6] Through the Extending Competition in Transmission (ECIT) project we have been seeking to introduce competition into the delivery of onshore electricity transmission.

1.6. There are more details on competition in onshore electricity transmission later in this chapter. We describe below our existing SWW mechanism.

Strategic Wider Works

1.7. Our SWW assessment process is normally made up of three main stages:

1. **Initial Needs Case** – Our opportunity to identify, at an early stage, any concerns we have with how the TO has selected the option it intends to seek planning approval for.

2. **Final Needs Case** – Our process for taking a final decision on whether there is a confirmed need for the transmission project. This process is informed by a robust review of the TO's cost-benefit analysis (CBA) for the project. This stage takes place once it is more certain that any generation driving the transmission project will go ahead.

3. **Project Assessment** – Our assessment of the detailed cost estimates and delivery plan in order to set allowed expenditure and required deliverables for the transmission project. This stage sets cost allowances for the relevant project, with the prevailing RIIO cost of capital applied to set the revenue allowances that are ultimately passed on to consumers.

1.8. HSB did not have an Initial Needs Case assessment as the project had already been substantially developed by the time we introduced the Initial Needs Case stage into the SWW process.[7] In Chapter 2 we consult on our initial findings from the Final Needs Case stage for HSB. In 2018 we intend to conduct a Project Assessment for HSB, though exactly what this will cover will be determined, in part, by which delivery model is used.

[6] To-date, we have appointed 16 OFTOs.
[7] The Initial Needs Case is not currently reflected in the existing SWW guidance document, but TOs have been working to this process ahead of its being set out in guidance.

Interactions with the planning regime

1.9. We do not design new transmission projects, plan how they should be built, or decide what routes they should take. This is the responsibility of the developing TO and the relevant planning authorities. For this reason, we do not look at the detailed location of individual lines and pylons nor take a view on what additional visual mitigation measures might be required. Our role is to review the TO's justifications for such decisions where these affect the cost of the project to consumers.

Consultancy support

1.10. We appointed TNEI Services Ltd[8] to provide independent analysis and expertise to support our assessment process in relation to the Final Needs Case. The final report provided by TNEI is published alongside this document. This public version is redacted to account for commercial considerations associated with NGET's ongoing delivery programme for HSB.

Introducing competition into the delivery of onshore electricity transmission

1.11. The OFTO regime has led to significant savings for consumers in the delivery of offshore transmission since we introduced it in 2009.[9] These savings relate to the cost of both financing (debt and equity) and operations and maintenance, over a 20 year revenue period. We also recently required Scottish and Southern Electricity Networks (SSEN) to run a competition to deliver a new energy solution for Shetland,[10] leading to significant savings against the original counterfactual solution.

1.12. Competition is used successfully in other regulated sectors to derive benefits for consumers. The Thames Tideway project in the water sector was recently subject to competition, leading to a low cost of capital from the winning bid.[11] Ofwat has since consulted on plans to introduce 'direct procurement' into

[8] Referred to as 'TNEI' for the purposes of this document.
[9] https://www.ofgem.gov.uk/sites/default/files/docs/2014/05/140508_covering_letter_to_cepa_report_final_for_publication.pdf. (Tender Round 1 savings are estimated to be between £200-400m TR2 and TR3 savings are estimated to be between £680-1,100m) (https://www.ofgem.gov.uk/system/files/docs/2016/03/ofgem_tr2_tr3_evaluation_final_report.pdf).
[10] https://www.ofgem.gov.uk/system/files/docs/2017/07/shetland_new_energy_solution_-_consultation_document.pdf
[11] http://www.ofwat.gov.uk/pn-0215-ofwat-awards-licence-thames-tideway-tunnel/

the delivery of all discrete, high value projects in the water sector during the next price control period.[12]

1.13. We set out at RIIO-T1 final proposals that projects brought forward by TOs under the SWW framework could be subject to a competitive process.[13] In 2015 we decided to extend the use of competition to delivery of onshore electricity transmission assets that are new, separable and high value. Since then, we have been developing the CATO framework and have published a series of policy consultations and decisions, which are available on our website.[14]

1.14. We have been working with Government to introduce legislation to enable implementation of the CATO regime, and specifically to allow us to award a transmission (CATO) licence following a competition for onshore electricity transmission assets. We recently published an update on this work,[15] in which we noted that an opportunity to introduce the required legislation looks unlikely in the immediate future and that we have paused our work on the CATO regime. We remain committed to working with Government to seek an appropriate opportunity to introduce the legislative change necessary to implement the CATO regime. We may, once the timing of the enabling legislation is clearer, take forward further development of the regime (and the next iteration of CATO policy/documentation). We will also revisit the wider role of competition within RIIO as part of the RIIO-2 development work.

Securing benefits from competition for consumers now

1.15. Notwithstanding the delays to CATO enabling legislation, we still consider that there are benefits to consumers from introducing competition into the delivery of certain onshore electricity transmission projects, and that this is in line with Government's objective to increase the role of competition where this delivers benefits for GB consumers.

1.16. As such, we intend to continue to assess the suitability of SWW projects for competition as and when the incumbent TO submits an Initial or Final Needs Case for our consideration.

1.17. This consultation seeks views in Chapter 3 on our assessment of HSB against the criteria for competition. We also set out in Chapter 3 two potential

[12] http://www.ofwat.gov.uk/consultation/delivering-water2020-consulting-on-our-methodology-for-the-2019-price-review/
[13]NGET:https://www.ofgem.gov.uk/sites/default/files/docs/2012/12/1_riiot1_fp_overview_dec12_0.pdf,
SHE-T and SPT: https://www.ofgem.gov.uk/sites/default/files/docs/2012/04/sptshetlfp_0.pdf
[14] https://www.ofgem.gov.uk/electricity/transmission-networks/competition-onshore-transmission
[15] https://www.ofgem.gov.uk/publications-and-updates/update-extending-competition-transmission

alternative delivery models (the SPV model and the Competition Proxy model), that could deliver a significant proportion of the benefits of a CATO tender but would not require the award of a separate electricity transmission licence. This consultation seeks views on applying those delivery models to HSB, instead of following the status quo SWW approach.

Identifying projects for competition

Criteria for identifying projects for competition

1.18. One of the conclusions from our Integrated Transmission Planning and Regulation (ITPR) project[16] in 2015 was that it is in consumers' interests to extend the use of competition to onshore transmission assets that are new, separable and high value. Our view was that tendering onshore assets that are new, separable and high value means that benefits from tendering such as cost savings and innovation will outweigh the potential administrative and interface costs of competition. We reiterated this view through the ECIT project and published draft definitions of 'new', 'separable' and 'high value' in November 2016.[17] We also published impact assessments supporting our view on the benefits of competition for new, separable and high value onshore electricity transmission assets.

1.19. Those criteria were developed in the context of running a competition to appoint a CATO licensee. The criteria are designed to consider:

- the risk of a CATO taking over assets that have been operational for some time (relates to the 'new' criterion)
- the costs and risks of managing interfaces between a CATO and other parties (relates to the 'separability' criterion)
- the costs of administering a tender (relates to the 'high value' criterion)

1.20. We consider it important to review the criteria to consider whether they remain appropriate in the context of the two alternative delivery models described in Chapter 3. We have undertaken an initial review of the criteria and CATO policy objectives against the SPV model and Competition Proxy model, and this review is in Appendix 3. Our initial findings indicate that the criteria may be appropriate when considering whether to apply the SPV model, but that the 'separability' criterion and potentially the 'new' criterion, may not be required for the Competition Proxy model. This is because under this model there would be no new third party delivering the assets, meaning that there should be limited interface issues with the incumbent asset owner. We will carry out a more comprehensive

16 https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/itpr_final_conclusions_decision_statement_publication_final.pdf

17 https://www.ofgem.gov.uk/system/files/docs/2016/11/ecit_november_2016_decision.pdf

review of the criteria against the SPV and Competition Proxy models over the coming months, including considering responses to this consultation.

1.21. Subject to the outcome of our review and further policy development, we may look to formalise the criteria in an appropriate alternative form.

1.22. In the interim, in Chapter 3 we consider it appropriate to assess the suitability of HSB for competition against the new, separable and high value criteria. We will revisit that assessment in line with any revisions we make to the criteria before confirming our decision on the delivery model for HSB.

Network Options Assessment (NOA)

1.23. The Network Option Assessment (NOA) is the annual assessment carried out by the SO to make recommendations on which significant electricity transmission investments should be progressed in the upcoming year. We have previously set out that this assessment and annual report will be the principal route for the early identification of projects which meet the criteria for competition. We expect a continued role for the NOA in identifying projects suitable for delivery through models intended to secure the benefits of competition. We will work with the SO on any changes to the NOA methodology and potentially on changes to the NOA licence condition C27. We do not expect changes to the SO's approach for the development of the 2018 NOA report.

2. SWW Final Needs Case assessment

Chapter Summary

This chapter sets out the key design decisions NGET has made to date on HSB, and our views on its approach. It also explains our initial findings and next steps.

Question box

Question 3: Do you agree that there is a technical need for the HHSB project and that the proposed connection is compliant with SQSS requirements? If not, please give evidence.

Question 4: Do you agree with our initial conclusions?

Question 5: Are there any additional factors that we should consider as part of our SWW Final Needs Case assessment?

Introduction

2.1. NGET submitted its Final Needs Case for HSB in March 2017. HSB is NGET's proposed technical solution for connecting EDF's Hinkley Point C (HPC) nuclear power station in Somerset. NGET is contracted to connect the first HPC reactor by late 2024 ahead of EDF beginning commercial operation in 2025.[18]

2.2. At this stage of our assessment, our review of NGET's proposals has focused on how it has narrowed down its proposed design, how it has derived its initial cost estimates and how it proposes to price in project risks.

[18] NGET is contracted to connect the second reactor by late 2025.

Figure 1: Indicative representation of NGET's preferred option

Source: National Grid

NGET's proposed design and technical configuration for HSB

2.3. The HPC site is adjacent to the existing Hinkley Point B nuclear power station, which is connected via two 400kV double circuits. NGET's proposed connection will reinforce the local network to accommodate HPC through an upgrade and reconfiguration of some of the existing lines out of Hinkley Point and replacement of an existing 132kV double circuit between Bridgwater and Seabank

with a new 400kV double circuit.[19] NGET considers that without this reinforcement, the transmission system local to Hinkley Point would not be compliant with the National Electricity Transmission System Security and Quality of Supply Standards (NETS SQSS) after HPC has commissioned.

Our view

2.4. We agree that HPC connecting to the transmission system creates a need for investment in transmission infrastructure in the South West and that connecting HPC using an additional 400kV double circuit resolves the technical issues referenced in 2.3.

How NGET reached its favoured design solution

2.5. NGET's approved Development Consent Order (DCO) application proposed the use of a new pylon design along the majority of the route in order to mitigate HSB's visual impact on the local landscape. The new pylon design is referred to as a 'T-pylon' due to its shape. A visual comparison to a regular lattice pylon is included in Appendix 6.

2.6. NGET discounted alternatives to its proposed connection option that it considered unlikely to be granted planning permission, or if they delivered an equivalent or lower technical output at a higher cost. These discounted options included, for example, an option which would use subsea cables running along the Bristol channel to connect HPC to Seabank substation, and an option which would involve the construction of a new 400kV double circuit running broadly alongside the existing Bridgwater – Melksham line.

2.7. NGET's Final Needs Case submission included a cost-benefit analysis (CBA) to justify its decision that, of all the options it had considered, the HSB option it submitted for planning approval represents best value for consumers. This CBA was run by NGET's System Operator (SO) function with input from its Transmission Owner (TO) function. It compares the TO estimated cost and capacity delivered by each connection option against future constraint costs and the range of future capacity requirements identified through the SO's four Future Energy Scenarios (FES).[20] NGET also looked at the likely future impact of localised generation increases on the lower voltage distribution network to sense check the sensitivity of the result of its CBA.

2.8. NGET's proposed design for HSB performs best in its CBA. This is because it provides an overall increase in network capability, at a lower cost than the

[19] Appendix 4 contains a schematic showing the changes to the network caused by HSB
[20] The FES 2017 can be accessed at the following link: http://fes.nationalgrid.com/media/1253/final-fes-2017-updated-interactive-pdf-44-amended.pdf

alternative options that NGET considers are likely to have gained planning consent.

2.9. Most of the alternative options considered by NGET would involve some redirection of power to other areas of the network alongside additional network capacity to connect HPC. The CBA results reflect that the redistribution of power provided by most of the alternative options are less effective than the preferred option as they create knock-on effects on the available capacity elsewhere on the network. In practice this further increases the gap between NGET's proposed design, which supplies the required capacity without creating constraints elsewhere, (and is cheaper), and the alternative options considered. Table 1 shows the costs and relative CBA rankings of the options assessed by NGET through the CBA.

Table 1: Costs and CBA performance of connection options

Connection option	Description	P50 cost of HSB connection	CBA gap to favoured option	Performance in NGET's CBA
Hinkley - Seabank: T-Pylons	New overhead line Bridgwater - Seabank using mainly T-Pylons (and 8km of underground cable)	£777m[21]	£0	**1st-** Best performing 'consentable' option due to low capital cost combined with increased boundary transfer capability
Network enhancement	No new transmission build. Enhance existing transmission infrastructure in the local area	£781m	£1,299m	**2nd-** Boundary transfer capability is only marginally increased resulting in constraint costs not seen on other options
HVDC Link	Subsea HVDC link between HPC and Seabank substation	£1,202m	£4,073m	**3rd-** High capital cost and inferior boundary transfer capability

[21] This figure is lower than the £839m cited earlier because it does not include certain pre-construction works separately funded within RIIO which NGET will not receive additional funding for.

Our view

2.10. We have reviewed the underlying cost estimates of the options compared and NGET's CBA methodology. We have also reviewed the generation assumptions used within the FES for this project.

2.11. We are comfortable that NGET has followed an appropriate CBA methodology and process. We therefore agree there is an economic and technical need for the HSB project to progress and that NGET has selected an appropriate routeing option.

2.12. NGET did not include an option that uses regular lattice pylons rather than T-pylons to deliver the same technical output as its favoured design. This is because it believed it would represent a greater risk of not gaining planning consent and would not be in line with its wider duties in respect of HSB. However, upon request, NGET provided us with a cost estimate for this hypothetical option, and we compared this option to its favoured option to see how it would have ranked within the CBA (see Table 2). We are otherwise comfortable that NGET has considered all feasible options.

Table 2: Cost impact of using T-pylons instead of lattice towers

Connection option	Description	P50 cost of HSB connection	CBA gap to favoured option
Hinkley - Seabank: T-Pylons	New overhead line Bridgwater - Seabank using mainly T-Pylons (and 8km undergrounding)	£777m	£0
Hinkley - Seabank: Lattice towers only	New overhead line Bridgwater - Seabank using only lattice towers (and 8km undergrounding)	£712m	- £65m. This option delivers same capacity benefits at lower cost

2.13. We consider the additional costs of using T-pylons in the next section.

Mitigation of HSB's impact on the local landscape

2.14. Nationally Significant Infrastructure Projects such as HSB require the developing TO to engage with stakeholders and demonstrate to the Planning Inspectorate how it has balanced its various obligations in order to secure a DCO. Following the Planning Inspectorate's review, the decision whether to approve a DCO is ultimately taken by the Secretary of State. A DCO for HSB was granted in January 2016.

2.15. NGET's proposed route for HSB crosses the Mendip Hills Area of Outstanding Natural Beauty (AONB). The best way to mitigate the project's visual impact in and around the Mendip Hills was therefore a key consideration for NGET in developing its DCO for the project.

2.16. We do not have a formal role in the planning process, nor do we have legal powers to determine appropriate levels of mitigation. Our role is to ensure that NGET has made decisions that represent efficient investments for current and future consumers. In this context, we have reviewed the mitigation proposals that NGET has developed for HSB to ensure that consumers are only funding the additional efficient costs of mitigation work that are justified, and that could not have been avoided through the selection of an alternative option.

2.17. If we ultimately conclude that NGET's mitigation decisions unjustifiably increased costs to consumers, we can limit the relevant TO's funding to what we believe is an efficient level of mitigation. Notwithstanding this, we would expect the project to be delivered under the consent terms of the granted DCO.

Undergrounding of the section through the Mendip Hills

2.18. As a result of its engagement with stakeholders and the Planning Inspectorate during the development of HSB, NGET determined that in order to gain planning consent it would be necessary to underground the electricity cables for the full 8.2km of the route which passes through the Mendip Hills AONB.

2.19. NGET estimates that this adds roughly £65m-£75m more to the cost of the project than if the route used only overhead electricity lines.

2.20. NGET's Final Needs Case submission contained evidence to justify why this undergrounding was required. This evidence was in the form of stakeholder feedback, a consumer willingness to pay study and further information outlining the protection afforded to AONBs.

Our view

2.21. We consider that NGET's undergrounding proposals for HSB are reasonable based on:

- the supportive stakeholder feedback NGET has shown us
- the willingness to pay study suggests consumers appear willing to fund undergrounding in AONBs
- the likelihood that the project would not have been granted planning consent if the section of the route through the Mendip Hills was not undergrounded.

Additional cost of using T-pylons

2.22. NGET's Final Needs Case submission included a high-level cost estimate of its favoured route using regular lattice pylons instead of T-pylons. Comparing this estimate to the forecast cost of its consented design indicates that, in NGET's view, the additional cost of using T-pylons is roughly £65m. This includes £17m in T-pylon development costs that NGET has attributed to the HSB project. The additional £48m is largely driven by the additional steel and larger foundations required to construct T-pylons.

2.23. While we were assessing its submission we asked NGET to complete additional work to highlight the differences in cost between its favoured option and the hypothetical lattice tower alternative. NGET was not able to provide this information on time, which limits how much feedback we are able to provide on costs at this stage. We will do a detailed review of costs at the Project Assessment stage to ensure our findings include a robust estimate of the additional cost of using T-pylons on HSB. We will require NGET to promptly provide an updated view of the additional cost of T-pylons and the underlying assumptions behind it as part of that assessment.

2.24. NGET believes the current estimated £65m cost difference is justified because T-pylons are more visually appealing than lattice towers. It has provided justification which it considers confirms that the use of T-pylons significantly reduced the risk that its DCO would not have been granted relative to an option that used only lattice towers.

2.25. NGET also commissioned a study on whether consumers would be willing to pay for the perceived visual benefits delivered by T-pylons. This willingness to pay (WTP) study shows a consumer willingness to pay for the visual benefit provided by T-pylons of between £12m and £39m. This range was determined by a consultancy working for NGET which built on two related studies that had previously been carried out for other transmission projects.

2.26. The first study considered how consumers valued various mitigation measures in specific designated land in Scotland. The other study considered how, in general, consumers value T-pylons as a form of visual mitigation compared to other available mitigation measures. The outputs from these studies were combined and adjusted to account for variations between the relevant landscape characteristics around HSB compared to the original study in Scotland.

2.27. It is difficult to objectively compare the landscape in one location to another. For this reason the consultants used a range of figures to reflect different ways in which the value consumers attached to the location in Scotland could be attached to the HSB location.

Our view

2.28. We do not consider that NGET's justification provides robust evidence to demonstrate that it was necessary to use T-pylons instead of regular lattice pylons. NGET set out that not using T-pylons would have increased the risk of planning consent not being granted, without providing robust evidence that this risk would have come to pass.

2.29. NGET's WTP analysis suggests that consumers are not willing to fund all of the currently estimated £65m cost difference between T-pylons and lattice towers. At present there is a significant gap between NGET's estimate of what consumers would be willing to pay for T-pylons and the estimated actual costs of T-pylons.

2.30. We also consider that NGET's WTP analysis relies too heavily on previous analysis carried out on different locations that are not fully comparable to HSB. In particular, we are not currently convinced that the upper range value (£39m) of the visual benefit provided by T-Pylons is robust and justified.

2.31. We expect NGET to consider our views on the additional costs of T-pylons before making its submission at the Project Assessment stage. This could for example include carrying out a more HSB-specific WTP study. Section 3.3 of TNEI's report, published alongside this consultation, provides information on how an HSB-specific WTP study could be developed effectively. If we continue to have concerns on any of these areas at the Project Assessment stage, we may disallow unjustified or inefficient costs when we set NGET's revenue for HSB.

Risk funding

2.32. Approximately 20 per cent of NGET's cost estimate for delivering HSB relates to contingency funding for risks it considers may occur during construction. This is split into:

- Extreme weather risk funding
- Other construction risk funding

2.33. The area along parts of the HSB route experienced severe flooding and heavy rainfall during 2012 and 2014. NGET has therefore proposed that HSB will be affected by flooding and heavy rainfall on a number of occasions during construction, causing a significant and costly delay to the HSB construction programme.

2.34. NGET has estimated the number of construction days likely to be lost to flooding and heavy rainfall during each of the extreme weather events it considers may occur. For each event it has multiplied the number of days lost by the average expected daily cost impact of each extreme weather event.

2.35. NGET has carried out probabilistic modelling to determine the level of other (ie non-weather related) construction risk contingency funding it has proposed for HSB.

Our view

2.36. Although we agree that extreme weather presents a risk to delivery of HSB and could lead to significant cost increases, it is impossible to be certain of the level of extreme weather that will affect the project. We do not agree that the funding for HSB should assume that extreme weather will definitely occur to such a large extent. We consider that this sort of contingency funding should more accurately reflect the probability of the risk materialising as well as the potential overall cost impact. We have initiated discussions with NGET on alternative approaches to dealing with this sort of high-impact, but low-probability risk. We expect to continue discussions with NGET on this issue ahead of its Project Assessment submission.

2.37. We are generally comfortable with the risk methodology NGET has used to propose other (ie non-weather related) construction risk funding. A high-level review of the uplifts applied to its proposal suggests that they are reasonable. In line with our guidance, NGET has used P50 risk estimates to determine the costs it proposes to cover these risks.

2.38. We consider that NGET should have done more analysis related to the risk associated with using T-pylons for HSB rather than regular lattice pylons. More analysis in this area would improve understanding of the full additional costs of using T-pylons.

2.39. We expect NGET to consider our views on these areas before making its submission at the Project Assessment stage. We will carry out a more detailed review of risk funding at that stage to consider how any changes to the delivery model for HSB affect the appropriate way to fund construction risk.

Other considerations

T-pylon development costs

2.40. In its cost estimate for HSB NGET has included £17m of costs related to the development of T-pylons. In our view, a large portion of this appears to relate to generic design work that was not undertaken specifically to develop T-pylons for use on HSB.

2.41. We do not consider that generic development work on a pylon design that may be used elsewhere in GB should be directly funded through the HSB project. We do not therefore currently consider that these costs should be funded through the final cost allowance for HSB.

2.42. At the Project Assessment stage, as part of our further consideration of NGET's justification for the use of T-pylons on this project, we will also conclude on whether any of the T-pylon development costs should be funded through the HSB project.

DNO costs

2.43. The majority of the HSB route involves removal of the local 132kV distribution network owned and operated by Western Power Distribution (WPD). As such, NGET has incorporated estimates for work that WPD expects to undertake into the costs of the connection options considered. As these WPD works are driven by the HPC transmission connection and were not factored into its RIIO-ED1 settlement, they will be funded via NGET's allowance for HSB.

2.44. NGET has indicated that it expects to engage further with WPD in the lead up to the Project Assessment stage to more accurately estimate these costs. We intend to carry out a detailed review of the costs of work on the DNO network for HSB as part of our Project Assessment. Where appropriate we will also take into account the final commercial agreement in place between NGET and WPD as part of our assessment of efficient costs. This agreement is likely to cover both the delivery of these works and any wider risk mitigation arrangements.

3. Assessment of suitability for competition and potential delivery models

Chapter Summary

This chapter includes our initial findings from an assessment of HSB against the criteria for competition and concludes that most of the project meets the criteria. We consider various potential delivery models for HSB, including the status quo, running a CATO tender, and two alternatives: the SPV model and the Competition Proxy model. We express a preference for the SPV and Competition Proxy models.

Question box

Question 6: Do you agree with our assessment of HSB against the criteria for competition, including our view on potentially re-packaging the project so that it meets all the criteria?

Question 7: Do you agree that the SPV model or Competition Proxy model would deliver a more favourable outcome for consumers relative to the existing status quo SWW delivery arrangements under RIIO?

Question 8: What are your thoughts on the SPV model, including:
(a) The structure of the model and length of revenue term?
(b) Should construction funding start during construction, or once it has completed?
(c) The contractual and regulatory arrangements?
(d) The identified benefits?
(e) Any potential downsides or implementation risks?
(f) Any other considerations?

Question 9: What are your thoughts on the Competition Proxy model, including:
(a) The structure of the model and length of revenue term?
(b) Should construction funding start during construction, or once it has completed?
(c) How we identify comparable benchmarks?
(d) The identified benefits?
(e) Any potential downsides or implementation risks?
(f) Any other considerations?

Assessment of the suitability of HSB for competition

Overview of the criteria

3.1. In Chapter 2 of our November 2016 policy decision document on ECIT, we set out the draft criteria against which we would assess the suitability of projects for competition. The draft criteria are:

- **New** – a completely new transmission asset or a complete replacement of an existing transmission asset.
- **Separable** – the boundaries of ownership between the competed assets and other (existing) assets can be clearly delineated.
- **High value** – a fixed threshold set at £100m of expected capital expenditure of a project at the point of our initial assessment of whether to tender it.

3.2. For projects submitted to us in RIIO-T1 (ie projects 'in flight' at the time we developed the competitive regime), we set out that we would also consider other factors such as deliverability, transferability, and any project-specific considerations that affect the overall consumer benefits case.

Criteria assessment

3.3. A schematic diagram showing our assessment of HSB against the new and separable criteria is in Appendix 5. We summarise our initial findings on the new, separable and high value criteria below. We examine deliverability, transferability and any other project-specific considerations later in the chapter, when we look at the impact of the potential delivery models. As discussed in 1.20, this criteria assessment is subject to our review of the appropriateness of the criteria given they were developed in the context of the CATO framework.

New

3.4. Our view is that most of the HSB route, as currently proposed by NGET, meets the new criterion. However, the short overhead line section that is to be upgraded to 400kV in the southern part of HSB reuses an existing pylon line. This would not be classed as a completely new transmission asset, nor a complete replacement. This section represents approximately 2% of the capital value of the project. If this short section were excluded, the remaining HSB works would meet this criterion. We consider this later under 'Re-packaging'.

Separable

3.5. Our view is that HSB, as currently proposed by NGET, meets the separable criterion. We consider that most project interfaces are clearly separable points (for example, substations), and therefore clearly manageable under existing industry arrangements. Some interface points are part way along existing overhead lines, and we have considered whether these points are appropriately separable. We have indicated these points with yellow circles on the diagram in Appendix 5. Our previous policy decisions on the draft criteria have set out that we do not consider it necessary for a project to have electrical separability where interfacing with

existing assets. We consider that the interfaces at these points can be managed in line with normal industry arrangements.

High Value

3.6. Our view is that HSB, as currently proposed by NGET, meets the high value criterion. As shown in Table 1 in Chapter 2, the expected cost of HSB is around £777m, which is significantly above the £100m capex threshold.

Re-packaging

3.7. We set out in our November 2016 document that we could use packaging of assets to ensure that projects are scoped in such a way to secure the best outcomes for consumers and an efficient tender process. We set out that our three considerations for potential packaging of projects are bundling, splitting, and re-packaging.[22] We have applied these considerations to HSB, and propose that bundling and splitting are not relevant but that re-packaging should be considered.

3.8. We identified in paragraph 3.4 that one small section of HSB, as currently proposed, is not *new*. This section is around just 2% of the capital cost of the project. We consider that excluding that section from the scope of works subject to competition would result in a re-packaged HSB project that is wholly new, separable, and is above the high value threshold. On the schematic diagram in Appendix 5, the re-packaged HSB project is represented by the sections marked in green.

3.9. We propose that the re-packaged HSB project marked in green in Appendix 5 is suitable for competition using the criteria as described in our November 2016 decision document. This re-packaged HSB project continues to include all relevant DNO works. When we refer to potential models for introducing competition into the delivery of HSB in the rest of this chapter, we therefore refer to that re-packaged HSB project.

3.10. The excluded section would not in isolation meet the SWW cost threshold. We set out in November 2016 that where this is the case, it could be funded either through an appropriate regulatory framework in RIIO-T1, or as part of RIIO-T2.[23] We will consider this in the round as part of our minded-to consultation on the needs case and delivery model for HSB in late 2017.

[22] Further details are available on page 22 of the November 2016 decision document.
[23] Page 24 of the November 2016 decision document.

Potential models for introducing competition into the delivery of HSB

3.11. We consider below the most appropriate models for introducing the benefits of competition into the delivery of the re-packaged HSB project. We compare these against the current SWW status quo delivery model, where NGET would deliver HSB under the RIIO arrangements.

3.12. As set out in Chapter 1, the Government has recently confirmed that legislation enabling the creation for a full CATO regime will not be taken forward in the upcoming parliamentary session. We therefore consider that legislation may not be in place to allow us to run a CATO tender until mid-2020, at the earliest. This would mean the earliest point at which a CATO may be able to start construction of HSB would be late 2021 – over two years later than NGET's current proposed dates. As such, we do not propose to use our CATO framework to deliver HSB unless significant delays are announced to HSB's delivery timetable before we make our decision on the delivery model.

3.13. While delivery under the status quo SWW arrangements remains a viable option, we consider in this consultation two alternative models for introducing the benefits of competition into the delivery of HSB. We consider that these models can deliver a significant proportion of the competitively-derived benefits of the CATO regime without risking a delay to the contracted connection date for HSB. We explain from paragraph 3.36 why we consider that both these models could deliver a better outcome to consumers than the SWW status quo approach under RIIO.

SPV model

3.14. The SPV model requires the creation of an HSB-specific special purpose vehicle (SPV) to finance, construct and operate the HSB assets. The SPV would deliver HSB under the terms of a contractual arrangement with NGET. The contract between NGET and the SPV would ensure that NGET retained the regulatory responsibility for delivering HSB and operational control of the transmission assets. Further details of this model are set out in Appendix 1.

3.15. NGET (or another party proposed by NGET that Ofgem agrees to) would run a competitive tender process to determine the SPV. The competitive tender would be designed with Ofgem input and run with Ofgem oversight. This tender would initially specify and ultimately determine the terms of the contractual arrangements between the SPV and NGET. The SPV competition would determine an annual revenue stream (reflecting the underlying construction and operating costs, risk allocation and the bid WACC), which would be paid to the SPV by NGET on behalf of consumers. NGET would recover these costs from consumers through its licence. The WACC for the project would therefore be set by the SPV competition rather than applying the WACC applicable under RIIO (as under the SWW status quo).

3.16. Our initial view is that the SPV would finance, construct, and operate HSB under a delivery agreement with NGET for a 25 year revenue term. As set out in our previous work on CATO, we consider that this period is likely to deliver the best value for consumers within the debt and equity markets.[24] Our initial view is that the capital invested in HSB assets would be fully recuperated over this period, ie the equivalent of the "regulatory asset value" would be zero at the end of the revenue term. We invite your views on the revenue term and will give this further thought ahead of our cost-benefit assessment. In order to mirror other competitive sectors, there may be benefits in allowing recovery to only start once construction is complete, but we welcome views from respondents on this point.

Deliverability

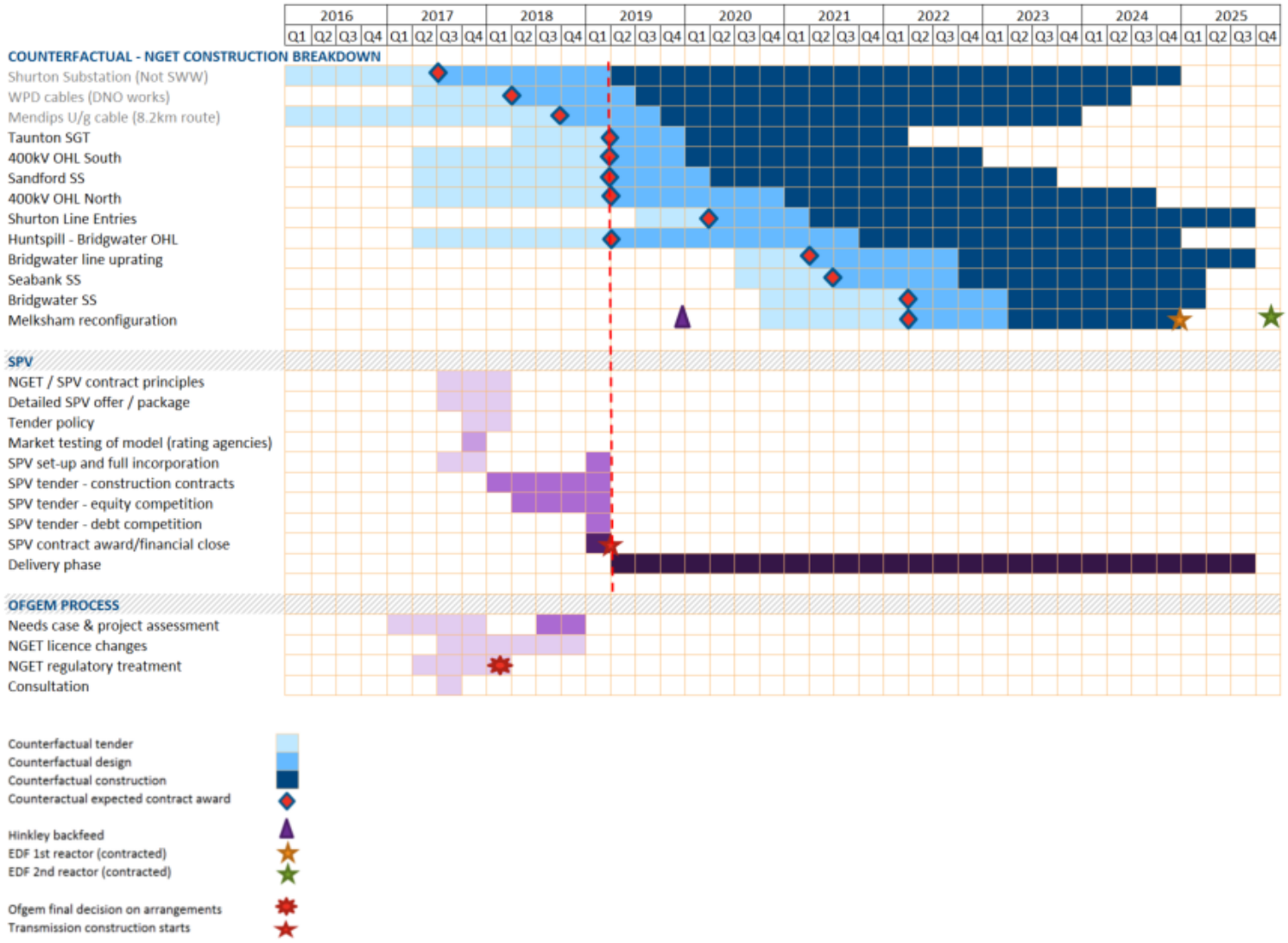
3.17. As set out in 3.13, we consider that any delivery model for HSB should be deliverable within the timetable specified in the connection contract for HPC. We have therefore considered the most appropriate timing for the SPV competition against NGET's current proposed timetable for HSB. Based on benchmarking against other similar competitive tenders and mapping timings to NGET's current delivery timetable, we consider that the SPV model is deliverable within the current contracted delivery dates for HSB. We would not pursue this option if it had a material impact on the ability to deliver the project on time.

3.18. Based on current contracted delivery dates, we currently consider that the SPV competition may need to begin by Q1 2018. We would therefore want to be sure NGET's proposed approach to setting up and running the SPV competition was robust far enough in advance of that date in order to support the deliverability assessment.

3.19. Figure 2 shows potential delivery timescales under the SPV model in comparison to NGET's proposed delivery programme under the status quo SWW arrangements. The top two items are likely to be outside the scope of the SPV tender process as they relate, respectively, to works that are not funded under SWW, and DNO works that are likely to be delivered by WPD irrespective of the delivery model. Based on current timescales, procurement of the Mendips underground cable may need to be outside the scope of the SPV tender, ie NGET may need to procure the cable and novate the contract for the cable works to the SPV. We consider this further in Appendix 1. However, we invite your views on whether there are other arrangements for this cable that could ensure it is delivered on time.

24 https://www.ofgem.gov.uk/sites/default/files/docs/2015/10/ecit_consultation_v6_final_for_publication_0.pdf (from para 1.139)

Figure 2: Indicative timeline based on NGET's construction programme



Transferability

3.20. HSB has already been granted a DCO. As set out in our competition assessment consultation on the NWCC project in December 2016[25] our view is that the DCO is capable of being transferred to a third party (in this case the SPV, rather than a CATO). However, as NGET would retain responsibility for HSB under its transmission licence under the SPV model, it is possible that some or all of the DCO would not need to be transferred to the SPV. The precise arrangements would need to be specified and determined as part of the SPV tender and we invite any early views on this. We consider that the same points may apply to transfer of any land to the SPV.

3.21. As set out in para 3.19, we consider that it should be possible under the SPV model for NGET to transfer any supply chain contracts to the SPV, where those contracts need to be procured before the SPV could procure them. Where any such transfer is necessary, we would want to be assured that the contracts were transferred on economic and efficient terms to the SPV.

3.22. In summary, we do not currently consider that there are any reasons why transfer of physical or non-physical assets should materially impact deliverability of the SPV model.

NGET's role in the SPV model / benefit sharing

3.23. We are exploring various ways in which NGET could be able to share in the benefits of the SPV model that would be commensurate with any risk it would remain exposed to as the licence holder responsible for HSB and in order to create the right incentives for successful implementation.

3.24. We consider it may be appropriate to allow NGET the opportunity to retain a specified equity stake in the SPV, which would provide certainty on a level of return for the full revenue term. The cost of this equity stake would however need to be determined through the SPV competition, rather than relate to any equity return we determined for NGET as part of RIIO.

3.25. Given the key role that NGET would play in implementing the SPV model, we are considering whether it would be appropriate to allow NGET to retain a proportion of the overall consumer saving[26] derived from its role in successfully implementing the model. Although this should incentivise NGET to maximise the benefits derived through the SPV arrangements, we would need to consider the effects on the overall benefits case for consumers. We would therefore expect to

[25] https://www.ofgem.gov.uk/publications-and-updates/north-west-coast-connections-consultation-project-s-initial-needs-case-and-suitability-tendering

[26] This would need to be determined against a counterfactual estimate of costs under the status quo.

consult further on what level of benefit sharing and equity retention by NGET would support the best outcome for consumers, and we invite views on this.

Competition Proxy model

3.26. We have also considered an alternative model that looks to approximate the benefits of competition without the need to run a tender process for an SPV.

3.27. This model would involve us setting NGET's allowed revenues for HSB in line with the revenue we consider would have resulted from an efficient competition for construction, financing and operation of HSB. We would fix that revenue for a period commensurate with the length of the initial revenue term we would award following a competition. In line with our proposals in 3.16, we would therefore currently propose to set a 25 year revenue term.

3.28. We propose that the allowed revenue under the Competition Proxy model, set for the duration of the revenue term, would be derived from our determination of a WACC and of efficient costs for construction and operations. Specifically we propose:

- A WACC applied to allowed construction spend with a separate ongoing operational WACC for maintaining the constructed assets once built, ie a separate WACC for the construction and operational periods of HSB.

- Allowed construction and operational costs set as part of a Project Assessment process for HSB.

3.29. We propose to set the WACC by careful benchmarking against the financing of comparable projects. Our initial view is that the Interest During Construction (IDC) rates that we set during construction for Interconnector developers and for offshore generators under our OFTO regime may provide appropriate benchmarks for determining the construction period WACC for HSB. This is because we set these rates for the construction period of large infrastructure projects with similar risk profiles to HSB. The WACC bid by OFTOs in our latest tender rounds may provide an appropriate benchmark for determining the WACC during the operational period of HSB, as once HSB's construction works are completed, the owner and operator will be exposed to significantly lower levels of risk, that we consider are broadly comparable to OFTOs. We will consider this further, including whether there are other appropriate benchmarks, from across electricity networks and other sectors where competition is used to deliver projects of similar scale and risk profile.

3.30. We would need to consider the most robust and efficient approaches for determining construction and operational costs for HSB to ensure that only efficiently incurred costs are passed on to consumers. This could include supplementing our current Project Assessment stage under SWW (which takes place before construction starts and determines expected construction costs

before they are incurred) with a review of construction costs incurred once HSB is built.

3.31. Our Project Assessment process would also need to include determination of NGET's operational costs and determination of the treatment of costs identified in Chapter 2 as requiring further justification (eg relating to T-pylons).

3.32. We would also need to consider whether a sharing factor should apply to any of the project costs. We use a sharing factor under the SWW status quo arrangements under RIIO-T1 as this effectively incentivises efficiencies and shares savings with consumers across the full price control. However, there may be more effective means of providing appropriate incentives under a model where we determine a project-specific revenue stream, in particular where efficient costs can be revealed through effective competition.

3.33. The Competition Proxy model does not involve the running of a full competition to determine the efficient revenue stream in the same manner as the CATO or SPV models. We consider it a proxy model due to the proposal to use benchmarks from fully competitive sectors like OFTOs to set rates for HSB.

Deliverability and transferability

3.34. We do not consider that there are any deliverability problems with the Competition Proxy model. This is because there should be no direct impact on the procurement timetable currently proposed by NGET.

3.35. Similarly we do not consider there should be any transferability issues associated with the Competition Proxy model, as delivery of HSB would continue under the full responsibility of NGET.

Benefits of potential delivery models against the status quo

3.36. We consider that both potential delivery models described above could deliver a more favourable consumer outcome relative to the existing RIIO SWW arrangements. Our initial analysis estimates potential consumer savings of c.£30-£120m for the SPV and Competition Proxy models compared to the SWW status quo. We show the basis for this estimate below.

Allows the historically low cost of long term debt currently available in the market to be reflected in the charges consumers face for a longer period

3.37. As set out in Appendix 2, under the RIIO-T1 arrangements, the cost of debt is set on a 10-year trailing average over the price control period. Across the full RIIO-T1 price control this is to reflect that at any given time TOs would be servicing debt incurred over a fairly wide time period with a range of different rates. In practice, we expect debt raised for the construction of HSB would be sought in the current market climate. The debt market has seen a significant fall

in the cost of debt since the RIIO-T1 price control was set. In addition, the historically low cost of long term debt available on the market presents an opportunity to benefit consumers through a model that locks these rates in for a longer revenue period, irrespective of subsequent rate changes in the market over time.

Reflects the low level of long-term operational period WACC being bid at the moment for transmission-like assets (eg in the OFTO programme)

3.38. Within the current market, long-term stable investments are increasingly attractive propositions to investors against wider market uncertainty. This makes the market for equity investment in such assets more competitive, which ultimately leads to lower project WACC. Being able to reflect this in the regulatory model would ensure that this leads to savings for consumers. We have seen this reflected in the increasing savings delivered through OFTO tenders.

Allowed revenue would reflect an efficient ratio of equity to debt ('gearing') for projects at a similar stage of development and of a similar risk profile

3.39. Evidence from our work on OFTOs and interconnectors, alongside insights from prospective CATO bidders, suggest that efficient project-financed gearing levels for new high value projects that have secured planning consent can be in the region of 70-85%. In contrast, NGET's RIIO-T1 settlement assumes notional 60% gearing as it takes account of NGET's entire portfolio of assets. A higher gearing (all else being equal) could lead to a lower overall WACC.

Other potential benefits

3.40. By introducing competition for delivery of HSB, the SPV model also offers additional potential benefits from competing delivery costs across integrated construction and operation activities within the SPV. This allows SPV bidders to price in efficiencies in a competitive environment. However, we haven't quantified these savings into the above potential savings figures.

3.41. In addition to consumer savings for HSB, the SPV model in particular would also provide us with a significant level of price discovery on how the market values the risks faced by incumbent TOs and would likely provide some useful benchmarks to consider in setting future price controls.

3.42. For the avoidance of doubt, the SWW arrangements under RIIO remain a viable option and under consideration for delivery of HSB. We will reach a decision on the delivery model for HSB based on an evidence-based impact assessment and representations made through this consultation.

4. Next Steps

Competition in onshore electricity transmission

4.1. As described in 1.20, we intend to do a review of our new, separable, and high value criteria to consider whether they remain appropriate for the alternative delivery models considered in this consultation. As part of the review, we intend to further consider whether the criteria should be the same for all delivery models (including potentially CATO in future). Subject to the outcome of that review and further policy development, we may look to formalise the criteria in an appropriate form, and consult on any necessary changes to transmission licences.

4.2. Subject to the outcome of the HSB consultation, we will further consider whether the SPV or Competition Proxy delivery models could help to ensure value for consumers for any future SWW projects that meet the criteria for competition and that come forward for construction during RIIO-T1.

4.3. In early 2018, we expect to publish further details on approaches for introducing competition for projects that meet the criteria for competition and that come forward for construction during RIIO-T2. We currently expect that this would include consideration of the SPV and Competition Proxy models alongside CATO and potentially other competition options.

4.4. We will continue to monitor the pipeline of projects that could be suitable for competition, and will undertake further assessments for competition when those projects are submitted to us for either an Initial or Final Needs Case.

The HSB project

4.5. We expect NGET to provide, as part of its response to this consultation, a reasoned explanation of which delivery model it considers provides the best consumer outcome, and why.

4.6. We anticipate deciding on the Final Needs Case for HSB in December, after we have considered responses to this consultation. If our findings on the Final Needs Case do not change through the consultation process, our decision will confirm that NGET will be funded for the efficient delivery of HSB under the terms of the delivery model we ultimately select. This funding will only include areas of cost that we consider to be efficient or appropriate to fund following our Project Assessment.

4.7. We will consult on the delivery approach we propose to take forward for HSB at the same time as our Final Needs Case decision in December. This will include detailed analysis on the quantitative (where possible) and qualitative impact (including deliverability) of the delivery models.

4.8. We will also identify how we propose to implement the delivery arrangements into NGET's licence and revenue, and what impact we expect this to have on our approach to Project Assessment for HSB. We currently expect the Project Assessment would start from mid-2018, but timing depends on NGET's progress on HSB and the delivery model we choose.

Providing your views

4.9. We are keen to engage with stakeholders on our analysis and proposals in this consultation. If helpful, we would be happy to meet with stakeholders during the consultation period.

4.10. If you would like to respond to this document or contact us, please send your response to: NTIMailbox@ofgem.gov.uk. The deadline for response is 11 October 2017.

Appendices

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Appendix 1 – Outline of SPV model and associated arrangements

Model overview

Within the delivery of large electricity transmission projects, TOs regularly outsource large construction and operational elements to contractors. This occurs where TOs consider it the most efficient approach.

The SPV model would expand on this approach to broaden the scope of the procurement to cover all elements necessary for the delivery of a project once it has secured planning consent, ie financing, construction, and operations. Under the SPV model, the TO would be effectively procuring an end-to-end delivery solution for the required network upgrade on behalf of consumers. We expect this approach to drive further efficiency in the financing, delivery and operation of projects such as HSB. It should help encourage new entrants in the supply chain for similar projects. Evidence from other sectors shows that this promotes innovative design and delivery solutions that further benefit consumers in the longer term.

This sort of approach has been used across other sectors. A similar approach has been developed by Ofwat for the funding and delivery of the Thames Tideway Tunnel project. Ofwat has since developed proposals for the incorporation of direct procurement for customers within its consultation for methodology for the 2019 price review.

This appendix sets out further details on how we consider the SPV model **could work**. This draws on our experience from development of the CATO regime, and on development of OFTO Build proposals (specifically the 'Generator EPC OFTO build model').[27] We have also drawn on Ofwat's direct procurement proposals where relevant.

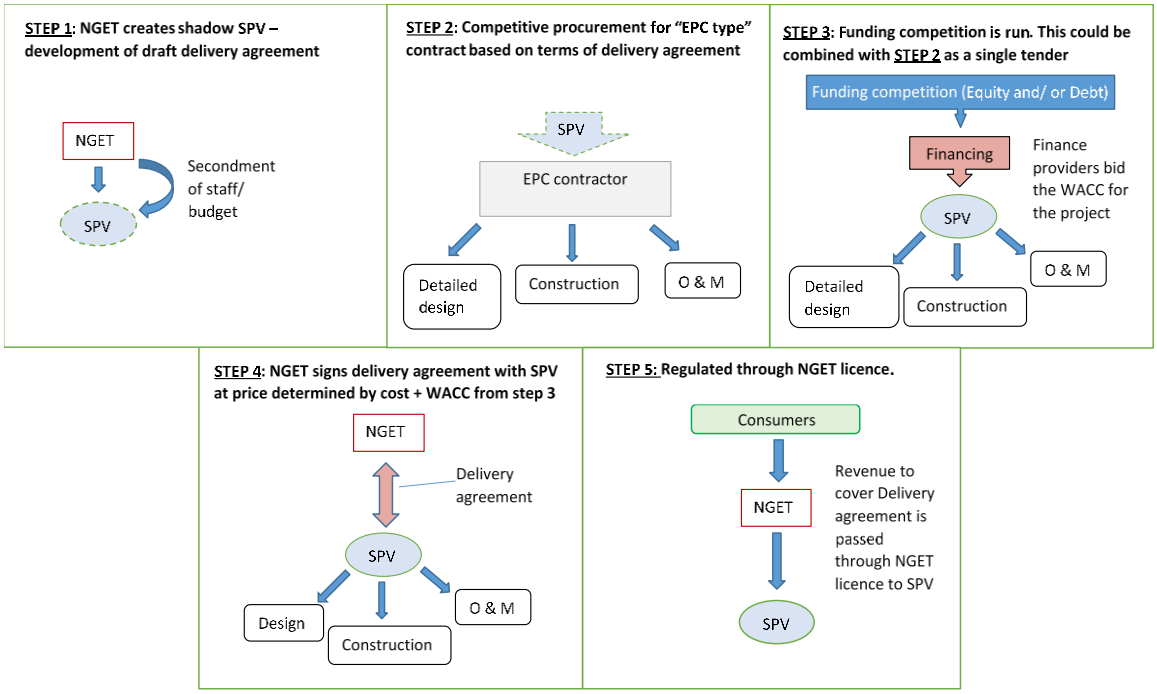
We consider that the below model could however be tailored in several ways to accommodate the different characteristics of the project being tendered, and to reflect the most appropriate allocation of responsibilities across TO and SPV. These responsibilities will be driven to some extent by the level of input the TO wishes to have on the SPV. We have highlighted in the sections below where we consider the main areas of flexibility may lie and the potential implications of those; however, there may be other areas of flexibility that result in comparable consumer outcomes, so we invite views on these alongside the model in general.

[27] https://www.ofgem.gov.uk/publications-and-updates/ofto-build-providing-additional-flexibility-through-extended-framework

Process

Figure 3 sets out an overview of the SPV procurement and appointment process:

Figure 3: SPV Procurement



Step 1

Before taking forward the SPV model, we would want to be comfortable that the model can deliver material savings for HSB. Much of this will depend on the terms of the delivery agreement between NGET and the SPV (including risk allocation), and the scope and quality of the procurement process for the SPV competition. As such, we consider that Ofgem should play an important role in determining and agreeing the parameters of the competition before it commences. Our role is explained later in this appendix, but at Step 1 we would anticipate working closely with NGET to design the scope and structure of the SPV competition and the principles of the Delivery Agreement between NGET and the SPV. We would also need to ensure the terms of the Delivery Agreement did not cut across the regulatory regime or move overall responsibility and operational control from NGET. NGET would then produce a near final draft of the Delivery Agreement before commencing the SPV tender. Our views on the terms of the Delivery Agreement are covered further later in this appendix.

NGET would initially create a 'shadow' SPV for HSB, with secondment of staff and budget necessary to carry out the functions the SPV will need to undertake before the SPV signs the Delivery Agreement with NGET in Step 4. We refer to a 'shadow' SPV as we anticipate the SPV would initially be incorporated as a 'shell company'

with no liabilities. The 'shadow SPV' would have resources and people allocated to it by NGET as and when required in line with the functions the SPV needs to carry out during the SPV procurement process for HSB.

Subject to Ofgem's agreement, it is possible that either NGET or the shadow SPV, or some other party nominated by NGET, would be responsible for running the SPV procurement, ie the procurement of contractors and sub-contractors to deliver HSB, and the associated financing (debt and equity). We would expect NGET to ensure to our satisfaction that it had appropriate arrangements in place to avoid conflicts and ensure a fair and transparent procurement process.

For the sake of simplicity hereafter, we refer to NGET running the SPV tender/procurement and to the SPV as the entity appointed following the procurement process.

Steps 2 and 3

Once appointed, the SPV would need to manage its contractors and sub-contractors delivering HSB. We anticipate that the SPV might do this either through an 'EPC style' contract arrangement directly with the sub-contractors (ie the SPV would effectively be an 'EPC contractor') or through an 'EPC contractor' that separately manages the project for the SPV. The SPV will also need to secure the necessary financing (debt and equity) to deliver construction of HSB and operate it for the duration of the revenue term. As such, we consider that the Delivery Agreement should be in final form (or at least not be subject to any material change) at the Invitation to Tender (ITT) stage in order to attract the most economically advantageous bids.

Our initial preference is that the SPV competition covers the widest possible scope, ie that the competition invites bidders to procure all the contractors/sub-contractors for construction and operation of HSB, and all the associated financing (debt and equity) and submit their proposals in relation to all these areas at the ITT stage. This will support efficiencies through holistic delivery of construction, operations and financing, and ensure that competitive pressure is brought to bear on all these areas.

We are open to considering alternative approaches to the scope of the SPV tender, where these deliver consumer benefit. For example, we referred in Chapter 3 to the contract for the Mendips underground cable potentially being procured by NGET before the SPV tender and that contract then being novated to the SPV. This would slightly reduce the scope of the SPV competition (and therefore potentially reduce savings), but may assist with timely deliverability of HSB. Where NGET proposes any variations to the scope of the SPV competition, we would expect them to justify the consumer benefit before we decide to allow them.

We have no fixed view at this point as to whether the specific terms of the debt would need to be bid at the ITT stage, or whether the Preferred Bidder could bid its approach to securing debt at the ITT stage and then run a debt funding competition at the Preferred Bidder stage.

Steps 4 and 5

The Preferred Bidder appointed through the SPV competition will need to undertake all necessary commercial, financial, legal and technical due diligence before signing the Delivery Agreement with NGET.

Once this happens, the SPV would receive revenue from NGET in line with the terms of the Delivery Agreement. NGET (TO) would therefore operate as direct counterparty to the SPV. We currently consider that revenue would commence once the SPV has completed construction of HSB, but this would need to be considered as part of the Delivery Agreement principles set out later in this appendix. We would amend NGET's licence to enable it to recover from consumers the annual revenue stream it is contractually required to pay to the SPV. This revenue would be paid to the TO, under the usual existing arrangements by National Grid in its role as SO, collecting and distributing charges from users of the transmission system. We would anticipate that this funding would be set out in NGET's licence before construction begins in order to provide confidence to the market that a consistent regulatory approach will be in place for the full revenue term.

Whether the SPV is a subsidiary (as defined in the Companies Act 2006) or not of NGET after SPV financial close may depend on the percentage of equity held by NGET and/or on the form of any control NGET has over the SPV as set out in the Delivery Agreement. Our initial expectation is that the SPV will not ultimately be a subsidiary of NGET.

At the end of the SPV revenue period we anticipate that the management and operation of the HSB assets would transfer to NGET, subject to any handover criteria specified in the Delivery Agreement.

Roles

As is the case with all work outsourced by a TO at present, we would not directly regulate the delivery body, in this case the SPV. For HSB, the SPV would be delivering the work under contract with NGET as the holder of the transmission licence for HSB.

Table 3 below sets out how we see the various project roles being split between NGET and the SPV under our initially preferred arrangements.

Table 3: Split of roles between NGET and the SPV

Pre-construction	
Obtain consents (planning, permitting, etc.)	NGET
High level design of transmission assets	NGET
Detailed design of transmission assets	SPV
Supplier engagement	SPV

Main contracts procurement	SPV
During construction	
Legal responsibility for construction (eg under industry codes)	NGET
Funder of construction	SPV
Regulatory reporting (eg to Ofgem and SO)	NGET
Consents management (including stakeholder management) during construction	NGET (although may delegate some day to day responsibility to SPV)
Lender management	SPV
Sub-contractor management	SPV
Project management of construction activities	SPV
Contract Structure	
Outline contract structure	NGET contracts with SPV (as "EPC" contractor) SPV (as "EPC" contractor) contracts with sub-contractors

Delivery Agreement

The Delivery Agreement between the SPV and NGET would specify the required construction and operational works. We expect this would include a requirement for the SPV to comply with certain relevant obligations in NGET's licence for the work it delivers, eg compliance with industry codes and standards. The terms of the Delivery Agreement would also ensure that NGET retained overall regulatory responsibility for HSB and operational control of the transmission assets.

We expect that the Delivery Agreement may also formally set out:

- responsibilities (eg discharging of planning consents) and information sharing (eg reporting) between NGET and SPV
- project design, specification and delivery requirements
- price and payment structure (eg how and when revenue flows) – prices are typically fixed up-front
- arrangements for variations (eg to specification, programme or price)
- how specific liabilities (eg in relation to delivery, operational performance) and risks are allocated and managed (eg via indemnities and collateral warranties, financial security arrangements)
- any performance incentives (upside and downside)
- arrangements for completion and handover to NGET, and
- step-in and termination arrangements, eg NGET and SPV lender rights.

We consider it important that the terms of the Delivery Agreement ensure that the SPV carries out its obligations in relation to HSB in an economic and efficient way. For example, risks should be allocated to the party best able to manage that risk,

and the terms in the areas bulleted above should be reasonable and comparable to arrangements for delivery of other projects of similar size and risk profile. We set out previously in our work on OFTO Build some general principles we consider should be followed for 'EPC-type contracts',[28] which we could look to adapt to provide guidance on our views on how to structure an economic and efficient Delivery Agreement.

Risk allocation

Ensuring that the SPV is a financeable and attractive investment opportunity is important in promoting strong competition to drive down the cost ultimately passed on to consumers. This requires the establishment of a precise project-specific allocation of risk between the SPV, NGET and ultimately consumers. Whilst our starting assumption is that the SPV should face as many of the risks TOs traditionally face as possible, it is likely that there are particular high impact and low probability risks that it would be inefficient for the prospective SPV market to reflect in their bids for HSB. Under the SPV model we would expect NGET to propose an appropriate risk allocation for our approval before the start of the tender process. We welcome responses from stakeholders on which high impact risks it might be sensible for NGET or consumers to retain.

Tender process and governance

As set out earlier, we propose that Ofgem would need to play a role under the SPV model to ensure the SPV competition leads to appropriate consumer benefits. Our proposed split of roles between Ofgem and NGET for the design and running of the SPV competition are in Table 4.

Table 4: Split of roles between Ofgem and NGET

Ofgem's role	NGET's Role
Lead on designing NGET regulatory treatment (subject to consultation and input from NGET)	Run the tender, evaluate bids and decide on the outcomes (with Ofgem oversight of robustness/ fairness/ conflict mitigation etc)
Lead on HSB needs case assessment and on overall HSB CBA (subject to consultation)	Lead on tender policy and drafting tender documents, including evaluation criteria (with Ofgem oversight)
Lead on changes to NGET's licence to enable/implement the SPV model for HSB (subject to consultation and input from NGET)	Lead on putting together detailed SPV Delivery Agreement
Propose 'NGET/SPV Delivery Agreement principles' and agree these with NGET before commencement of the tender	Lead on market testing

[28] https://www.ofgem.gov.uk/publications-and-updates/epc-contract-principles-ofto-build-tenders

Oversight of NGET-led: market testing, shadow-SPV creation, management of conflicts of interest, Delivery Agreement drafting/development and tender policy and implementation	Manage the implementation of conflict mitigation measures across setup, tendering, and operations.
Regulate NGET via its licence	

Other areas

As we consider the SPV model further over the coming months, we will also set out our initial views on various other areas not covered here, for example:

- any minimum requirements we would set for conflict mitigation and whether and how any subsidiary of the incumbent TO could participate in the SPV tender
- credit rating and counterparty risk
- extent to which the revenue stream is completely fixed, or whether for example there may be review points for operational expenditure
- arrangements for additional investment and new connections during the revenue term; and
- last resort arrangements (for example special administration, methods of payment that might bypass the licensee, TO termination and step-in rights).

Appendix 2 – Cost treatment under RIIO-T1

Expenditure treatment

Under the terms of NGET's RIIO-T1 price control, all capitalised investment (capex) and operational expenditure (opex) is treated equally as total expenditure (totex). For NGET, 85% of its allowed totex is added to its Regulated Asset Value (RAV) as though it is capex and is referred to as "slow money". These RAV additions are depreciated over the specified asset's regulatory life, with the prevailing RIIO WACC applied to each year's RAV value. The remaining 15% of allowed totex is treated as "fast money" which is recovered within the year it is spent.

Across NGET's overall annual price control expenditure, where total totex differs from the level allowed under RIIO (be it above or below expected level), the difference is shared between NGET and consumers. The exact proportions of how over and underspends are shared between NGET and consumers is determined by the upfront "sharing factor". For RIIO-T1, NGET's sharing factor is set at 53.11%. The sharing factor is designed to ensure that consumers benefit from efficiencies that are derived by NGET during the price control, whilst also ensuring that the TO is continually incentivised financially to drive further efficiencies. NGET's share of any annual over or underspend through the sharing factor is split between fast money and slow money in the same way as the rest of its totex.

Financial arrangements

As is the case with all companies regulated through a RIIO price control, NGET's annual RAV figure has its RIIO-T1 'Vanilla' WACC applied to it. The Vanilla WACC is derived from the pre-tax cost of debt and post-tax cost of equity. For RIIO-T1, NGET's cost of debt was set at the ten-year trailing average cost of debt from comparable data points within the market, which currently calculates as 2.38% as of 31 March 2017. The cost of equity was set at 7.0%. Based on a notional gearing of 60%, this leaves a 2016/17 WACC of 4.23%.

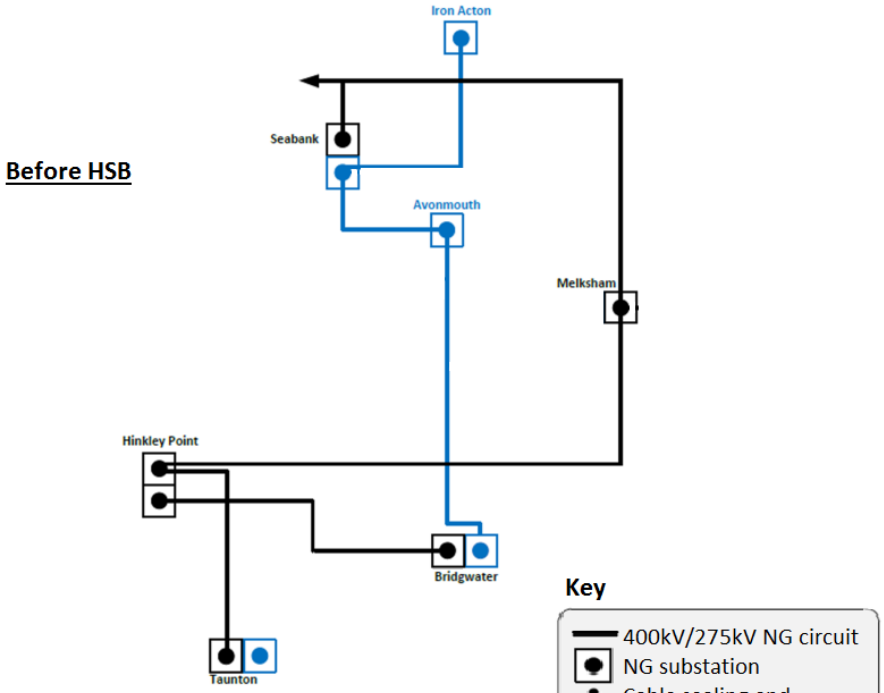
		2013/14	2014/15	2015/16	2016/17
Pre-tax cost of debt	annual real %	2.92	2.72	2.55	2.38
Post-tax cost of equity	annual real %	7.00	7.00	7.00	7.00
Notional gearing	%	60.00	60.00	60.00	60.00
Vanilla WACC	**annual real %**	**4.55%**	**4.43%**	**4.33%**	**4.23%**

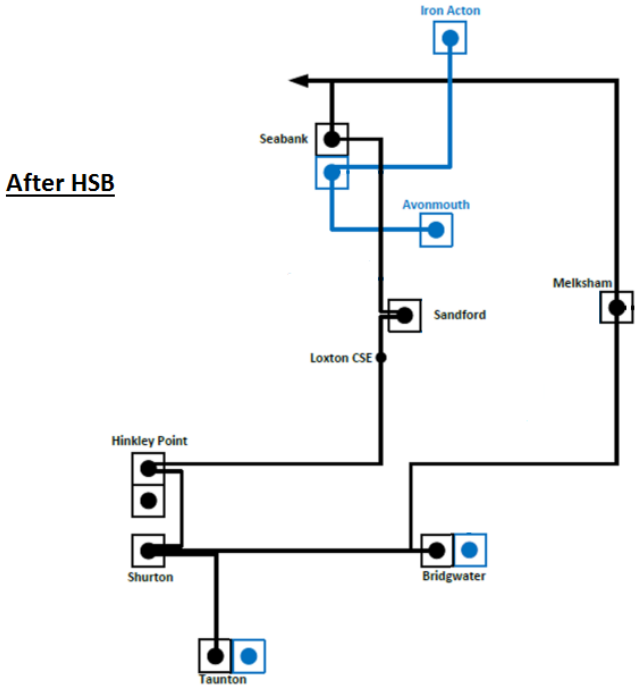
Appendix 3 – Initial review of the criteria and CATO policy when applied to the SPV and Competition Proxy models

Model	New	Separable	High Value	Packaging – Bundling	Packaging – Splitting	Packaging – Re-packaging
Objective	- Maintain regulatory clarity for existing asset owners - New entrants not exposed to risks in taking over already operational assets	- Minimise interface complexities between new party and existing asset owners - Easier to scope separable assets for a successful tender	- Only tendering assets where the benefit significantly outweighs tender and interface costs - Likely to attract market interest	- Fewer, more effective tenders if appropriate	- Enabling more effective and focussed competitions - Possible increased and wider market interest	- Maximise consumer benefits from competition for as many projects as possible
Current policy	- Completely new or complete replacement	- Boundaries can be clearly delineated - Does not need to be contiguous - Does not need to be electrically separable, SO to assess benefits	- £100m capital expenditure - Not indexed - Includes identifiable and appropriately allocated risk allowances	- Combine one or more smaller projects into a single tender where there is a common need or driver	- Split up projects into smaller tender if for example particularly high in value, differing in technologies included, or particularly long or discrete multi-phase construction	- Re-package the project where certain elements of the project do not meet the criteria, or have deliverability issues
SPV	**Objectives fully relevant** - Regulatory clarity for existing owners still relevant and important - SPV bidders would similarly need to consider risks in taking over existing TO assets	**Objectives fully relevant** - Similar need for clear boundaries between SPV and TO	**Objectives fully relevant** - SPV tender likely to have similar fixed costs and benefits (if run efficiently) - Likely similar SPV bidding market interest considerations	**Objective fully relevant** - Remains relevant where re-scoped tenders could drive improved outcomes	**Objectives fully relevant** - Remains relevant where re-scoped tenders could drive improved outcomes	**Objective fully relevant** - Remains relevant where SPV model drives better consumer outcomes than status quo
Comp Proxy	**Objectives partially relevant** - Regulatory clarity for existing owners still relevant and important - No new entrants or asset transfer	**Objectives not relevant** - All assets delivered by incumbent so no boundary considerations	**Objectives mostly relevant** - No tender, interface costs, or market interest considerations - However, cost benchmarks likely to be more relevant to high value capital expenditure projects	**Objective partially relevant** - No tender delivery practicalities and market interest considerations - However, may be some process efficiencies of running fewer Project Assessments	**Objectives partially relevant** - No tender delivery practicalities and market interest considerations - However, may be some efficiencies of running more focused Project Assessments as and when required	**Objective fully relevant** - Remains relevant where Competition Proxy model drives better consumer outcomes than status quo

Model	Deliverability	Transferability	Asset Transfer	Identification Process / Assessment
Objective	- Projects and connections not delayed by tendering	- Effective transition from TO-led to CATO-led project - Minimise potential delays or additional costs to project post-tender	- Minimise the amount of asset transfer required between new party and existing owners	- Consistent and reproducible process that gives clarity on regulatory approach and provides appropriate and timely visibility
Current policy	- Will consider the timing deliverability of the project for RIIO-T1 projects, ie 'projects in flight' while competitive regime is first being developed / implemented	- Non-physical assets (prelims, property rights, etc) need to be transferred to appointed CATO - Land rights, planning, etc should be made transferable	- Standard industry arrangements (e.g. interface agreements) sufficient most of the time - Asset transfer should be marginal - Do not expect any third party transfers, but would address on case-by-case basis	- NOA identifies projects suitable for competition - SWW arrangements cover preconstruction works - Initial Needs Case (Initial Tender Checkpoint in RIIO-T2) provides initial view on needs case and competition assessment - Final Needs Case (Final Tender Checkpoint in RIIO-T2) provides final decision on needs case and competition assessment
SPV	**Objective fully relevant** - Objective still relevant when assessing whether SPV tender can work in time (albeit different timing considerations to CATO tenders given no need to wait for CATO legislation)	**Objectives fully relevant** - Likely to be need for non-physical asset transfer between TO and SPV (albeit possible that fewer non-physical assets will be transferred than under CATO)	**Objective fully relevant** - Similar rationale for avoiding asset transfer between new and existing parties where does not support consumer benefits	**Objective fully relevant** - No apparent reason why this should differ from CATO approach in RIIO-T1. - RIIO-T2 approach will need further consideration depending on wider RIIO-T2 policy
Comp Proxy	**Objective fully relevant** - Objective still relevant when assessing whether model can work in time - However, timing impact likely to be minimal given process similarities to status quo arrangements	**Objectives not relevant** - All assets delivered by incumbent so no transferability considerations	**Objective not relevant** - All assets delivered by incumbent so no transferability considerations	**Objective fully relevant** - No apparent reason why this should differ from CATO approach in RIIO-T1. - RIIO-T2 approach will need further consideration depending on wider RIIO-T2 policy

Appendix 4 – Schematic maps of HSB

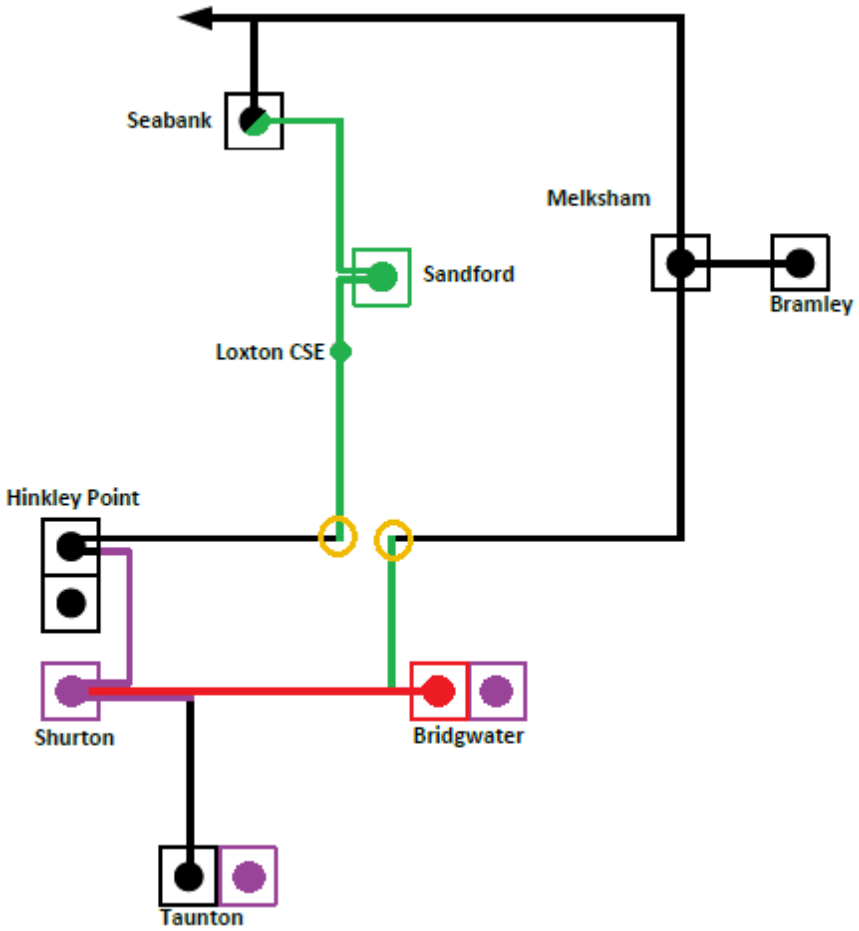




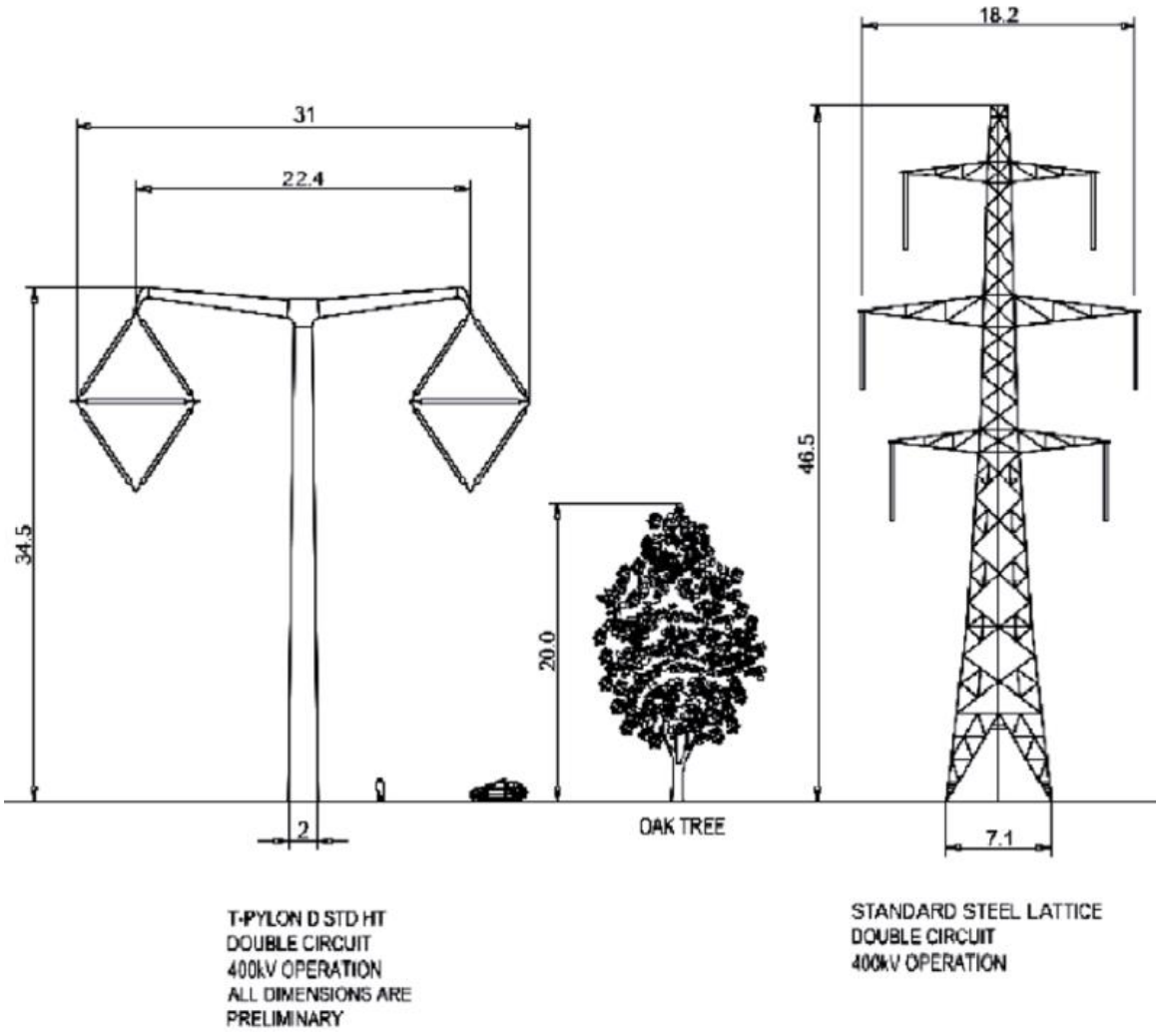
Appendix 5 – Schematic of HSB showing new and separable criteria assessment

The diagram below is a schematic of HSB that relates to our criteria assessment in Chapter 3 of this consultation.

- Lines in green represent sections we consider are *new*.
- Lines in red represent sections we consider are not *new*.
- Lines in black represent the existing transmission assets, that are outside the scope of HSB, and therefore outside the scope of our criteria assessment.
- Lines in purple represent transmission assets works for which NGET is not seeking funding through SWW, and are therefore outside the scope of our criteria assessment.
- Yellow circles indicate the points considered further for the separability criterion in paragraph 3.5.



Appendix 6 – Visual representation of T-pylon vs. regular lattice pylon



Source: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020001/EN020001-000776-5.2.2.6%20ES%20Project%20Need%20and%20Alternatives%20Appendix%202K.pdf

Appendix 7 – Feedback on this consultation

We want to hear from anyone interested in this document. Send your response to James Noman.

We've asked for your feedback in each of the questions throughout it. Please respond to each one as fully as you can.

Unless you mark your response confidential, we'll publish it on our website, www.ofgem.gov.uk, and put it in our library. You can ask us to keep your response confidential, and we'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004. If you want us to keep your response confidential, you should clearly mark your response to that effect and include reasons.

If the information you give in your response contains personal data under the Data Protection Act 1998, the Gas and Electricity Markets Authority will be the data controller. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. If you are including any confidential material in your response, please put it in the appendices.

General feedback

We believe that consultation is at the heart of good policy development. We are keen to hear your comments about how we've conducted this consultation. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6. Any further comments?

Please send your comments to stakeholders@ofgem.gov.uk