

Draft Impact Assessment

Draft Impact Assessment on applying late competition to future new, separable and high value projects in electricity distribution networks during the RIIO-2 period

Division:	Systems and Networks	Type of measure:	Competition in electricity distribution networks
Associated documents:	RIIO-ED2 Sector Specific Methodology Consultation July 2020	Type of IA:	Qualified under Section 5A UA 2000
Coverage:	Full		

Summary:

This document is a draft Impact Assessment (IA) that sets out our analysis of whether the benefits to consumers and other parties of introducing late competition to, or seeking to replicate competition in, the construction and operation of new, separable and high value electricity distribution network projects during the RIIO-2 period, are likely to be greater than the costs. This IA is an updated version of the RIIO-2 late competition IA published in May 2019, and has been updated to reflect considerations in electricity distribution.¹

¹RIIO-2 Late competition IA available here:
https://www.ofgem.gov.uk/system/files/docs/2018/12/competition_draft_ia_dec_2018.pdf

What is the problem under consideration? Why is Ofgem intervention necessary?

Ofgem's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. As part of achieving these objectives, Ofgem seeks to ensure that new large electricity and gas network projects that are needed are delivered as efficiently as possible. Since 2009 we have successfully applied competition to significantly reduce the costs of offshore electricity transmission. Since 2015, we have been developing policies and frameworks to introduce competition, or seeking to replicate competition, in the delivery of new, separable and high value onshore electricity transmission projects. In our December 2019 RIIO-ED2 Framework Decision, we outlined our intention to extend the role of competition into the electricity distribution sector where it is appropriate and provides better value for consumers.

This Impact Assessment (IA) considers whether the benefits are more likely to be greater than the costs to consumers of applying 'late'² competition to future new, separable and high value³ projects in electricity distribution networks during the RIIO-2 period, against a counterfactual of delivery through the prevailing price control by the relevant incumbent network licensee.

What are the policy objectives and intended effects including the effect on Ofgem's Strategic Outcomes

Consistent with Ofgem's Strategic Outcomes and regulatory stances, the main outcome of applying competition, or seeking to replicate competition, in construction and operation of future new, separable and high value projects in electricity distribution networks would be to lower bills for energy consumers. Additionally, applying competition can help the energy system better achieve decarbonisation targets and encourage new innovation.

What are the policy options that have been considered, including any alternatives to regulation?

² By 'late competition' we refer to competition focused on the delivery (ie construction and operation) of projects

³ £100m capex or above.

Option 1: The preferred option - introducing competition to, or seeking to replicate competition in, the construction and operation of electricity distribution network projects during the RIIO-2 period that are:

- New – completely new assets or complete replacement of existing assets.
- Separable – ownership between these assets and other (existing) assets can be clearly delineated.
- High value – at or above £100m in value of the expected capital expenditure of the project.

Option 2: in the event that option 1 is not implemented, continuation of 'status quo' arrangements for the delivery of new, separable, high value electricity distribution network projects during the RIIO-2 period. The incumbent network licensees would construct and operate the projects within their respective regions and this would be regulated under the status quo RIIO arrangements. This represents the 'status quo' or 'do nothing' option and would involve the licensees receiving revenue for delivering the project in line with the prevailing price control arrangements.

We are aware that in ED there is the possibility of competition via iDNOs or flexibility markets; however, we are not aware of any projects that would meet the new, separable and high-value criteria outlined above that would be subject to iDNO competition or flexibility markets. We have therefore assumed that the status quo in this instance is incumbent DNO delivery through RIIO-ED2.

Under Option 1 we consider a range of possible 'late' competition models developed within the context of onshore electricity transmission and extended/amended as appropriate to reflect any sector-specific considerations so that these can apply across electricity distribution. The models we consider under option 1 are:

- Competitively Appointed Distribution Owner (CADO) model: a competition, run by Ofgem or another independent party, to determine the entity to be awarded a distribution license⁴ by Ofgem to finance, construct and operate the distribution assets/project subject to the tender exercise. The CADO model would be expected to be closely based on the CATO model being developed in electricity transmission. The tender revenue stream determined through the competition

⁴ In the case of an incumbent DNO winning the competition, this could result in an amendment to the incumbent's current licence.

(ie the cost allowances for delivering the project) would be reflected in the licence and cover an extended period of operation of the assets (for example 25 years). The licence would also set out the relevant obligations and incentives on the licensee.

- Special Purpose Vehicle (SPV) model: an SPV would be appointed to finance, construct and operate the distribution asset, following a competitive tender run by the incumbent DNO (ie the DNO responsible for the assets/project). Unlike in the CADO model, the incumbent DNO would retain the regulatory responsibility under its licence for delivering the project, but the DNO would enter into a long-term contract with the SPV for delivering the project. The cost allowances for delivering the project would be reflected in the contract and cover an extended period of operation of the assets (for example 25 years) - these terms would also be reflected in the incumbent DNO's licence. Entering into a contractual partnership to deliver such projects efficiently may benefit the incumbent network companies (for example where the project might constitute a significant portion of their overall RAB), as well as offering value to consumers. The SPV model is similar to the 'Direct Procurement for Customers' model being implemented by several licensees in the water sector, in collaboration with Ofwat.⁵
- Competition Proxy Model (CPM): Ofgem would set allowed revenues for the project that it considers would have resulted from an efficient competition for construction, financing and operation of the distribution assets/project, to cover an extended period of operation of the assets (for example 25 years). Benchmarks would be used to set financing costs, and an Ofgem-run cost assessment process would be used to determine capital and operational cost allowances.

Preferred option - Monetised Impacts

Business Impact Target Qualifying Provision	Non-qualifying (competition)
Business Impact Target (EANDCB)	Not relevant

⁵ https://www.ofwat.gov.uk/wp-content/uploads/2020/02/DPC-Con_Appendix-2_DPC-Briefing-Note.pdf

Net Benefit to GB Consumer	See below
Wider Benefits/Costs for Society	N/A
<p>In summary, our analysis shows that introducing late competition, or seeking to replicate competition, in the construction and operation of electricity distribution network projects that are new, separable and high value during the RIIO-ED2 period can deliver savings for consumers. The CPM can do this by reflecting efficient market-based costs for financing new, separable and high value projects, where these are not reflected in financing costs for such projects set under RIIO. The SPV and late CADO models have the potential to unlock additional savings for consumers, by also driving savings in capital and operational expenditure.</p> <p>Our analysis shows that the cost of introducing late competition to the construction and operation of electricity distribution network projects that are new, separable and high value (option 1) is estimated at 3.25-9.50% of the value of projects involved, depending on the number and size of projects subject to competition. The 9.50% cost figure results from only applying late competition to one £100m project during RIIO-ED2. Under scenarios where more than one project is subject to competition, or where projects of £250m or above are subject to competition, the costs reduce to 3% or less of the capex of projects involved.</p> <p>Our qualitative assessment of benefits highlights the potential for these costs to be outweighed by savings made in capital, operation and financing costs through late competition. The OFTO regime has been estimated to have brought consumers net savings of 19-23% of the value of OFTO projects (across TR1, TR2, and TR3), when compared to regulated counterfactuals. We have also observed significant cost savings from competitions for the market in other areas such as CfD auctions, Thames Tideway project and competitions for electricity transmission in North and South America and in Australia.</p> <p>We therefore consider that the potential savings from implementing option 1 are likely to be higher than the costs we have modelled. Further, we also intend to carry out project-specific impact assessments nearer the time, as and when we decide whether to apply competition to projects that meet the new, separable and high value criteria.</p>	

Preferred option - Hard to Monetise Impacts

The late CADO and SPV models encourage competitive pressures in the supply chain, leading to innovation and new sources of labour and capital. They can also help us with our determination of efficient costs for wider assets covered by our price control arrangements by providing price discovery and additional cost benchmarks.

Chapters 3 and 4 of this IA set out in more detail the costs and benefits of introducing competition, or replicating competition, in the construction and operation of electricity distribution projects that are new, separable and high value during the RIIO-2 period. Chapter 6 sets out the distributional effects.

Key Assumptions/sensitivities/risks

Chapter 2 sets out the assumptions used in our modelling for this IA.

Will the policy be reviewed? tbc	If applicable, set review date: tbc
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Is this proposal in scope of the Public Sector Equality Duty?	No
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Summary table for all options

Summary of options	Main effects on Consumer outcomes	Key considerations
Option 1: introducing late competition, or replicating competition, in the construction and operation of electricity	We consider that the potential savings would be higher than the costs, even when extra interface costs are added (for the purposes of running a sensitivity).	We would need to further develop the competition models to optimise them for electricity distribution. We would also need to determine which competition model to use for each project once the models had been developed further.

Summary of options	Main effects on Consumer outcomes	Key considerations
distribution network projects that are new, separable and high value during the RIIO-2 period.		Furthermore, we need to understand the pipeline of future possible projects through RIIO-ED2 business plans.
Option 2: RIIO 'status quo' arrangements.	No change to RIIO-2 outcomes.	This option represents the counterfactual of delivery through the prevailing price control by the relevant incumbent network licensee.

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1. Introduction

1.1. Since 2009 we have successfully applied competition to significantly reduce the costs of offshore electricity transmission.⁶ Since 2015, we have been developing policies and frameworks to introduce competition, or replicate competition, in the delivery of new, separable and high value onshore electricity transmission projects. In our December 2020 RIIO-ED2 Framework Decision, we outlined our intention to extend the role of competition into the electricity distribution sector where it is appropriate and provides better value for consumers.

1.2. This IA considers the benefits and costs to consumers of applying various models of late competition to future new, separable and high value⁷ projects in electricity distribution networks during the RIIO-2 period (option 1 on page 2), against a counterfactual of delivery through the prevailing price control by the relevant incumbent network licensee (option 2 on page 3).

1.3. This IA focuses on a 'break even' analysis for introducing late model competition to new, separable and high value projects in electricity distribution during the RIIO-2 period. It does this based on estimating costs for introducing competition, under a range of different scenarios. These costs represent the 'break even' point against which we consider whether it would be beneficial to introduce competition. This IA then compares those costs against benefits observed from previous competitions to consider whether the benefits of introducing competition are likely to be greater than the costs.

1.4. This IA has been published alongside the RIIO-ED2 Sector Specific Methodology consultation, available on our website.

IA from May 2019

1.5. In May 2019 we published an IA alongside the RIIO-2 Sector Specific Methodology Decision.⁸ This IA is an updated version of the RIIO-2 late competition IA published in May 2019, and has been updated to reflect considerations in electricity distribution.

⁶ <https://www.ofgem.gov.uk/publications-and-updates/evaluation-of-to-tender-round-2-and-3-benefits>

⁷ £100m capex or above.

⁸ <https://www.ofgem.gov.uk/publications-and-updates/riio-2-sector-specific-methodology-decision>

Overview of the competition models considered in this document

1.6. This IA considers three 'late' competition models developed within the context of onshore electricity transmission and assumed to be extended/amended as appropriate to reflect any sector-specific considerations so that these can apply in electricity distribution.

1.7. We only consider the application of these delivery models to the financing, construction and operation of electricity distribution network projects that are new, separable and high value (as defined on Page 2).

1.8. The models we consider are set out on Page 3: late CADO build; SPV model and the CPM. Please see the appendix of Annex 2: Keeping bills low for an initial view of the applicability of these models for electricity distribution.⁹

1.9. This IA does not consider early models of competition. Our RIIIO-ED2 Sector Specific Methodology Consultation document contains more information on potential forms of early competitions.

Structure of this document

1.10. This document covers the following:

- Chapter 2 sets out our assumptions used in this analysis.
- Chapter 3 considers the benefits of introducing late competition, or replicating competition, in the construction and operation of electricity distribution network projects that are new, separable and high value.
- Chapter 4 considers the costs and risks of introducing late competition, or replicating competition in, the construction and operation of electricity distribution network projects that are new, separable and high value.

⁹ https://www.ofgem.gov.uk/system/files/docs/2020/07/ed2_ssmc_annex_2_keeping_bills_low_0.pdf

- Chapter 5 sets out our overall cost benefit assessment of introducing late competition, or replicating competition, in the construction and operation of electricity distribution network projects that are new, separable and high value.
- Chapter 6 considers the distributional effects of introducing late competition, or replicating competition, in the construction and operation of electricity distribution network projects that are new, separable and high value.

2. Assumptions used in this analysis

2.1. This chapter sets out the assumptions underlying our analysis of the potential impact of introducing late competition, or replicating competition, in the construction and operation of electricity distribution network projects that are new, separable and high value, instead of the prevailing RIIIO price control approach.

2.2. In the following sections we have set out:

- An overview of our general modelling approach for this IA; and
- Different project scenarios we have used in our modelling.

General modelling assumptions

2.3. The uncertainties around the pipeline of projects meeting the new, separable and high value criteria and the exact costs and benefits across a number of competition models mean that we do not consider that it is possible or appropriate to arrive at a single monetary estimate of the impact of introducing late competition or replicating competition in electricity distribution networks.

2.4. Instead, we have outlined scenarios to demonstrate the potential scale of costs of developing and introducing late competition models across electricity distribution networks, using justified assumptions. The scenarios assume a particular number of projects of a particular size are subject to late competition models over a defined timeframe. We assume that these projects are new, separable and high value. We recognise that these scenarios are illustrative and not exhaustive.

2.5. Our modelling is not dependent on the particular late competition model used - we consider total costs of developing and applying all the late competition models. We would expect to update this analysis once we have further developed the late competition models in the electricity distribution sector.

Project scenario modelling

Base project profiles

2.6. Our analysis has used project scenarios to test the potential impact of introducing late competition, or the benefits of late competition, to the construction and operation of electricity distribution network projects that are new, separable and high value. We have based these scenarios on two projects of different capex and construction period profiles, which we have summarised in Table 1.

Table 1 – The base projects

Project	Capex (£m)	Construction period (years)
A	100	2
B	250	3

2.7. We have chosen capex values and associated construction periods that are reflective of new, separable and high value projects that could come forward in RIIO-ED2. However, this would need testing once we receive RIIO-ED2 business plans.

2.8. As set out previously, we intend to consider the application of late competition models to projects that have a capex of at least £100 million. We are therefore using this threshold as the minimum project capex. We have modelled this project capex with a two-year construction period, with the capex spread evenly over that period.¹⁰

2.9. Due to the larger nature of a £250 million capex project, we modelled this with a three-year construction period, again with capex spread evenly over that period.

Pipeline scenarios

2.10. We have used the project profiles above to generate a set of pipeline scenarios that could occur. We have selected a range of scenarios that thoroughly test our proposals and that we consider provide a realistic (both low and high) range of outcomes for projects that could be subject to competition in electricity distribution networks during RIIO-2. We expect to be able to determine the range of these projects with greater certainty once we

¹⁰ We appreciate that in practice capex is not likely to be spread evenly over the construction period for any of the project sizes, but consider that this is an appropriate proxy to use given the significant likely project-specific variation in capex that would be difficult to model consistently.

receive RIIO-2 business plans from licensees in December 2021. These scenarios are set out in Table 2.

Table 2 – Modelled pipeline scenarios

Scenario number	Projects in the scenario	Competition cost assumptions (see Table 4)
1	1 x £100m	High
2	2 x £100m	High
3	1 x £250m	Low

2.11. For scenarios with multiple projects, our modelling assumes that these projects happen in consecutive years.

2.12. The cost assumptions element of each scenario is discussed later in Chapter 4 of this IA.

Cost calculation method

Total costs

2.13. In each scenario, we have calculated each cost element in net present value terms (2020 prices) and totalled them.

- For Ofgem and network licensee tender costs and bidder costs, the cost was calculated from a percentage of the capital value of the projects in each scenario. These costs are assumed as constant and profiled equally along expected timelines. These were discounted at a rate of 3.5% to give their present value, of which a percentage was calculated.
- For costs that are expressed as fixed monetary values in our assumptions, these costs are assumed as constant and profiled equally along expected timelines. They are then converted into net present value using a discount rate of 3.5%.

Costs as a percentage of asset value

2.14. The total costs in a scenario, in net present value terms (2020 prices) are expressed as a percentage of the value of all the projects in a scenario, also in present value terms.

2.15. We have summarised in Table 3 the key parameters used in our modelling for this IA.

Table 3 – Parameters

Parameter area	Description
Starting financial year	We have used the first financial year of RIIO-ED2, 2023/24.
Discount rate	We have used the Social Time Preference Rate (STPR) in line with HM Treasury’s Green Book recommendations. ¹¹

¹¹ <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

3. Benefits of applying various models of late competition to new, separable and high value projects in electricity distribution networks during the RIIO-2 period

Introduction

3.1. This chapter sets out the benefits of applying various models of late competition to future new, separable and high value projects in electricity distribution networks during the RIIO-2 period. Our views on the benefits are informed by our experiences of introducing competition in offshore electricity transmission and by knowledge of similar competitive regimes in different countries and across other sectors.

3.2. It is complex to quantify and monetise the efficiency and dynamic benefits of opening markets to competition, such as the scope of increased innovation and the introduction of new products, services and technologies. We draw on quantitative assessments of comparable competitive regimes as an illustration, but do not make our own quantitative assessment.

General benefits of competition

3.3. Effective competition can enable efficient costs to be revealed. Within some set parameters of project scope and regulation, the pressure of competition encourages parties to reveal the true cost of constructing and operating a project. Parties competing to be appointed are likely to put forward costs that are closer to the efficiency frontier than an incumbent constructing and operating a particular asset under a traditional price control approach, where this overall competitive pressure (ie the pressure associated with seeking the overall right to deliver the project) is not at play. Cost discovery should also improve over successive competitions, as bidders gain experience, allowing them to price more competitively.

3.4. Innovation can also result in lower costs and better value for consumers as bidders seek to create innovative and cost-saving solutions in order to submit competitive bids. It can also have wider benefits, as innovations adopted by one party may be relevant for the rest of the industry and could help drive down wider costs, leading to benefits for consumers.

3.5. The introduction of competition onshore may, over time, introduce downward pressure on the capital and operational costs elsewhere on the onshore network, where competition is not applied. Going forwards, when setting revenue under RIIO price controls, we would be able to compare and benchmark, where applicable, proposed capital and operational costs with those that had been achieved through late competition.

Financing costs (cost of capital)

3.6. We would expect bidders in a competitive process to put forward financing solutions that provide value for money to consumers. Late competition may reduce the cost of equity and debt, as bidders seek out investors and lenders, and the pressure of competition reveals the most efficient cost of equity in particular. Bidders will also look for the most efficient financing structure, including gearing, to reflect the risk of delivering the project.

3.7. Deriving and applying a project-specific cost of capital through competition over the construction and proposed long (indicatively 25 years) operational period of a project ensures that the allowed cost of capital during the operational period appropriately not only reflects current market rates for financing a project, but can also be locked in for the length of construction, and a lengthy operational period of the project. Evidence from the OFTO regime has shown that long-term stable investments are attractive propositions to equity investors, which has driven the healthy level of competition seen in the OFTO regime and led to low operational rates of return.

3.8. Evidence from the OFTO regime, interconnectors, and other project-financed projects suggest that a higher gearing (ratio of debt to equity) than the notional value assumed in network price controls can be more appropriate for new, high-value and separable infrastructure projects. CEPA prepared a report for Ofgem in July 2018,¹² in which the cost of capital ranges for new assets and further detail on the cost of capital we consider is appropriate for construction and operation of new, separable and high value electricity transmission and interconnector assets are considered.

Capital and operational cost savings (SPV and CADO models only)

3.9. Competition will place downward pressure on capital and operational expenditure. In regulating the incumbent network licensees we have to estimate the efficient cost of

¹² https://www.ofgem.gov.uk/system/files/docs/2018/07/cepareport_newassets_july2018_final_0.pdf

constructing and operating new projects, based on the funding requests submitted to us by the licencees. We can draw on independent expertise and benchmarks from other projects, but this cannot completely resolve the problem of information asymmetry where we do not know the true costs likely to be faced by monopoly companies. This is particularly problematic where new, high-value projects are specific in design and do not come forward often, making benchmarking difficult.

3.10. While the incumbent network licensees use competitive tendering to determine the supply chain and some of the associated capital and operational costs for new projects, this may not always reveal the most efficient costs. This is because the scope of that competitive tendering can be relatively limited – for example not including financing (see above section), project management and operations. It also may be limited to certain suppliers.

3.11. Broader scope, more holistic competition 'for the market' may drive contracting with a wider pool of eligible contractors than might otherwise be interested in participating in a narrower competitive procurement. Opening up the supply chain to new parties allows different sources of labour and capital to enter the industry and broadens the market. It also enables new parties to drive efficiencies in the negotiation and management of suppliers. Efficiencies can also be created through the utilisation of a different, more holistic, contracting approach that involves contracting across construction and operation (as opposed to multi-contract procurement under a framework). The competitively appointed party can also design and construct the project with the full lifecycle in mind.

Offshore electricity transmission experience

3.12. We have seen the savings that late competition can bring to the operation and financing of offshore electricity transmission infrastructure. The first three tender rounds of the OFTO regime are estimated to have saved consumers in the region of £700m - £1.3bn to date on an NPV basis over 20 years.¹³ We expect to publish details of further savings next year from the latest round of tenders (Tender Rounds 4 and 5).

¹³ <https://www.ofgem.gov.uk/publications-and-updates/evaluation-of-to-tender-round-2-and-3-benefits>

Other sectors / countries

3.13. We have seen examples of late competition being successfully introduced into electricity transmission across North and South America, and in Australia. We note that legal and regulatory frameworks, as well as planning regimes, differ from country to country and each example differs in aspects of what is competed and how. We will continue to monitor developments in these and other markets to assess the particular benefits to their consumers from those competitions, and to use any learnings from the implementation of those models to derive benefits for consumers in GB.

3.14. In GB, Government introduced auctions for Contracts for Differences (CfD) for renewable generation in 2015. Under these auctions, renewable generation projects that have secured planning consent bid the price (in terms of £/MWh) they expect to receive for 15 years for selling their electricity once operational. The CfD auctions have led to successive significant decreases in the £/MWh costs for renewable generation projects when Government moved to CfD auctions from the previous approach of bilaterally negotiated CfDs.

3.15. Beyond the electricity sector, we believe the low cost of capital¹⁴ delivered by competing the Thames Tideway project demonstrates the potential for competition to drive consumer benefits under a late competition model in GB. The Thames Tideway project is a relevant example of a competition being run when preliminary works (including procurement of construction contracts in this case) are already in place. It demonstrates that significant consumer benefits can be realised, despite there being less scope for design innovation.

¹⁴ The winning bid WACC of 2.497% was substantially below the original estimate of 3.29%

4. Costs of developing and applying various models of late competition to new, separable and high value projects in electricity distribution networks during the RIIO-2 period

Introduction

4.0. As the late competition models described in this document represent a movement away from the current RIIO arrangements, there will be implementation costs and risks associated with them. This chapter explores what costs and risks we expect could apply to developing and implementing the late competition models.

4.1. These costs and risks are based on our experience with the OFTO regime and our Extending Competition in Transmission (ECIT) project. We have only considered costs that are additional to costs incurred in the counterfactual.

Costs of introducing and applying the models

4.2. We have set out a single set of costs below that does not take account of differences between the late competition models. We consider that this approach is appropriate at this stage of late competition model development across sectors other than electricity transmission, where to assign costs to particular models or sectors would not be robust. To account for this, we have profiled the maximum costs we consider could realistically eventuate from designing and running all the competition models, including running sensitivities with some additional costs we consider are unlikely.

4.3. Table 4 below lists the assumed costs in both a 'low cost' scenario (e.g. where similar projects have been taken forward and therefore organisations benefit from experience) and a 'high cost' scenario (perhaps where the project being competed is particularly complex). For the purposes of simplicity in this IA, we have mostly used the high costs as a 'worst case' scenario.

4.4. In summary, we estimate the cost of implementing late competition models, the first time a late competition model is implemented, would be from £5m plus 1.5% of project capex, to £6.5m plus 3% of project capex. If competition models were applied to subsequent projects, then the costs per subsequent project would reduce to £1.5m plus 1.5% of project capex, to £3m plus 3% of project capex, as one-off model design costs of

£3.5m would have already been accounted for. Our estimation of the initial implementation cost in electricity distribution is £0.5m lower in both scenarios than in the May 2019 IA for the other sectors due to the expected efficiencies gained from repeating the implementation process as there will be some similarities in approach across all sectors (eg generic wording of license conditions; see also footnote 15 below). Some costs are given in absolute terms as they relate to general development and implementation of the competition models, whereas others are expressed as a percentage of capex of the project subject to a late competition model as they vary depending on the value of that project. We set out the basis for each of these costs below.

4.5. **Ofgem's late competition model 'design' costs** involve the costs of designing the regulatory model and commercial framework, including liaising and engaging with network licensees and the wider market. For the purposes of this IA, we have assumed that we undertake work to implement late competition in electricity distribution prior to the start of the RIIO-2 price control. We consider, as set out in the accompanying appendix of Annex 2: Keeping bills low, that much of the previous work in onshore electricity transmission is likely to be capable of being used for late competition models in electricity distribution. We have therefore based these costs on a combination of i) costs (£3m) incurred by Ofgem in the development of late competition models in onshore electricity transmission; and ii) additional (£0.5m)¹⁵ costs of optimising the late competition models for use in electricity distribution. This results in total Ofgem late model competition design costs of £3.5m. For completeness we have also sense-checked these costs against Ofgem's costs incurred in designing competitions for offshore transmission assets.

4.6. **Pre-tender costs** for SPV and CADO models involve the costs of setting up a late competition, per project. Under the RIIO 'status quo' counterfactual the network licensee sets up various tender processes to determine the supply chain that will deliver elements of the project. We therefore only consider here any costs that would be additionally incurred per project, by Ofgem and the licensee under late competition models. As such we use £0.5m to represent an approach where pre-tender activities are broadly similar to what would have been undertaken under the counterfactual, and £1m as an estimate of additional pre-tender work costs under a 'high cost' scenario.

¹⁵ In our May 2019 "Impact Assessment on applying late competition to future new, separable and high value projects in electricity and gas networks during the RIIO-2 period" we estimated the additional costs of extending competition into gas and electricity distribution as £1m. As this IA is only considering electricity distribution, we have reduced that figure to take account of electricity distribution-related costs only

4.7. We consider **tender costs** to relate to either Ofgem or the network licensee (depending on the late competition model) running and concluding the competition for a project. As for the pre-tender costs, we have only considered costs that would be additional to those the licensee would incur running tenders under the counterfactual. We have represented these costs as a percentage of project capex as we have seen from our OFTO regime that tender costs broadly rise in proportion to the size and capex of the project. Where Ofgem runs the competition (under the CADO approach) there will also be costs for the network licensee associated with providing information necessary for the competition. Where the network licensee (or an approved third-party) runs the competition (SPV model), there will also be Ofgem costs associated with our consideration of the suitability of the licensee's proposed tender documentation and delivery agreement, and our role in the subsequent SPV tender implementation. Finally, in relation to the SPV model we have also included costs to cover the role of contract management between the SPV and the network licensee over the course of the contract.

4.8. We therefore estimate tender costs as:

- Cost of running the late competition (for Ofgem or network licensee) between 0.5% and 1% of the capex of the project
- Additional Ofgem costs of between £0.5m and £1m per project, to cover instances where the network licensee runs the tender (SPV model)¹⁶
- Additional contract management costs of between £0.5m and £1m per project, to cover instances where there is a contract between an SPV and a network licensee (SPV model).

4.9. Bidders will incur costs when preparing bids, for example in engaging with the supply chain and undertaking due diligence. The successful bidder will also need to engage in the processes required ahead of taking over the project (such as further due diligence). Under our proposed late competition models, the winning bidder would recover those costs within

¹⁶ These costs vary as for example, we would need to undertake more work if the DNO's initial proposed tender documentation was substantially deficient. We would also expect to reduce costs over time as the model becomes business as usual. We consider that these costs are higher than the costs that would be faced by a licensee to provide information where Ofgem runs a competition, so have not included those costs here as to do so would be to double-count and overestimate the overall costs.

its bid tender revenue stream. Based on our experience of the OFTO regime we estimate the absolute total costs to the successful bidder to be included in the tender revenue stream as 2% of the capex of the project. Under the competition models set out in this IA, any **successful bidder costs** may be higher than under the OFTO regime as the bidder is required to put together bids to cover the construction period (as opposed to just the operational period).¹⁷ However, these total costs need to be offset against costs under the RIIO counterfactual, where successful bidders would also incur costs when the network licensee tenders for delivery of the project under its existing frameworks. Costs to unsuccessful bidders would remain with them and would not be passed on.

4.10. We therefore estimate that the additional costs for successful bidders associated with late competition models in comparison to the counterfactual would be:

- 1% of project capex at the low end.
- 2% of project capex at the high end.

¹⁷ Although we would expect these additional costs to be somewhat offset by lower costs relating to bidder due diligence than under OFTOs, given that the competition models do not require transfer of built assets

Table 4 – Summary of the additional competition model costs

	Low cost	High cost
Ofgem’s model ‘design’ costs for electricity distribution – one off cost (£m)	3.5	3.5
Pre-tender costs, per project (£m)	0.5	1
Additional tender costs (fixed), per project (£m)	1	2
Subt-total costs	£5m	£6.5m
Variable tender costs per project (expressed as % capex of project)	0.5	1
Successful bidder costs per project (expressed as % capex of project)	1	2
Sub-total costs, expressed as % capex of project	1.5%	3%
Total costs	£5m + 1.5% of project capex	£6.5m + 3% of project capex

4.11. **Interface costs** are incurred where network licencees interact with each other or other relevant parties to operate and maintain the network. Industry codes, standards and processes are already in place to manage interfaces between multiple parties. Assuming the effectiveness of these existing processes and given that we intend only to apply late competition models to new, high value and separable projects, we expect the number and

complexity of additional interfaces will be minimised. We therefore do not consider that the late competition models would lead to increased interface costs; however, we have carried out sensitivity analysis in Chapter 5 to ensure this eventuality is considered. Because we consider these costs as a sensitivity, we do not include them in the table above.

4.12. As part of our development of the CATO and SPV models in onshore electricity transmission, we've previously consulted on the possibility of an **upside only incentive for incumbent transmission licensees**, for taking forward the competition model. If included, this would represent an additional cost of competition. However, we haven't included any such costs in the above table as previous stakeholder responses were mixed and the case has therefore not yet been made for whether a) such an incentive would add benefit, or b) whether it would change incumbent licensee behaviour.

4.13. Finally, we have considered potential costs to the supply chain of introducing late model competition. We have not included any such costs as stakeholder responses to our previous consultations were mixed on this. On the one hand, some stakeholders suggested that the supply chain could incur additional costs due to the need to engage with more bidders and a lack of clear view on projects subject to competition. On the other hand, some stakeholders suggested that competition may increase the range of suppliers and that there would be a strong incentive for the suppliers to adopt more cost efficient practices.

Risk of project delays and non-delivery

4.14. For new high value projects, delay or cancellations of a project could result in considerable costs. The network licensee may incur higher construction costs, or indeed sunk costs in the case of non-delivery, and may incur higher constraint costs that are passed onto consumers. Where the project is required for a generator to export power, they will lose generation revenue if the project is delayed beyond the contracted date and the generation project is ready. Both the licensee and affected generators could incur increased financing costs where the risk profile of the project is perceived to increase.

4.15. Delay or non-delivery could occur for a number of reasons at different stages in a project's development depending on the nature of the project, independent of whether a late competition model is used. For example, there could be unforeseen ground conditions, planning consents may be delayed, associated generation projects may fall away or be delayed, or there may be major issues with contractors (eg insolvency) or other supply chain bottlenecks (eg lack of supply). These project-specific risks are inherent in the

development of new, separable and high value projects and need to be considered under both the counterfactual and the late competition models. For the purposes of this IA we have therefore only considered delay or non-delivery risks that are different under the late competition models from the counterfactual arrangements.

4.16. There are potentially new sources of delay or non-delivery risk due to the SPV and CADO late competition models - although these do not likely relate to the CPM.¹⁸ These relate to activities pre-tender, during the tender, and post-tender.

- **Pre-tender**, there is the time taken to finalise general design of the late competition model and associated documentation. There is also the time to develop any project-specific documentation. We consider that for 'projects in flight'¹⁹ this risk is mitigated by analysis we will carry out, for each project that meets the criteria for competition, as to whether the project should be delivered under a late competition model or under counterfactual arrangements. As part of that analysis for projects in flight, we intend to determine the risk of delay associated with the decision on delivery model on a project by project basis, considering the delivery timetable for that project and the timescales for our work.
- **During the tender**, there is the time taken to run the competition, and more specifically, the time that this takes relative to the counterfactual arrangements. There is also the risk that the tender is cancelled. For projects in flight we will consider the time taken to run the competition as part of the analysis referred to above in relation to pre-tender activities. We will mitigate the risk of a cancelled tender by ensuring the commercial and regulatory terms of the competition are appropriate and acceptable to the market before the competition commences.
- **Post-tender**, there is the time taken for the competitively-appointed party to deliver the project compared to the counterfactual arrangements of delivery by the incumbent licensee. There is also the risk that the competitively-appointed party does not deliver the project at all (eg if it walks away or becomes insolvent). For projects in flight, we will consider the time taken for the

¹⁸ This is because our processes for additional project-specific work under CPM are likely to be similar to the processes we apply under the counterfactual. Also, under the CPM there is no need for the procurement approach taken forward by the licensee to change from the counterfactual arrangements
¹⁹ ie projects that have been considerably developed at the point at which we introduce the late competition models

competitively-appointed party to deliver the project as part of the analysis referred to above in relation to pre-tender activities. We will also ensure that the regulatory and commercial framework for the competition models provides strong incentives on the competitively-appointed party to deliver on time. We will also ensure that the tender documentation and evaluation criteria require the appointment of a robust competitively-appointed party. Finally, as a contingency measure against non-delivery, we will ensure licensee of last resort mechanisms are in place.

4.17. For future projects subject to late competition models (ie projects that are either at early stages of development or not developed at all at time of introduction of competition models) we consider that the risk of delay is low as:

- We will have in place established arrangements for late competition, which will be clear to industry parties and can be factored into their planning
- We will have flexibility to run our processes in parallel with ongoing preliminary works, avoiding knock-on delays in project development.

Security of supply

4.18. We consider that the above arrangements in relation to delay and non-delivery will mitigate any additional risks to security of supply for new, separable and high value projects.

4.19. Furthermore, to address the risk that the competitively-appointed party does not construct or operate its project to an acceptable standard, we will ensure the tender process closely assesses the capabilities of bidders and the robustness of their proposals. Once appointed, competitively-appointed parties will have enforceable obligations regarding the maintenance of the project and will also have incentives in place (eg an availability incentive, amongst other possible incentives) to ensure the networks are providing a secure supply. We will also ensure that competitively-appointed parties are subject to relevant technical and system standards and codes.

5. Overall cost benefit assessment of late competition models

5.1. We have applied the costs of developing and introducing late competition models set out in Chapter 4 to the project scenarios set out in Chapter 2, in order to determine the overall costs of late competition models during RIIO-ED2 under a range of different project scenarios. This approach determines the level of benefits that would need to be achieved through the late competition models in order for the benefits to outweigh the costs, and it allows us to consider the introduction of late competition models in the electricity distribution network as a long-term regulatory approach.

Scenarios

5.2. We have tested the costs of developing and introducing late competition models against the five scenarios set out in Table 2, and summarised the results in Table 5.

Table 5 – Summary of modelling results for each scenario

Scenario number	Projects in the scenario	Assumed competition cost scenario	Costs as a percentage of capex (%)
1	1 x £100m	High	9.45
2	2 x £100m	High	7.75
3	1 x £250m	Low	3.25

Sensitivity test on interface costs

5.3. As set out in paragraph 4.12 in Chapter 4, although we do not expect there to be additional costs of competition relating to introducing new interfaces, we have run a sensitivity analysis below on additional interface costs of £3m per project for completeness of this IA. We consider that this represents a high cost assumption and that efficiencies in

management of interfaces would likely be made after the first competitions, reducing this cost for future competitions.

5.4. We have undertaken this sensitivity only for the 'single project' scenarios, as this would represent a 'worst case' scenario (ie highest cost of competition) where industry was unable to make efficiencies for subsequent projects. For this reason we have not run the sensitivity on scenarios 3 and 4 from Table 5.

5.5. The results of that sensitivity analysis is presented in Table 6.

Table 6 – Sensitivity analysis on interface costs

Projects in the scenario	Costs as a percentage of project capex (%)	Costs as a percentage of project capex (%)
	<i>No interface costs</i>	<i>Including interface costs</i>
1 x £100m	9.45	12.45
1 x £250m	3.25	4.45

Conclusions

5.6. In the scenarios that we have modelled, the cost of introducing late competition in in the electricity distribution sector is estimated at 3.25-9.45% of the value of projects subject to competition. For larger projects and pipelines, this cost typically falls to 3.25% or less of the total capex of the projects involved.

5.7. Our qualitative assessment of benefits highlights the potential for these costs to be outweighed by savings made in capital, operation and financing costs for each project. The OFTO regime has been estimated to have brought consumers net savings of 19-23% of the value of OFTO projects, when compared to regulated counterfactuals. Although a direct read across of the quantum of savings from the OFTO regime is not appropriate given that

the OFTO regime does not involve construction of projects,²⁰ we consider that information derived from the market through the OFTO regime is valuable, particularly if considered in conjunction with findings from other competitive regimes, as described in chapter 3.

5.8. We therefore consider that on balance, evidence suggests that the potential savings from introducing competition are likely to be above the costs we have modelled in this IA. Furthermore, the above analysis does not consider the likely wider benefits of introducing late competition in terms of providing price discovery and a wider set of benchmarks for our price controls, although this does not apply to CPM.

5.9. Finally, we also intend to carry out project-specific impact assessments nearer the time, as and when we decide whether to apply competition to projects that meet the new, separable and high value criteria.

²⁰ The OFTO competitions are 'very late' – they focus on financing and operational costs for offshore electricity transmission

6. Distributional effects of late competition models

6.1. In Table 7 below, we have considered distributional effects of the late competition models compared to the status quo RIIO arrangements.

Table 7 – Sensitivity analysis on interface costs

<p>Ofgem</p>	<p>Costs to set up, run, or facilitate late competition models are outlined in Chapter 4. These costs fall directly on Ofgem and are passed through to licensees and ultimately onto consumers through network charges on generators and suppliers.</p>
<p>Incumbent licensees</p>	<p>Any savings or additional costs from applying a late competition model to a project will be applied to the revenue the licensee recovers through their licence relating to that project. In line with the findings of this IA, we consider it more likely that the late competition models will drive savings, which will therefore lead to lower levels of costs recovered by licencees.</p> <p>The incumbent licensee faces additional costs to carry out its activities in relation to the competition, as set out in Chapter 4. We propose that additional efficient costs associated with these activities will be recovered by the licensee, either from the competitively-appointed party, or via their price control funding, depending on the timing and nature of the expenditure. The additional costs under either route will ultimately be recovered from consumers through network charges.</p>
<p>Bidders</p>	<p>We highlighted bidder costs in Chapter 4. These remain with the bidder, unless it is successful and is appointed as the competitively-appointed party, when it recovers these costs as part of its tender revenue stream. The</p>

	<p>tender revenue stream will be paid through network charges, ultimately from consumers.</p>
<p>Supply chain</p>	<p>Companies and individuals supplying goods and services in the construction and operation of projects subject to late competition may face increased costs from engaging with an increased number of parties, as they engage with bidders during the competition. However, the late competition models also likely benefit supply chain companies by widening business opportunities to projects beyond the procurement frameworks they currently have access to.</p>
<p>Generators and demand users of the system</p>	<p>Savings or additional costs from applying a late competition model to a project will be passed to generators and demand users of the system through network charges under the charging arrangements in place at the time. In line with the findings of this IA, we consider it more likely that the late competition models will drive savings, which will therefore be beneficial to generators and demand users of the system. There may be potential risks to generators of project delays; however, we expect these to be mitigated through our regulatory policies as set out in Chapter 4.</p>
<p>Consumers</p>	<p>Costs falling directly on Ofgem or incumbent licensees are recovered through network charges on generators and suppliers, who in turn will pass these network costs on to consumers.</p> <p>Savings or additional costs from applying a late competition model to a project will therefore be passed on to consumers. In line with the findings of this IA, we consider it more likely that the late competition models will drive savings, which will therefore be beneficial to consumers.</p>

	<p>We do not foresee any additional impacts of our decisions on vulnerable consumers as a subset of GB consumers.</p>
<p>Geographic distributional impact</p>	<p>The late competition models do not distinguish between geographical location of a project. New, separable and high value projects across Great Britain can be taken forward under the late competition models. We cannot say at this stage which projects in which locations are likely to progress, as this is dependent on changing system need and generation background.</p>
<p>Intergenerational equity</p>	<p>Under the late competition models the regulatory asset value of the projects will be fully depreciated after the conclusion of the construction and operational period. We currently expect the operational period to be 25 years, which compares to a 45-year depreciation period under RIIO (although this may change in future). Despite expected savings from the late competition models overall on an NPV basis, there is therefore a possibility that consumers may ultimately pay more on an annual basis for each project during the 25-year operational period. Ultimately, consumers will benefit significantly overall (ie over the 45 year period), and may pay significantly less during the construction period for the project.²¹</p> <p>We do not consider that there will necessarily always be a shorter regulatory depreciation period under late competition models than under the RIIO status quo. The current 25 year period under late competition models is a function of a combination of seeking the most competitive financing costs and widest range of bidders. We may determine that a longer (than 25</p>

²¹ This is because under the late competition models revenue is not typically paid during construction, while some revenue is typically paid under the RIIO 'status quo' arrangements

	<p>years) regulatory depreciation period is appropriate under late competition models in future if we conclude that financing markets and bidder appetite have changed such that a longer period would be priced more efficiently.</p> <p>We do not consider that the limited impact on intergenerational equity transfer that the late competition models may have justifies not pursuing the overall level of savings available.</p>
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