DRAFT IMPACT ASSESSMENT

Draft Impact Assessment on applying late competition to future new, separable and high value projects in electricity and gas networks during the RIIO2 period			
Division:	Systems and Networks	**Type of measure:**	Competition in electricity and gas networks
Associated documents:	RIIO-2 Sector Methodology consultation December 2018	**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 the benefits and costs to consumers and other parties of introducing late model competition to, or seeking to replicate competition in, the construction and operation of new, separable and high value electricity and gas network projects during the RIIO2 period.

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 the seeking to replicate competition in, into the delivery of new, separable and high value onshore electricity transmission projects. In our July 2018 RIIO2 Framework Decision, we outlined our intention to extend the role of competition into the other energy sectors (gas transmission, electricity distribution, gas distribution) where it is appropriate and provides better value for consumers.

This draft Impact Assessment (IA) considers the benefits and costs to consumers of applying 'late'[1] competition to future new, separable and high value[2] projects in electricity and gas networks during the RIIO2 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 and gas networks would be to lower bills for energy consumers.

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

Option 1: The preferred option - introducing competition to, or seeking to replicate competition in, the construction and operation of electricity and gas network projects during the RIIO2 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.

The incumbent network licensees would continue to deliver projects that are not new, separable and high value under the 'status quo' RIIO framework.

[1] By 'late competition' we refer to competition focused on the delivery (ie construction and operation) of projects
[2] £100m capex or above.

Option 2: in the event that option 1 is not implemented, continuation of 'status quo' RIIO arrangements for the delivery of new, separable, high value electricity and gas network projects during the RIIO2 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 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 and gas transmission and distribution. The models we consider under this option are:

- Late CATO (Competitively Appointed Transmission Owner)[3] build. Under late CATO build a 'preliminary works party' (most likely a networks licensee) would complete all necessary preliminary works for a new, separable and high value project. Ofgem would then run a tender to determine a CATO responsible for construction and operation of the project. The CATO would bid a 'tender revenue stream' to construct, own and operate the asset for a long-term operational period (currently expected to be 25 years).
- SPV (Special Purpose Vehicle). Under the SPV model, the incumbent network licensee would run a tender to appoint an SPV to finance and deliver a new, separable and high value project on the licensee's behalf through a contract in effect for a specified revenue period. The allowed revenue for delivering the project would be set over the period of its construction and a long-term operational period (currently expected to be 25 years).
- CPM (Competition Proxy Model). Under the CPM, Ofgem would utilise relevant benchmarks from other regimes, alongside other market information, to set a project-specific revenue for the incumbent network licensee that we consider would have eventuated from an efficient competitive process for construction and long-term operation (currently expected to be 25 years) of a new, separable and high value project.

Preferred option - Monetised Impacts

Business Impact Target Qualifying Provision	Non-qualifying (competition)
Business Impact Target (EANDCB)	Not relevant
Net Benefit to GB Consumer	See below
Wider Benefits/Costs for Society	N/A

[3] We refer to 'transmission owner' here in order to retain the previous CATO acronym – in practice we would likely change the name of the model when applying it to distribution assets.

In summary, our analysis shows that introducing late competition, or seeking to replicate competition, in the construction and operation of electricity and gas network projects that are new, separable and high value during the RIIO2 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. As well as delivering financing savings, the SPV and late CATO models have the potential to unlock additional savings for consumers, by driving savings in capital and operational expenditure. Our analysis shows that the cost of introducing late competition to the construction and operation of electricity and gas network projects that are new, separable and high value is estimated at 4.2 to 10.8% of the value of projects involved, depending on the number and size of projects subject to competition. The 10.8% cost figure results from only applying late competition to one £100m project during RIIO2. Under scenarios where more than one project is subject to competition, or where projects of £500m or above are subject to competition, the costs reduce to 4 to 5% of the value of projects involved. Our qualitative assessment of benefits highlights the potential for these costs to be outweighed by savings made in capital, operation and financing costs. 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. Our recent September 2018 impact assessment on the SPV model and CPM in the context of onshore electricity transmission estimated potential savings under central scenarios, of 4-19% for the SPV model and 10-12% for the CPM. We therefore consider that the potential savings from implementing option 1 are likely to be higher than the costs we have modelled, even when extra interface costs are added (for the purposes of running a sensitivity).

Preferred option - Hard to Monetise Impacts

The late CATO 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 draft IA set out in more detail the costs and benefits of introducing competition, or replicating competition, in the construction and operation of electricity and gas network projects that are new, separable and high value during the RIIO2 period. Chapter 6 sets out the distributional effects.

Key Assumptions/sensitivities/risks

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

Will the policy be reviewed? No	**If applicable, set review date:** N/A

Is this proposal in scope of the Public Sector Equality Duty?	No

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 and gas network projects that are new, separable and high value during the RIIO2 period	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 the relevant network sector. We would also need to determine which competition model to use for each project once the models had been developed further.
Option 2: RIIO 'status quo' arrangements	No change to RIIO2 outcomes.	This option represents the counterfactual of delivery through the prevailing price control by the relevant incumbent network licensee.

1. Introduction

1.1. Since 2009 we have successfully applied competition to significantly reduce the costs of offshore electricity transmission.[4] 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 July 2018 RIIO2 Framework Decision, we outlined our intention to extend the role of competition into the other energy sectors (gas transmission, electricity distribution, gas distribution) where it is appropriate and provides better value for consumers.

1.2. This draft IA considers the benefits and costs to consumers of applying various models of late competition to future new, separable and high value[5] projects in electricity and gas networks during the RIIO2 period, against a counterfactual of delivery through the prevailing price control by the relevant incumbent network licensee.

1.3. This draft IA has been published alongside the RIIO2 Sector Methodology consultation, available on our website.

Overview of the competition models considered in this document

1.4. This draft IA considers 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 and gas transmission and distribution.

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

1.6. The models we consider are set out on Page 3: late CATO build; SPV model and the CPM. We published information on late CATO build most recently in November 2016.[6] We published information on the SPV model and the CPM[7] most recently in September 2018. Further information on all competition models is on our website.[8]

1.7. This draft IA does not consider earlier models of competition. Our RIIO-2 Sector Methodology consultation contains more information on potential forms of early competitions.

[4] https://www.ofgem.gov.uk/publications-and-updates/evaluation-ofto-tender-round-2-and-3-benefits
[5] £100m capex or above.
[6] https://www.ofgem.gov.uk/publications-and-updates/quick-guide-cato-regime-november-2016
[7] https://www.ofgem.gov.uk/publications-and-updates/update-competition-proxy-delivery-model
[8] https://www.ofgem.gov.uk/electricity/transmission-networks/competition-onshore-transmission

Structure of this document

1.8. 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 and gas 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 and gas network projects that are new, separable and high value.
- Chapter 5 sets out our overall cost benefit assessment of introducing late competition, or replicating competition, in the construction and operation of electricity and gas 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 and gas 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 and gas network projects that are new, separable and high value, instead of the prevailing RIIO price control approach.

2.2. In the following sections we have set out:

- An overview of our general modelling approach for this draft 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 wide range of sectors and 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.

2.4. Instead, we have outlined scenarios to demonstrate the potential scale of costs of developing and introducing late competition models across electricity and gas 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 or on the sector in which it is applied - we consider total costs of developing and applying all the late competition models across each network sector (ie gas and electricity). We would expect to update this analysis once we have further developed the late competition models across each of the gas and electricity network sectors.

Project scenario modelling

Base project profiles

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

Table 1 – The three base projects

Project	Capex (£m)	Construction period (years)
A	100	2
B	500	3
C	1,000	5

2.7. We have chosen construction periods that are reflective of those we have seen in previous projects of those sizes.

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.[9]

2.9. Due to the larger nature of a £500 million capex project, we modelled this with a three-year construction period, again with capex spread evenly over that period. The £1 billion capex project was modelled with a five-year construction period, again with capex spread evenly over that period.

Pipeline scenarios

2.10. We have used the three 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. These scenarios are set out in Table 2.

Table 2 – Modelled pipeline scenarios

Scenario number	Projects in the scenario	Competition cost assumptions
1	1 x £100m	High
2	1 x £500m	High
3	1 x £1,000m	High
4	1 x £100m 1 x £500m 1 x £1,000m	High
5	4 x £500m	High
6	1 x £100m	Low

[9] 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.

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 draft IA.

Cost calculation method

Total costs

2.13. In each scenario, we have calculated each cost element in net present value terms (2018 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 (2018 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 draft IA.

Table 3 – Parameters

Parameter area	Description
Starting financial year	We have used the first financial year of RIIO2, 2021/22.[10]
Discount rate	We have used the Social Time Preference Rate (STPR) in line with HM Treasury's Green Book recommendations.[11]

[10] This is RIIO2's application to the ET, GT, and GD sectors. RIIO-ED2 will begin on 1st April 2023.
[11] https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent

3. Benefits of applying various models of late competition to new, separable and high value projects in electricity and gas networks during the RIIO2 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 and gas networks during the RIIO2 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 in a holistic competition seek to create innovative and cost-saving solutions in order to submit competitive bids. It also has 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 will be able to compare and benchmark, where applicable, proposed capital and operational costs with those that have 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 will bear down on 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 reflects the low operational rates of return that have been determined through competitive processes. Evidence from the OFTO regime has shown that long-term stable investments are attractive propositions to equity investors, which has driven the level of competition seen in the OFTO regime.

- The assumed ratio of debt to equity ("gearing") during the construction and operational periods of the project appropriately reflects the efficient levels expected to be delivered by the market for new, separable and high value projects. Evidence from the OFTO regime, interconnectors, and project-financed projects suggest that a higher gearing (ratio of debt to equity) than the notional value assumed in network price controls is more appropriate for new, high-value, separable infrastructure projects. As the market rates for debt are currently low and debt is normally cheaper than equity, the higher gearing would drive significant savings.

- A low cost of debt can be locked in for the length of construction, and then the full 25-year operational period of the project. This is opposed to the regular updating of debt and equity costs based on prevailing market conditions under RIIO and the cost of historical embedded debt under RIIO.

3.8. We have set out, in our July 2018 publication[12] on cost of capital ranges for new assets, 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.

Capital and operational cost savings (SPV and CATO approach 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 constructing and operating new projects, based on the funding requests submitted to us by the licensees. 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 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.

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

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] Further savings are expected soon from the latest round of tenders (Tender Rounds 4 and 5).

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 capital[14] delivered by competing the Thames Tideway project demonstrates the potential for competition to drive consumer benefits under a late type tender model in GB.

3.16. The Thames Tideway project is a relevant example of a tender 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.

---

[13] https://www.ofgem.gov.uk/publications-and-updates/evaluation-ofto-tender-round-2-and-3-benefits
[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 and gas networks during the RIIO2 period

Introduction

4.1. As competition models represent a movement away from the current RIIO1 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.

4.2. These costs and risks are based on our experience with the OFTO regime and our Extending Competition in Transmission (ECIT) project. We have treated costs as the incremental costs over the counterfactual.

Costs of introducing and applying the models

4.3. At this stage we do not consider any variations in costs between different network sectors. We would expect to update this analysis once we have further developed the late competition models across each of the gas and electricity network sectors. We have also set out a single set of costs below that does not take account of differences between the competition models. We consider that this approach is appropriate at this stage of 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.

4.4. 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 draft IA, we have mostly used the high costs as a 'worst case' scenario.

4.5. In summary, we estimate the cost of implementing late competition models, the first time a late competition model is implemented, would be from £5.5m plus 1.5% of project capex, to £7m 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 £4m would have already been accounted for. 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.

4.6. **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. We have based these costs on previous costs (£3m) we have set out for development of late competition models in onshore electricity transmission. However, we have added costs (£1m) to reflect the additional costs of optimising the late competition models for use in electricity distribution and gas transmission and distribution. For the purposes of this draft IA, we have assumed that we undertake work to implement late competition in all four sectors prior to the start of the RIIO2 price control. We consider that much of the previous work in onshore electricity transmission is likely to be capable of being used for late competition models in other sectors.

4.7. **Pre-tender costs** 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[15] 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.

4.8. 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 (Offshore Transmission) that tender costs broadly rise in proportion to the size and capex of the project. Where Ofgem runs the competition (under the CATO 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.

4.9. 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;[16] and

- Additional Ofgem costs of between £0.5m and £1m per project, to cover instances where the network licensee runs the tender (SPV model).[17]

---

[15] This figure is different from the £0 used in our September 2018 IA on competition in onshore electricity transmission as we agreed with comments raised by one respondent to our September 2018 IA that costs would be higher than under the counterfactual arrangements, even in a low cost scenario.

[16] These figures are different from the 0% to 0.5% figures used in our September 2018 IA on competition in onshore electricity transmission as we agreed with comments raised by one respondent to our September 2018 IA that costs would be higher than under the counterfactual arrangements.

[17] These costs vary as for example, we would need to undertake more work if the TO'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

- Additional contract management costs[18] 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).

4.10. 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 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 draft IA, **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).[19] 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.

4.11. 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.

costs.

[18] We referred to these as 'ITA' costs in our September 2018 IA on competition in onshore electricity transmission

[19] 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 all sectors – one off cost (£m)	4	4
Pre-tender costs, per project (£m)	0.5	1
Additional tender costs (fixed), per project (£m)	1	2
Sub-total costs	**£5.5m**	**£7m**
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	**£5.5m + 1.5% of project capex**	**£7m + 3% of project capex**

4.12. **Interface costs** are incurred where network licensees 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.

4.13. Finally, 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 stakeholder responses to consultations 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.

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. The System Operator may incur higher constraint costs on behalf of 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 would need to be considered under both the counterfactual and the late competition models. For the purposes of this draft 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 CATO late competition models - although these do not likely relate to the CPM.[20] 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'[21] 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

[20] 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
[21] ie projects that have been considerably developed at the point at which we introduce the late competition models

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 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 incentive 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; and

- 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 RIIO2 under a range of different project scenarios. This approach determines the level of benefits that would need to be achieved through the 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 networks sectors as a long-term regulatory approach.

5.2. As set out in Chapter 2, our overall cost benefit assessment does not consider material variations across network sectors at this stage but we would expect to update this analysis once we have further developed the competition models across each of the gas and electricity network sectors. Our assessment also doesn't consider variations in competition models - we consider total costs of developing and applying all the competition models.

Scenarios

5.3. We have tested five scenarios in this draft IA, and summarised the results of those scenarios 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	10.8
2	1 x £500m	High	4.81
3	1 x £1,000m	High	4.18
4	1 x £100m 1 x £500m 1 x £1,000m	High	4.27
5	4 x £500m	High	4.16
6	1 x £100m	Low	7.58

Sensitivity test on interface costs

5.4. 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 draft 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.

5.5. We have undertaken this sensitivity only for the 'single project' scenarios, as this would represent a worst case scenario where industry was unable to make efficiencies for subsequent projects.

5.6. 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 (%)** *No interface costs*	**Costs as a percentage of project capex (%)** *Including interface costs*
1 x £100m	10.8	13.65
1 x £500m	4.81	5.37
1 x £1,000m	4.18	4.45

Conclusions

5.7. In the scenarios that we have modelled, the cost of introducing late competition in all of the networks sectors is estimated at 4.2-10.8% of the value of projects subject to competition. For larger projects and pipelines, this cost typically falls to 4-5% of the total value of the projects involved.

5.8. 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 from the OFTO regime is not appropriate given that the OFTO regime does not involve construction of projects,[22] this provides a strong indication that late competition for new, separable and high value projects in networks sectors can bring significant savings.

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

Our recent September 2018 impact assessment on the SPV model and CPM in onshore electricity transmission estimated potential savings, under central scenarios of 4-19% for the SPV model and 10-12% for the CPM. We therefore consider that the potential savings are likely to be well above cost thresholds we have modelled, and also above those costs we have modelled in the sensitivities that consider high interface costs.

5.9. 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.

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

Ofgem	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.
Incumbent licensees	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 draft 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 licensees. 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.
Bidders	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 tender revenue stream will be paid through network charges, ultimately from consumers.
Supply chain	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.

Generators and demand users of the system	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 draft 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.
Consumers	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. 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 draft IA, we consider it more likely that the late competition models will drive savings, which will therefore be beneficial to consumers. We do not foresee any additional impacts of our decisions on vulnerable consumers as a subset of GB consumers.
Geographic distributional impact	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.
Intergenerational equity	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.[23]

[23] 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

	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 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. 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.