Investment Decision Pack

NGET A7.06 Facilitate Competition (Pre-consents)

December 2019

As a part of the NGET Business Plan Submission

Justification Paper Load Related – Facilitate competition (pre-consents)			
Primary Investment Driver	Facilitate competition by gaining timely consents for contestable projects with a clear driver to proceed (i.e. either a signed customer connection agreement with the work identified, or NOA *proceed* recommendation from ESO); reducing consumer exposure to future constraint costs by progressing projects		
Reference	NGET_A7.06 Facilitate competition (pre-consents)		
Location in main submission narrative	Chapter 7 – *Enable the ongoing transition to the energy system of the future* Section 5.2 (i) *Facilitate competition by highlighting projects meeting contestability criteria, consenting contestable projects and protecting consumers in incumbent delivery*		
Cost	£181.5m		
Delivery Year(s)	2021 – 2026		
Reporting Table	B series tables and totex cost matrix tables		
Outputs for RIIO T2	Consents achieved for four defined projects (meeting contestability criteria and having an existing NOA proceed signal): Eastern Link 1 & 2, South Coast Reinforcement and Central Yorkshire Reinforcement.		
Spend Apportionment	**T1**	**T2**	**T3**
	N/A	£181.5m	N/A

**All costs are in 18/19 prices, unless otherwise stated.*

Contents

Executive Summary

As Transmission Owner in England & Wales, we can help to both enable the transition to a low carbon economy and minimise the cost to consumers by investing in network capacity where it reduces overall system costs and facilitating competition in the provision of that capacity. This paper sets out our proposals to consent projects that have been shown by the ESO to lower overall system costs and can be competed under the *Late Competitively Appointed Transmission Owner (CATO)* model for competition.

We remain committed to facilitate competition under an *Early CATO* model as we believe this is likely to lead to the best outcomes for consumers. We therefore continue to proactively participate in the ongoing development work, led by the Electricity System Operator (ESO), required to enable implementation of this regime. In the interim, we accept that a *Late CATO* model may be required for projects that meet late competition criteria outlined by Ofgem (>£100m, new and separable) and have been given a '*proceed'* recommendation through the ESO's Network Option Assessment (NOA) process. This is to ensure that projects can progress and avoid the risk of consumer exposure to unnecessary constraint costs. To facilitate a competition for these projects we have not included any post-consenting costs in our business plan for the T2 period.

We are proposing a new output for the T2 period, a consented project, and a baseline allowance of £181.5m to enable the development and consenting of four projects that meet late competition criteria. Each of these projects has been given a proceed recommendation through the in the ESO's NOA 2018/19 (and in prior years): (1) Eastern Link 1 Project (joint development with SPT), (2) Eastern Link 2 Project (joint development with SSE), (3) South Coast Reinforcement Project, and (4) Central Yorkshire Reinforcement Project.

The forecast cost of £181.5m for achieving consents is based on our experience and the cost to date of taking projects through this process. It considers the different focus on activities required for different project types, including onshore projects requiring Development Consent Order and offshore projects that require sub-sea surveys. We have included forecast efficiencies, based on what we have learned in the T1 period, ensuring our baseline proposals deliver outputs at a lower cost on average in T2.

Other options, with varying levels of expenditure, delivery dates and risk levels have been considered, each of which would impact the overall benefits case for delivery of the project. These options were discounted because engagement with the ESO on this topic has indicated that a 12-month delay for delivery of one of the Eastern Link projects could result in additional constraint costs of >£200m per annum across the range of FES scenarios.

Risks around an inability to deliver forecast efficiencies, significant scope changes / project terminations and delays due to stakeholder opposition are highlighted and can be mitigated through an iterative approach to improving our process, robust strategic optioneering and risk-based consultation. An Uncertainty Mechanism (UM) is proposed for any additional projects that require development in RIIO-T2, in response to a NOA *proceed* recommendation or a customer connection agreement, that are not in the baseline. This will also deal with efficiently incurred expenditure for projects that are terminated or paused through the period, either as a result of customer changes or a change in recommendation through the NOA process.

1. Introduction and need case

Government legislation for net-zero 2050 targets will require us to accelerate the decarbonisation of the economy. As the Transmission Owner (TO) in England & Wales, we can help to both enable this transition and minimise its cost for consumers. Part of how we do this is by investing in transmission network capability where it reduces the overall cost of the transmission system and by facilitating competition in the provision of transmission network capability. The focus of this paper is on our proposal to deliver consented projects that lower overall system costs and can be competed under a *Late CATO* model.

Future need for transmission boundary capability

The Committee on Climate Change (CCC) indicates that a further 50GW of renewable generation could be required to meet our decarbonisation targets; more than doubling the levels of renewable capacity connected in 2019. Whilst some will be distribution connected, results of the Round 3 CfD allocation re-affirms the significant role offshore wind will play in meeting targets. In parallel the Electricity System Operator's (ESO) assessment of future interconnection capacity indicates a more than trebling of the 5GW currently connected would be an economic level of interconnection for the GB network. This implies transmission network capacity requirements on the wider network are set to increase in certain regions, as low marginal cost, low carbon electricity flows from where it is produced to where it is consumed. Without timely investment in network boundary capability (known as 'wider works' in the regulatory framework) it is likely that consumers would face unnecessary increases in constraint costs (see side-bar on following page for description), increasing the overall cost of the transmission system. This also means net-zero targets could be more difficult to achieve as the output of renewable generation would be overly restricted.

The legally separate ESO undertakes an annual process with stakeholders, including TOs, to establish (i) a range of plausible future energy outcomes through the Future Energy Scenarios (FES), (ii) future transmission network capability requirements through the Electricity Ten Year Statement (ETYS), and (iii) indicating optimal network investments, their timing and suitability for competition through the Network Options Assessment (NOA), as shown in Figure 1, below.

Figure 1 – Annual ESO process (yellow) and key inputs (blue)

As part of the NOA process, TOs develop and submit network reinforcement options (capability, cost, system access requirements and earliest in service date) to meet future network capability requirements. The ESO, through the NOA process, then undertakes economic analysis, considering the optimal balance between constraint costs and network investment across the FES scenarios. A 'least worst regret' approach is subsequently used to recommend whether the cost of maintaining the delivery date for a given investment is in consumers' interest. Finally, the NOA report highlights whether a given project meets the criteria for *Late CATO* competition (>£100m, new and separable).

Our baseline business plan for the T2 period contains proposals to invest £507m in projects that do not meet competition criteria. This investment will deliver 22.5GW of additional boundary capability, indicated as being required through the ESO's NOA process, and saves consumers an estimated £250m/annum in avoided future constraint costs (see *Chapter 7, Section 5.1* of main narrative and *NGET_A7.02 Incremental Wider Works* justification paper).

Facilitating competition in transmission

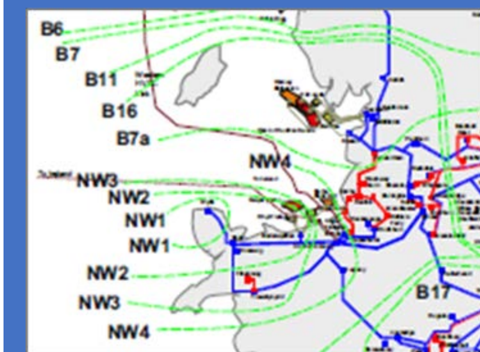
We are committed to facilitate competition under an *Early CATO* model, which we believe is likely to lead to the best consumer outcomes. We continue to proactively participate in ongoing work, led by the Electricity System Operator (ESO), required to enable implementation of this regime. In the interim, we accept that a *Late CATO* model may be required for projects that meet late competition criteria outlined by Ofgem (>£100m, new and separable) and have been given a '*proceed'* recommendation through the ESO's Network Option Assessment (NOA) process. This is to ensure that projects can progress and avoid the risk of consumer exposure to unnecessary constraint costs. To facilitate a competition for these projects we have not included any post-consenting costs in our business plan for the T2 period.

The need to progress with pre-consenting work

The ESO's NOA 2018/19 indicated four projects that should *proceed* and that also meet the criteria for late competition (1) Eastern Link 1 Project (joint development with SPT), (2) Eastern Link 2 Project (joint development with SSE), (3) South Coast Reinforcement Project, and (4) Central Yorkshire Reinforcement Project. Figure 2, below, shows the ESO's assessment of these projects against each of the FES scenarios. This shows that three of the four projects are optimal (i.e. the present value of future constraint cost benefits is greater than the present value of the cost of the network investment) across all 4 FES scenarios, whilst one is optimal in three of the four FES scenarios. The NOA also

TRANSMISSION SYSTEM BOUNDARIES AND CONSTRAINTS

To assess network capability requirements, notional ***transmission system boundaries*** that divide the network into sections interconnected by transmission circuits are used to assess whether forecast future power flows can be accommodated. Example boundaries in the north west are shown, below.



TOs are obliged to plan their network in accordance with the Security and Quality of Supply Standards (SQSS), which defines how the required capability of a boundary is calculated.

When a boundary has insufficient capability to accommodate forecast power flows it is necessary for the ESO to restrict these flows by paying generators or flexibility providers to reduce output in one area and increase output in another to maintain the balance of supply and demand.

These costs of ESO intervention, over and above where the market has settled, are known as ***constraint costs***. A certain level of constraint costs is a normal characteristic of an economic system, but insufficient boundary capability can lead to an increased overall cost to consumers.

Constraint costs can be a considerable annual cost, in the range of hundreds of millions of pounds (e.g.~£680m for 2018/19 according to the ESO).

indicates that all projects are required (the placement of the scenario colour) at their earliest in service date (lead time shown in grey), which is why they have been given a *proceed* signal.

Figure 2 – NOA assessment of projects with 'proceed' that are new, separable and >£100m

Future energy scenario: TD CR CE SP

Project	Est. total project (£m)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Eastern Link 1	[redacted]											
Eastern Link 2	[redacted]	Lead time to earliest in service date										
South Coast	[redacted]											
Central Yorkshore	[redacted]											

Figure 2 also shows an estimate of the total project cost and the present value of future constraint cost savings across FES scenarios (estimated from outputs of the NOA process). This demonstrates the value of these projects to consumers and the potential impact of a delay in progressing with pre-consenting work.

Large projects such as these, involving new routes, present a significant engineering, as well as environmental and consenting, challenge as they often require a Development Consent Order (DCO) and/or Offshore Consents. As a result, these projects typically have long lead times of 7 to 10 years.

For the T2 period, we propose to use our experience of effectively working within the relevant legislative frameworks to consent these projects so that they are ready to be contested through a *Late CATO* model. To do this **we are proposing a new output, a consented project, and a baseline allowance of £181.5m to deliver it for the four projects identified.**

Scope of pre-consenting work

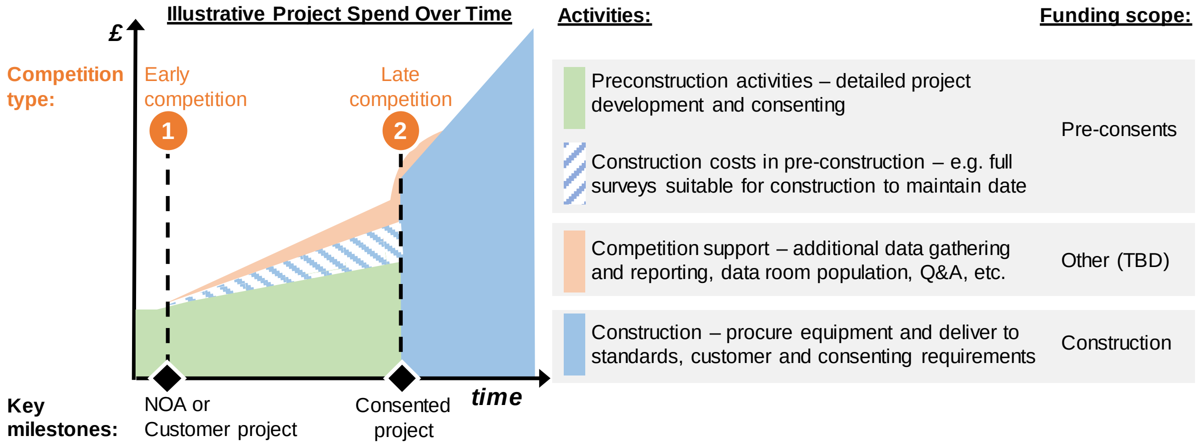
In RIIO-T1, classification of activities required to deliver projects has typically been categorised as either '*pre-construction'* or '*construction'*. Examples are provided in Table 1, below.

Table 1 – Typical pre-construction and construction activities

Pre-construction activities	Construction activities
• Activities which contribute to defining scope • Providing information on which to identify and develop the proposed reinforcement (optioneering, technology selection, routeing, cost estimating etc.) • Consultation and stakeholder engagement • Outputs used for the Environmental Impact Assessment, including surveys • Land referencing • Outputs required to obtain planning and consents • Negotiation and securing options on land rights • Legal costs related to securing planning, consents and land rights • Examination hearings • Programme scheduling • Preparation of technical specifications for cost tenders	• Activities which relate to the constructability of the solution to be delivered • Outputs to discharge planning and consent conditions and requirements • Land and property purchases, including legal costs • Wayleaves, easements and surveys for construction land access, including legal costs • Continuing surveys beyond the requirements for planning and consents • Procurement of assets and materials • Detailed construction information • Temporary Works • Implementation of measures to mitigate impacts and deliver 'Net Gain'

In the timeline of a project, pre-construction and construction activities can overlap for a considerable period. In order to deliver the newly defined consented project output, which occurs at a specific milestone in the project timeline, some activities that would typically have been considered construction in the T1 period would need to take place prior to achieving consents in order to minimise the overall cost of the project. This is illustrated in Figure 3.

Figure 3 – Scope of pre-consents



We propose that all efficient activities up to achieving consents should be funded ensuring that, for example, one set of surveys can be undertaken that are suitable for both consenting and construction to minimise re-work and overall costs. Depending on the design of the *Late CATO* model, we have also identified potential competition support costs that incumbent TOs may have to incur. We have not included these costs in our proposal and assume that they would be funded elsewhere, if required.

2. T1 experience and learnings

Over the last decade of operating under the Planning Act 2008, we have learned a great deal and have been able to refine our approach. We were amongst the first organisations to take large infrastructure projects through the process, and have therefore improved our approach as we have learned to achieve an effective balance between making our consents process as efficient as possible (i.e. by reducing costs, project timescales and the work undertaken) while ensuring we address the needs of our stakeholders and meet requirements as detailed in law so our planning applications are accepted for examination and consent is granted.

We learn from each new project that is developed through our Network Development Process (see Appendix 1 for an overview) and have adapted this process for major projects, to ensure that we continue to deliver what is required for our customers and stakeholders, given the scale and potential impact of the infrastructure required.

RIIO-T1 cost of achieving consents

We have developed several large projects over the course of the RIIO-T1 period. Table 2 shows a summary of recent projects with significant pre-consenting work. Cost to consents has not historically been routinely categorised and recorded in this way (due to the focus on pre-construction vs. construction), but we believe the costs in Table 2 represent a very good estimate of the historic costs to achieve the relevant consents.

Table 2 – Summary of recent projects with pre-consenting work

Project	Route length (km)	Project cost (£m)	Cost to consent (£m)	Status	Consent date	Consent £m/km	Consent % total	Notes
Western HVDC	[redacted]	[redacted]	[redacted]	Constructed	2012	0.22	3.1%	Sub-sea cable; no DCO
					Average (offshore)	0.22	3.1%	
Hinkley C (Hinkley - Seabank)	[redacted]	[redacted]	[redacted]	Consented	2016	2.14	11%	
Canterbury - Richborough	[redacted]	[redacted]	[redacted]	Constructed	2017	1.05	19%	
Bramford - Twinstead*	[redacted]	[redacted]	[redacted]	In progress	Not yet achieved	1.40	15%	
Horizon (North Wales)	[redacted]	[redacted]	[redacted]	Terminated	Not achieved	1.43	13%	DCO app made but withdrawn following termination
Moorside (NWCC)	[redacted]	[redacted]	[redacted]	Terminated	Not achieved	0.53	3%	Outlier; early termination
					Average (onshore)	**1.13**	**12.3%**	
					Average (onshore excl. Moorside outlier)	**1.50**	**14.6%**	
					Average (offshore + onshore excl. Moorside)	**1.25**	**12.3%**	

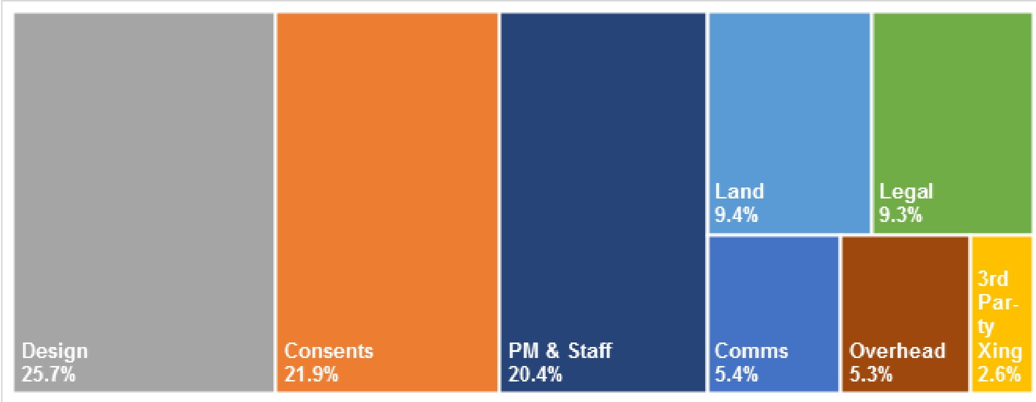
*excludes abortive costs from delays in Sizewell C Connection

Some of these projects have been consented (and constructed), whilst others are still in progress or have been terminated. The majority in Table 2 provide a representative estimate of the cost of achieving consents in the T1 period. Costs can vary considerably from project to project for a number of reasons including: consenting regime, route length, terrain, population density and whether or not there is an offshore element. This table also shows clear differences in costs depending on whether the project has fully progressed to achieving consents.

The Moorside project should be considered an outlier because it terminated relatively early in the project (i.e. compared to Horizon, where a DCO application was made). The Western HVDC link is also different, in that it did not require a DCO, but did require sea-bed surveys and marine consents. Across all these projects the average cost to consent is £1.25m/km, representing 12.3% of the total project cost if Moorside is excluded, which is more representative of the cost of consenting in the T1 period.

Figure 4, below, shows the relative breakdown of pre-consent costs for the average T1 project by activity. The dataset available for this analysis was limited as we have not historically captured costs in this way. It shows that design, consents and project management / staff are the largest cost areas followed by land and legal. Land and legal can also be amongst the most variable costs. Third party crossings (3rd Party Xing), assessment, design, and mitigation of any impact our project has on other parties, has historically been the lowest cost area.

Figure 4 – Breakdown of pre-consenting costs by activity for average T1 project



Lessons learned from consenting projects under the Planning Act 2008 (i.e. DCO projects)

Key lessons learned from our experience, allowing us to both deliver for our stakeholders and continue to provide value for consumers, are set out below.

Development of this kind of infrastructure will rarely gather public or local political support, and we are considering this more proactively in the development of our stakeholder engagement strategies from project inception. We continue to evolve our approach to the **production of communication and consultation materials** to ensure they are sufficiently detailed, yet accessible for the broad range of stakeholders who may engage with them. We have also improved our **customer engagement approach and customer intelligence** that we hold to ensure we progress in a way which is reflective of our confidence in the project progressing and taking appropriate action where we see a customer is delayed or likely to terminate.

We now have a better **understanding of the requirements of different stakeholders in** the process, in particular the relevant planning authority, and we are better informed as to how we manage this to ensure we receive responses to the agreed timelines. We are also considering the extent to which we **fix elements of the design** in our planning consents, to ensure we have the right balance of certainty and clarity of design while maintaining sufficient flexibility in delivery.

We have reviewed how we **more effectively use public consultations** and when is the most appropriate stage in the project to hold them. This is to ensure we have effective and meaningful public consultation that will enable us to take onboard feedback in a timely way, while also ensuring we do this when we have sufficient certainty over the requirement for and scope of a project, ahead of submitting our application. Our experience suggests this may require **a different, more flexible approach for different types of project**, for example, considering the scale of the infrastructure being developed or the sensitivity of local stakeholders to the development.

We continue to identify ways in which we can look to reduce **project management and overhead** costs, while still ensuring there is sufficient capability and resource in place to deliver projects in a safe and timely way. We have changed how we manage projects in the earliest phases and reviewed how we manage optioneering and associated consultation for these types of projects as a result. We are also **adopting the use of technology** such as Geographic Information System (GIS) data systems, SharePoint and file sharing systems to maximise collaboration and reduce travel time and overhead costs. We have also identified areas where we believe we can **reduce reliance on legal review and approval of some required documents** to reduce our legal costs, and contractually incentivise our suppliers to be more proportionate.

In summary, the above key learning points have allowed us to ensure we have a proportionate, risk based process, with better clarity and focus on required outputs and with spend focused on those activities which deliver those outputs or mitigate project risk. The efficiencies gained from these learnings are directly factored into the cost of delivering our T2 proposals.

3. T2 proposals

We propose to consent the four projects identified in the ESO's NOA process as both suitable for competition and suitable to *proceed*, ready to be contested through a late CATO model.

Options considered for our RIIO-T2 Approach

In considering our approach for RIIO-T2, we considered a number of options:

1. Pause these projects until the Early Competition Model has been developed.
2. Undertake pre-construction activities only, in line with the RIIO-T1 definition of pre-construction.
3. **PREFERRED** - Progress each project to consents, efficiently incurring pre-construction and construction spend as required.
4. Include funding to deliver the entire project in our baseline plan.

The **first option** was discounted as the unnecessary constraint costs that would be incurred as a result of delaying any progress on these projects would not be in the interest of consumers. The work the ESO are currently leading to develop the *Early CATO* model is not expected to conclude until early 2021, at which point Ofgem will make their decision on how to proceed. Therefore, this approach would result in circa 18 months delay minimum to understand the early competition approach Ofgem wishes to pursue, followed by a tender period to appoint the preferred bidder for the project. It was not considered reasonable to follow this approach given the length of delay that would occur.

The **second option** was considered as it would be more aligned to the split and definition of activities in the RIIO-T1 period. However, our experience has shown that it will typically be more efficient and sometimes necessary, in terms of overall costs and programme, to undertake some construction activities in parallel with pre-construction. This option was discounted on the basis it results in unnecessary project costs which provide no additional benefit to the overall project delivery and may even result in delays in the construction phase while additional activities are completed.

Our **preferred approach** is to complete all activities required to achieve consents on these four projects as we believe this creates the best balance between progressing with the project, and ensuring we reduce constraint costs in a timely way, while also enabling the application of competition which may introduce efficiencies into the latter stages of the project.

The **fourth option**, of including all England & Wales project costs in our baseline plan was discounted despite the strong need case for these projects. Taking this approach would not be consistent with our commitment to facilitating competition as it would not allow for a *Late CATO* tender process.

Description of contestable projects with a NOA proceed signal

The following projects are those that will be consented under our RIIO-T2 proposals, and therefore require baseline pre-consents funding:

- Eastern Link (1) Project (joint development with SPT)
- Eastern Link (2) Project (joint development with SSE)
- South Coast Reinforcement Project
- Central Yorkshire Reinforcement Project

The four projects identified are required to ensure economic operation of the network as a result of supply and demand changes, particularly as a result of the connection of renewables and additional interconnection capability. These strategic investments are therefore an important step as we progress towards net zero for 2050. They will help ensure that we can fully utilise the low-carbon sources connected to the network, get power to the areas where it is required and minimise overall costs to the consumer. A summary of these projects is provided in Table 3, below.

Table 3 – Summary of driver for projects to be consented

Project Title	Driver for Project
Eastern Link Projects **(2 x HVDC Links)**	Given the forecast growth in low-carbon sources, there will be a significant capacity shortfall, particularly across the boundary between Scotland and England, by the mid-late 2020s. The Eastern Link projects are required to facilitate the economic connection of low-carbon sources in Scotland, particularly onshore/offshore wind and interconnection to the continent. These projects ensure that power generated in Scotland can be transferred further South, where it will be consumed and demand requirements are much greater. There may also be scenarios where the Eastern Link supports power to flow into Scotland when renewables are not generating sufficient levels of power to meet regional demand. The first Eastern Link project is shorter, cheaper and quicker to deploy than the second and gives benefits by alleviating system congestion earlier. The second Eastern Link project is longer and has a later delivery date, but provides benefit by bringing power further south closer to where it is required.
South Coast Reinforcement	The South East of England is an area where the network requirements are heavily impacted by the addition of interconnectors to the continent, as well as the connection of other generation sources locally. As we see these greater volumes of interconnection over the next decade come into the South East, there is a need for additional capacity to ensure the network can be operated economically and is sufficiently stable under dynamic operating conditions. In the mid-late 2020s and into the 2030s we see large constraint costs forecast when the interconnectors are exporting (i.e. we are exporting power from GB to Europe).
Central Yorkshire Reinforcement	The Central Yorkshire Reinforcement reinforces boundaries in the northern area of England and becomes essential to ensure the northern part of the network can be operated economically, particularly after the connection of the first Eastern Link project into the North of England in 2027. Further offshore generation and interconnection are expected to connect into the North East of England through the 2020s. Without the Central Yorkshire Reinforcement, there would be insufficient capacity to ensure power can be delivered further south to where it would be consumed.

As illustrated in Figure 2, these investments are required across all FES scenarios (the only exception is for the Central Yorkshire Reinforcement, which in NOA 2018 was not required against the Consumer Evolution scenario).

Scope of pre-consenting

All of these projects are currently early in the 4.2 phase of our Network Development Process (NDP - as described in Appendix 1). The purpose of this stage is to identify a full range of strategic options that satisfy the driver (whilst complying with industry codes and standards) and to select a preferred strategic option by identifying with more certainty the scope, programme, costs and strategic constraints associated each of these potential options.

An Options Appraisal process is undertaken to identify a preferred strategic option. For major transmission projects, there will typically be a significantly larger number of options considered than for smaller-scale investments given the geographical spread of potential solutions. This is therefore a longer and more detailed process to ensure that all credible alternative options are considered and the preferred option justified and in consumers' interests. As planning consents will be required, this stage is critical to ensure there is sufficient justification and evidence for the chosen strategic option. Any information generated in this stage will be subject to extensive scrutiny through subsequent consultation and examination processes.

As work is ongoing to confirm the preferred option and project scope for each project under consideration, our proposal for the T2 period is based on the project scope that was identified, submitted and recommended to proceed as part of the most recent NOA process (published early in 2019). This is set out in more detail in Table 4, below. Progressing based on this scope would not preclude the identification of an alternative approach to meeting requirements in future.

Table 4 – Project scope for projects to be consented

Project Title	Project Scope (Indicative locations, subject to detailed assessment and consultation)	Earliest In Service Date (EISD)	NDP Phase
Eastern Link 1	• 2GW Offshore HVDC Link from Torness (SPT network) to Hawthorn Pit • Voltage Source Converter (VSC) technology and XLPE insulated cable, bipole arrangement • New Substation build at Hawthorn Pit • Circa [redacted] km route length • Town and Country Planning only (non-DCO)	2027	4.2
Eastern Link 2	• 2GW Offshore HVDC Link from Peterhead (SHET network) to Drax • Voltage Source Converter (VSC) technology and XLPE insulated cable, bipole arrangement • Substation Extension at Drax • Circa [redacted] km route length • Town and Country Planning only (non-DCO)	2029	4.2
South Coast Reinforcement	• New 400kV overhead line transmission route from Sellindge to Longfield Tee • Circa [redacted] km route length • DCO required	2026	4.2
Central Yorkshire Reinforcement	• New 400kV overhead line transmission route in Yorkshire from Eggborough to Osbaldwick • Circa [redacted] km route length • DCO required	2027	4.2

Investment costs for overhead line projects are based on our cost book, described previously. The Eastern Link project costs are based on cost profiles previously agreed with the Scottish TOs given combined intelligence based on experience of similar projects. To support with phasing of costs on all projects, we have assessed a 'standard' spend profile for a typical project and reviewed our historic spend on similar projects to benchmark the costs and phasing of particular activities which are undertaken as part of the consenting process.

We require the following funding to ensure we can develop each project up to the end of the 4.3 phase in each case. This will require £181.5m of funding across the four projects to undertake all engineering and consenting activities required. All projects are expected to achieve consents within the RIIO-T2 period.

Table 5 – Cost of delivering consented projects in the T2 period

Project	Route length (km)	Est. Project cost (£m)	Cost to consent (£m)	T1 spend (£m)	T2 proposal (£m)	Expected Consents	Consent £m/km	Consent % total	Notes
Eastern 1	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	2023	0.24	3.1%	Sub-sea
Eastern 2	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	2023	0.14	3.0%	Sub-sea
						Average (offshore)	0.19	3%	
						T1 average (offshore)	0.22	3.1%	
South Coast	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	2024	1.10	10.6%	onshore
Central Yorkshire	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	2023	1.21	16.6%	onshore
				Total T2 proposal (rounded)	**181.5**				
						Average (onshore)	1.15	13.6%	
						T1 average (onshore)	1.5	14.6%	

While the strategic optioneering phases of these projects has not yet concluded to refine the preferred options, the activities outlined (and associated costs) in this section will be required and remain valid as long as the engineering scope and consenting approach are broadly in line with those outlined. By applying our T1 learning, as described above, to these four projects we forecast that we will be able to deliver consented projects in the T2 period for less on a £/km basis. This efficiency has been included in our baseline funding proposal of £181.5m

<u>Onshore - South Coast Reinforcement and Central Yorkshire Reinforcement</u>

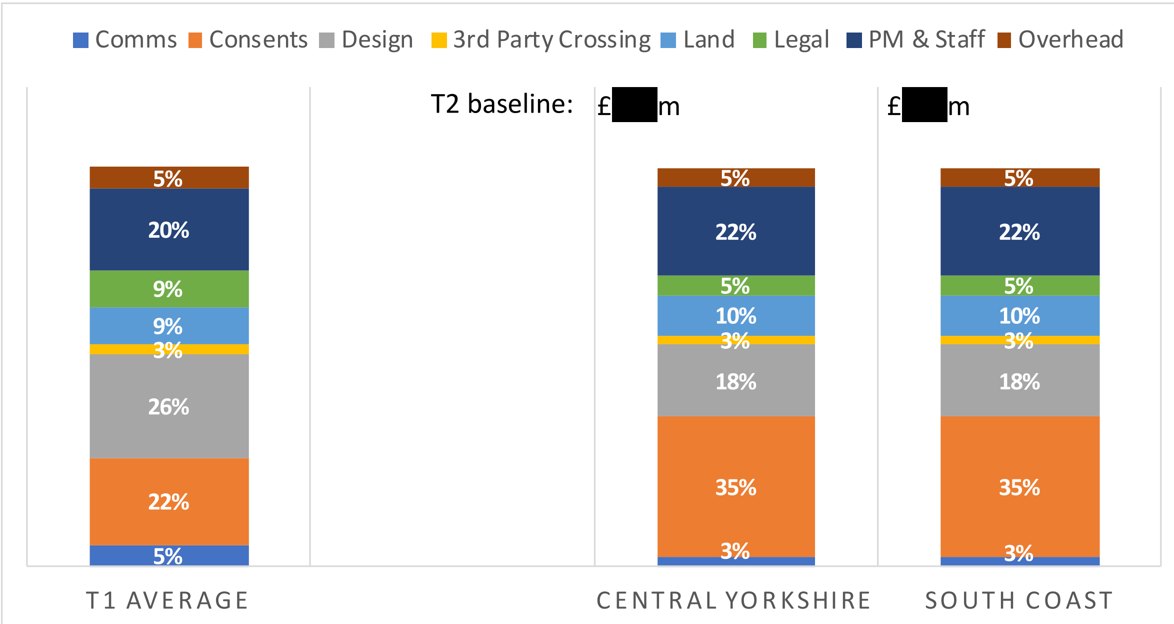
These projects have been grouped given the indicative scope for both is a new 400kV overhead line circuit and each would therefore require a DCO. Given both projects are in the same NDP phase, broadly the same high level activities will be required in RIIO-T2 to achieve consents. Given the location of both of these projects, there is expected to be significant opposition to the development of new transmission infrastructure in these areas.

Key activities to be delivered in RIIO-T2 for the scope outlined are:

- Onshore route corridors developed and agreed
- Completion of Onshore Environmental Surveys
- Engineering Development to support route selection and consultation
- Extensive engagement with Stakeholders
- Non-Statutory and Statutory Consultation
- Environmental Impact Assessment
- Preparation of Development Consent Order Application
- Negotiate voluntary land rights
- DCO Examination and Decision
- Detailed design
- Development of tender documentation for onshore elements of the project (e.g. new substation assets, overhead line conductors and towers)

Costs for these activities are forecast to be split against key cost categories as shown in Figure 5, below. The key differences between T1 and T2 cost splits per category are related to the fact that the T2 costs have more consenting and less design allocation than the T1 average. This is reflective of our refined approach, as described above.

Figure 5 – Breakdown of T2 consenting costs by activity for onshore projects



The difference in costs between the two projects is largely attributed to the different route lengths (circa [redacted]km vs. circa [redacted]km) and this driving significantly more activities across all areas of the project. There is not a direct 'per km' costing between these projects as there are some base activities which are required regardless of route length (e.g. there will be elements of the DCO application which are required regardless of route length) and some which are more closely correlated with route length (e.g. lands and design activities).

The majority of work is attributed to consenting specific activity, which includes completion of the Environmental Impact Assessment to support our DCO application. This consenting activity depends on progressing the detailed engineering design and lands activities. There will also be significant communications activities, for example establishing a project website and materials to support our engagement with all interested parties.

Legal support is required in a number of areas across each project, for example to support consenting activities or with regards to negotiation of land rights with affected parties.

Third party impacts consider the work required to assess, design, and mitigate any impact that our project has on other parties. In this case, we are anticipating that we will impact the local Distribution Network Operators (DNOs) and may need to take mitigating actions to manage any impact on their infrastructure.

The complexity of these projects and number of workstreams involved mean there is also a portion of costs allocated to project management activities, staff and overheads. This apportionment of costs is based on our experience in RIIO-T1 of likely costs in this area.

Offshore - Eastern Link Projects

The Eastern Link projects are a very different project compared to the overhead line projects, both from a technology/engineering perspective and a consenting perspective. While a DCO is not currently expected to be the preferred consenting approach, marine consents will have to be granted which requires an additional set of activities unique to operating in the marine/offshore environment. Different organisations and consenting processes are operated both onshore and offshore in Scotland (e.g. there is no such thing as a DCO in

Scotland). All three TOs are bringing their experience on developing and delivering similar types of projects to ensure we develop accurate project costs and programmes for the Eastern Links.

Key activities to be delivered in RIIO-T2 for the scope outlined are:

Onshore Driven	*Offshore Driven*
• Onshore route corridors developed and agreed • Completion of Onshore Environmental Surveys • Converter Station location options reviewed and final options agreed • Detailed Engineering Development of onshore works • Extensive Engagement with Onshore Stakeholders • Non-Statutory Consultation • Onshore Environmental Impact Assessment • Preparation of Onshore Planning Applications (Scotland and England) • Negotiate voluntary land rights • Development of tender documentation for onshore elements of the project (e.g. new substation assets, converter station assets)	• Detailed offshore route corridors developed and agreed • Completion of Marine Surveys • Onshore Landing Points agreed • Detailed Engineering Development of offshore works, including HVDC cable and transition onshore • Marine Environmental Impact Assessment • Preparation of Marine Planning Applications (Scottish and English Waters) • Marine licensing • Extensive Engagement with Offshore Stakeholders (e.g. Marine Management Organisation, Fisheries Organisation, Crown Estate etc.) • Development of tender documentation for offshore elements of the project (e.g. marine cable)

Eastern Link Cost Sharing Assumptions

The Eastern Link projects are currently being developed under a tripartite Joint Working Agreement (JWA), which includes the cost share arrangement. In particular, this is focused around the costs associated with delivery of the seabed surveys for each project and has not been designed to endure for the life of the project.

The Eastern Link Projects consents outputs will be delivered between the relevant TOs (the first between ourselves and SPT and the second between ourselves and SHET). Detailed negotiations have not yet taken place as to how this will be set up and agreed, and therefore how the costs will be shared between organisations has not been agreed for RIIO-T2.

To enable us to be make a credible submission we have made the assumption that all RIIO-T2 costs will be split between the TOs [redacted].

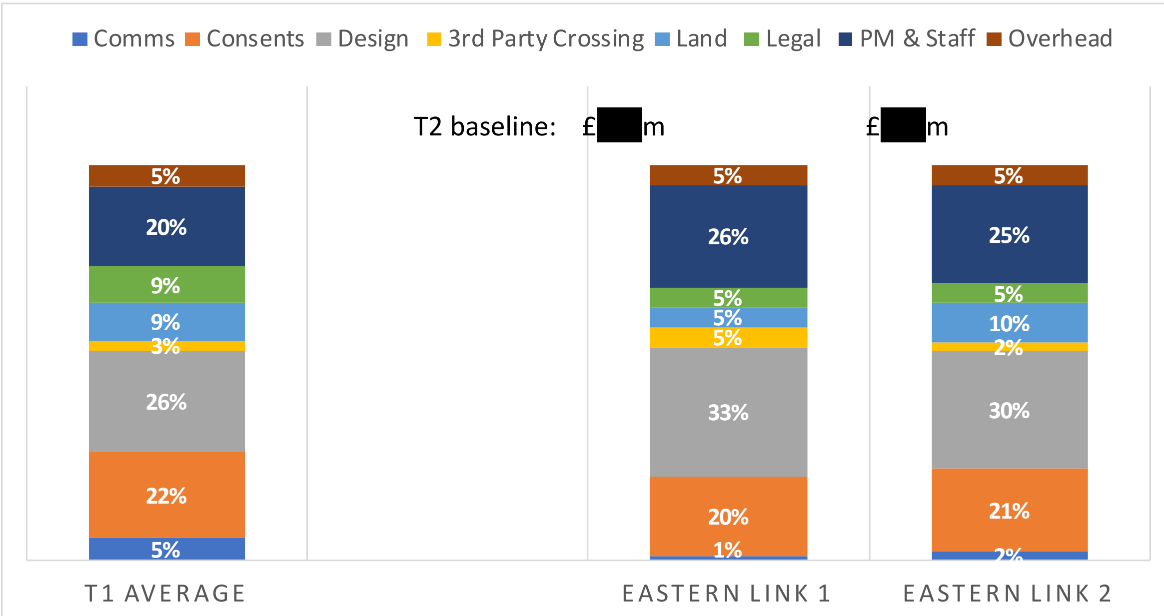
Table 6 – Assumed sharing of pre-consent costs with Scottish TOs

Project	NGET % Cost Share (Pre-Consents)	Scottish TO % Cost Share (Pre-Consents)
Eastern Link: Torness – Hawthorn Pit	[redacted]%	[redacted]%
Eastern Link: Peterhead - Drax	[redacted]%	[redacted]%

If the final position cost sharing arrangement differs from the assumptions above, then there will need to be an agreement how this is managed between the relevant TO(s) and/or Ofgem. This may be something that can be addressed prior to final proposals.

Costs for the activities required to consent the two Eastern HVDC links are split against key cost categories as shown in Figure 6, below. Key differences between T1 and T2 cost splits per category are related to the fact that the T1 average contains mostly onshore projects, which tend to have a lower proportion of cost associated with design and project management than those that are offshore.

Figure 6 – Breakdown of T2 consenting costs by activity for offshore projects



The difference in costs between the two projects is largely attributed to the different offshore lengths and differences in the onshore works (e.g. for Eastern Link 2 there is a significant onshore cable route to be developed from the shore to Drax, circa [redacted]km).

Given there is not expected to be a requirement for a DCO, the relative consenting costs are lower than they would be for an onshore overhead line project. In this case, the majority of work is attributed to design activity of the on and offshore elements, which are required to support our onshore and marine consenting activities. Consenting activities will also be shorter than they would be on a DCO project. There will also be significant communications activities, for example establishing a project website and materials to support our engagement with all interested parties both onshore and offshore (and in Scotland and England).

Land activities are required to support converter station placements onshore, as well as the modification works at relevant substations and connections from the shore the substation. The cost of lands is significantly higher on the second Eastern Link project to recognise the point made above that there is a significant amount of onshore cabling required (circa [redacted]km) to get to the onshore substation at Drax.

Legal support is required in a number of areas across each project, for example to support consenting activities or with regards to negotiation of land rights with affected parties.

Third party impacts consider the work required to assess, design, and mitigate any impact that our project has on other parties. In this case, it is associated with crossing third party infrastructure offshore (e.g. electrical cables, subsea pipelines), shown in yellow in Figure 6, and we will need to take mitigating actions to manage any impact on their infrastructure.

The complexity of these projects and number of workstreams involved mean there is also a portion of costs allocated to project management activities, staff and overheads. This apportionment of costs is based on our experience in RIIO-T1 of likely costs in this area.

4. Managing Uncertainty in RIIO-T2

Experience of RIIO-T1 funding approach

The Strategic Wider Works (SWW – see Appendix 2) mechanism was established for T1 to allow Ofgem to consider the need and funding for large transmission projects during the price control to ensure delivery could be brought forward in a timely manner, given the uncertainties associated with some of these projects when the price control was set.

Fixed Pre-Construction funding was agreed in the RIIO-T1 baseline for projects which, at that time based on the RIIO-T1 scenario, were forecast as being required to be developed throughout the price control. That certainty of funding allows SWW projects to be progressed by the TOs through the initial development phases without unnecessary delay. The T1 mechanism also allowed for substitution of allowances between projects, where the TO needed to progress different projects than those proposed in the baseline.

In the RIIO-T1 period, there was £46m (in 9/10 prices) of SWW Pre-Construction funding allocated to two specific projects: An Eastern HVDC Link and the Wylfa-Pembroke HVDC Link. This was a fixed, ex-ante allowance but with scope to substitute allowances between projects if required.

The need for these projects changed through the price control as the forecast generation scenario did not play out in reality. Eastern Link has been delayed, and the Wylfa – Pembroke HVDC Link is no longer required. Conversely, the need for new projects also emerged as new customers came forward, with significant investment being made to support development of their connections. These included the Hinkley – Seabank new Overhead line for the Hinkley C Nuclear Power Station in Somerset and the North West Coast Connection project to enable to connection of the Moorside Nuclear Power Station in Cumbria.

While the SWW process has worked well in some areas, in RIIO-T1 mechanism did not provide sufficient flexibility to reflect the uncertain nature of these particular projects. We are therefore requesting baseline funding for a small number of projects, with a separate Uncertainty Mechanism to enable allowances to flex as projects emerge and / or disappear through the RIIO-T2 period.

The addition of new projects against the fixed baseline funding resulted in overspend of approximately £33.2m (2018/19 prices) against the Pre-Construction allowances in the RIIO-T1 period, despite the delay/cancellation of other projects in the baseline. Our RIIO-T1 baseline funding was set by allocating a fixed percentage of total project costs as ‘Pre-Construction’. We have evolved our approach for RIIO-T2, and determined our baseline funding request by reviewing the forecast activities and costs for each project individually, as well as a reviewing of historic RIIO-T1 costs on similar projects, to ensure our submission is as robust as possible given the stage the phase these projects are currently in.

RIIO-T2 Uncertainty Approach

The drive for net zero, and our experience in RIIO-T1, would indicate there are likely to be a number of major transmission reinforcement projects that require consenting in addition to those included in our baseline plan. As we do not currently have certainty of the need and/or timing of the requirement it would not be in consumers' interests to request funding for these projects at this time and they are therefore not included in our baseline plan.

Given this uncertainty, there must be a mechanism by which consents for new projects can be funded throughout the price control. This will ensure projects can be progressed at the right time to deliver consumer benefit, while ensuring the TO is able to recover the costs it incurs in developing these projects. Where a project is no longer required (e.g. the NOA recommendation changes or a customer terminates their connection agreement), there needs to be consideration of how surplus funding is managed. We are proposing an uncertainty mechanism to manage this for any new projects which come forward during RIIO-T2.

Summary of our proposal

- 1.4 £m/km for new onshore projects
- 0.3 £m/km for new offshore projects
- Allowance is for all activities required to achieve planning consents
- Extend the Termination Provisions for Wider Works (TPWW) mechanism to recover allowances spent if a project we are consenting terminates
- There will be no substitution of allowances between projects

The purpose of the Unit Cost Allowance (UCA) is to provide an allowance for new LOTI / contestable projects, that are not in our baseline allowance proposal which could emerge in the T2 period (where National Grid would be expected to obtain consents). In such cases NGET will be required to develop the projects and deliver planning consents before the project is subject to competitive tender.

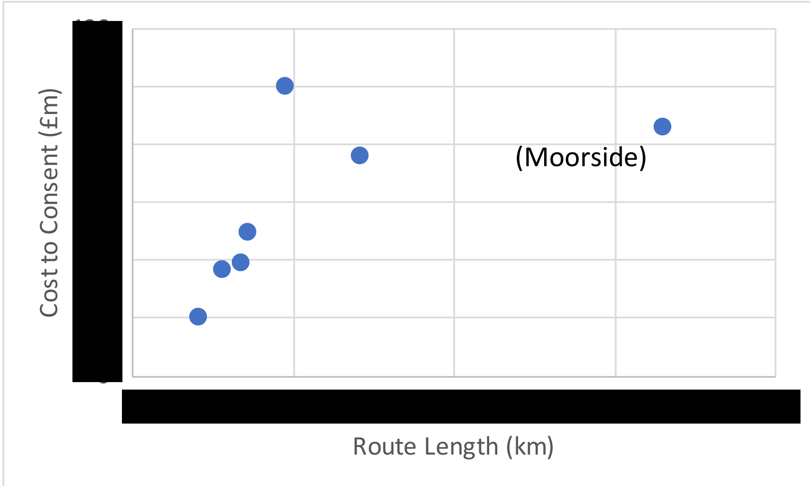
We have calculated the **onshore UCA** values by taking the mean of the spend to consents per km for six projects >£100m. These are shown in Table 7, below.

Table 7 – Comparative Spend on Major OHL Projects to Achieve Consents

Project	Spend to consents (£m)	Route length (km)	£/km
Hinkley-Seabank	[redacted]	[redacted]	2.1
Canterbury-Richborough	[redacted]	[redacted]	1.1
Bramford-Twinstead	[redacted]	[redacted]	1.4
Horizon	[redacted]	[redacted]	1.4
Central Yorkshire	[redacted]	[redacted]	1.2
South Coast	[redacted]	[redacted]	1.1
Moorside	[redacted]	[redacted]	0.53
		Average excluding Moorside	**1.39**

The Moorside project has been excluded from this calculation as it is a clear outlier because this project terminated in advance of a DCO application being submitted (unlike Horizon, for example, which also terminated but not till after the process was sufficiently advanced that a DCO application was made). Figure 7 below shows a plot of spend to consents versus route length to illustrate the relationship between these two characteristics.

Figure 7 – Comparison of cost to consent and route length



Two of these projects, Central Yorkshire and South Coast require a T2 period baseline allowance to enable us to progress these to consents, at which point Ofgem may choose to put these forwards for competitive tender. It should be noted that the spend to achieve consents noted above for these two projects are total spend to consents, including T1 period. The other four are T1 period projects but may reappear in the T2 period. In any case, consideration of all projects is a more robust approach to calculating a unit cost allowance.

For the historic projects NWCC, Horizon, Canterbury - Richborough and Hinkley, actual project spend figures have been used. It should be noted that customer contracts for both Horizon and the NWCC were terminated before consents achieved. Therefore, cost to achieve consents would be higher than that value used for comparison here. For Hinkley costs for T-pylon development and Eakring test site removed as these would be a one-off.

The **offshore UCA** value has been calculated by taking the mean of the spend to consents per km for three sub-sea HVDC projects. These are shown in Table 8, below.

Table 8 – Comparative Spend to Achieve Consents for Offshore Projects

Project	Estimated spend to consents (£m)	km	£/km
Western Link	[redacted]	[redacted]	0.22
Eastern Link 1	[redacted]	[redacted]	0.24
Eastern Link 2	[redacted]	[redacted]	0.14
		Average	**0.2**

Funding to achieve consents on both the Eastern Link projects is included within our baseline allowance proposal. It should be noted that the spend to achieve consents noted above for these two projects are total spend to consents, including T1 period. We have also used estimated actual costs for the Western Link project in this analysis, as the only sub-sea HVDC project, operating in parallel with the onshore network, that has been consented and delivered in Great Britain.

We propose that the allowance is triggered for any new project >£100m, where a customer contract has been signed which triggers the work, or where we have received a proceed recommendation from the ESO through the NOA process.

In reaching our proposal we have considered a range of alternatives:

- A percentage adjustor, which gives a fixed % of the total project costs as an additional allowance for delivering consents. The % is based on the mean % to achieve consents

- In-period determination of ex-ante funding
- Allowed substitution of the fixed ex-ante baseline allowance between current and future projects (*the T1 period mechanism*)

We believe in comparison to the alternative options examined the proposed approach provides a fair and cost reflective method for spending on consents to facilitate competition. It overcomes the T1 period mechanism limitations where no account for future uncertainty was provided and the automatic nature means projects can be progressed to consent aligned with the signals provided by the ESO or to meet contractual obligations with our customers. This would not interfere with Ofgem's requirement to undertake a specific need case review and project cost assessment, which we note are still intended to take place under the LOTI framework.

5. Risks

There are a number of risks that we need to manage through the RIIO-T2 period with regards to these projects (or similar projects which materialise through the period):

RIIO-T2 Risk	Impact	Mitigation
We are unable to deliver the efficiencies we anticipate in delivery of these projects	Our allowances would not fully cover costs	Focus on ensuring we deliver project efficiencies, continue to review and evolve our approach to major projects
Baseline projects are paused, terminate or considerable scope changes	Projects do not progress as expected and therefore we do not deliver the RIIO-T2 'consented project' output	We have proposed a TPWW (or similar) mechanism to recover efficient costs.
Projects face significant local public and political opposition, to the extent which impacts project progression	Reputational impact for a project which National Grid may not deliver, which may also impact our ability to establish good stakeholder relationships. Project costs and program may be impacted.	Ensure robust strategic optioneering and risk-based consultation process. Use previous experience and existing relationships to include this as part of our stakeholder engagement and consenting strategies early in project development.

Appendix 1 – Overview of our Network Development Process for project development

We established the Network Development Process (NDP) to ensure a consistent approach to project development is applied to all investments (the same process applies to customer-driven and asset health-driven investments) and provide a rigorous governance framework to ensure the right development activities are undertaken at the right time, before moving on through the process and incurring additional costs. The process is characterised by stages of activity (boxes) and governance gates (diamonds), as shown in Figure A1.

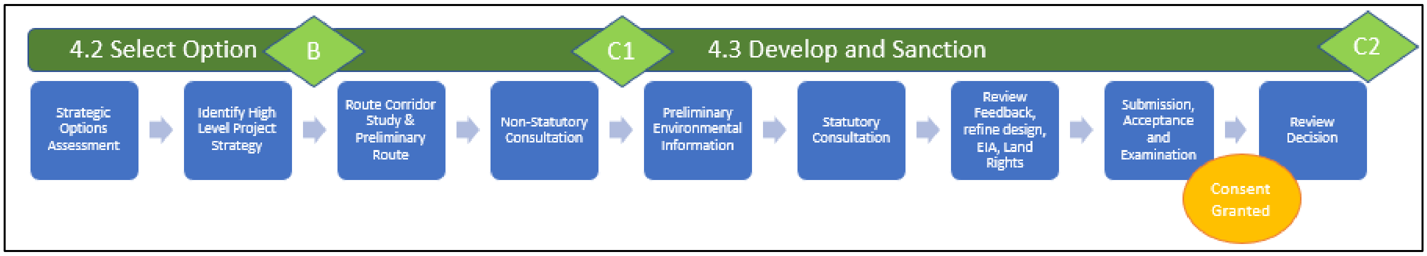
Figure A1 – Network Development Process

A gate keeper (typically a senior manager) is assigned to each of the gates with accountability for determining whether sufficient development has been undertaken (by reference to an agreed check-list) and whether the time is right to move to the next process stage (which is informed by the underlying driver of the investment and the timescales of future development). The Gate Keeper for major transmission reinforcements is the Major Projects Board, with Senior Management from the relevant areas of the business engaged throughout the project lifecycle.

Typically, projects progress linearly from one stage to the next. However, there are instances, particularly for customer-driven investments, where projects may go forward or backwards one or more stages or be put on 'pause'. The NOA process can provide a range of recommendations to the TO, including: 'Proceed', 'Delay' or 'Stop'. This recommendation may change which phase the project should be in. For instance, if the NOA process identifies an alternative reinforcement to be more economic (i.e. a new project gets a 'Proceed' recommendation) and therefore a particular investment is no longer required (i.e. the old project gets a 'Stop' recommendation), then the old project may move from Stage 4.2 to Stage 4.5 so that the investment can be closed; or the requirements of the project could change during Stage 4.3 such that it might be appropriate to return to Stage 4.2 to review the option selection.

An enhanced version of this approach is used for major transmission reinforcement projects, to account for the additional complexity and more involved consenting activities required to ensure these projects are executed effectively. These types of investments would typically follow the process shown in Figure A2, below:

Figure A2 – Network Development Process for Major Projects



While the high level NDP process is unchanged, there are supplementary activities required in parallel during the 4.2 ‘Select Option’ and 4.3 ‘Develop and Sanction’ phases to ensure planning consents are progressed while the engineering works are developed. Stages 4.0, 4.1 and 4.5 are largely unchanged (and therefore not shown above).

- While not formal ‘Gates’ in the process, there are formal Governance checkpoints between each of the high-level steps detailed above (shown by the arrows above).
- Non-Statutory and Statutory Consultation is undertaken during 4.3
- Timelines for the consenting process, particularly DCO consenting, are largely mandated and typically sit on the critical path of project delivery

Stage 4.0 – Confirm and Agree Driver

This stage records the driver for an investment and the outputs that are expected to be delivered. Typical drivers include connecting a new customer, removing constraints on system boundaries (identified through the NOA process), or maintaining compliance with industry codes and standards. Once a driver has been established, the investment will proceed to Stage 4.1.

Stage 4.1 – Establish the portfolio by creating an initial plan entry

The aim of this stage is to establish and maintain a portfolio of all potential investments required to meet the driver and identify high-level investment costs and development milestones. This is the first building block from which investment scenarios can be created for business planning purposes.

All investment costs at this stage are based on a Cost Book and expenditure phased using pre-defined spend profiles. The Cost Book provides a list of standard transmission asset and development activities, and the average unit cost to procure and / or install these. The costs provided by the Cost Book are based on delivered and tender returns and it is updated annually. The phasing considers the likely complexity of the work (e.g. if a development consent order will be required) and the type of assets being installed (e.g. a transformer or overhead line).

At the end of this stage a high-level, indicative project scope (i.e. indicative start and end points for the connection) will have been outlined and costed; initial resource estimates made; and a series of future milestones identified for subsequent development and construction activities. Cost and timings are high-level at this stage, and therefore there is an inherent level of uncertainty in the cost and programme forecast created. Strategic options and issues for consideration in future stages of development may also be identified and recorded.

When the milestones indicate that it is necessary to begin more detailed development, the project is presented to Gate A2 and, if successful, moved into Stage 4.2.

Stage 4.2 – Strategic Option Selection

The purpose of this stage is to identify a full range of strategic options that satisfy the driver (whilst complying with industry codes and standards) and to select a preferred strategic option by identifying with more certainty the scope, programme, costs and strategic constraints associated each of these potential options. An Options Appraisal process is undertaken to identify a preferred strategic option. Given the nature of these types of projects, more weighting will be given to environmental issues alongside engineering and programme considerations. Given the level of investment typically involved, a cost-benefit analysis will be required to support the recommended option (undertaken by ESO as an independent assessment of the options).

Given the level of investment typically involved, a cost-benefit analysis will be required to support the recommended option (undertaken by ESO as an independent assessment of the options). This is a more detailed cost-benefit assessment across the lifetime of the investment and includes a number of sensitivities for different facets of the project e.g. sensitivity to changes in project cost, project delays and changes in how generation patterns develop.

For major transmission projects, this is a longer and more detailed process to ensure that all credible alternative options are considered and the preferred option justified and in consumers' interests. There will typically be a significantly larger number of options considered than for smaller-scale investments given the geographical spread of potential strategic options.

As planning consents are typically required (often a Development Consent Order (DCO) granted by the Secretary of State), this stage is critical to ensure there is sufficient justification and evidence for the chosen strategic option. Any information generated in this stage will be subject to extensive scrutiny through subsequent consultation and examination processes in 4.3.

For a major transmission project, it is also important to define all elements of the high-level project strategy as this stage, given the complexity and range of activities involved. This will involve considering the stakeholder engagement strategy, consenting approach and land strategy.

The complexity and number of options being considered mean this process can typically take 6-12 months to complete. Once a preferred strategic option is selected and it is right to move forward with more detailed work, the project is presented to Gate B and, if successful, moves into Stage 4.3.

Stage 4.3 – Develop and Sanction

During stage 4.3 further work is undertaken to develop the preferred strategic option to the level of accuracy required to achieve consents and develop the project to a sufficient level of engineering detail ahead of delivery. We will then put the required financial sanction in place and move into the tender and delivery stage.

Engagement, consultation and environmental surveys will be undertaken as required throughout this phase. Engineering surveys and further detailed design work (e.g. engineering drawing production) are also undertaken as required to establish a comprehensive project scope, identify and address hazards, and ensure resources are in place to deliver the project (including system access).

Since a major transmission project will typically require a new transmission circuit, this phase will start with constraint mapping to determine outline route corridors and preliminary routes to allow assessment of options ahead of Non-Statutory Consultation. Gate 'C1' follows this stage of Non-Statutory consultation, as a Governance Gate to approve the preferred route corridor selection before progression to Statutory Consultation.

Non-Statutory Consultation will be followed by a Statutory Consultation. There is a significant amount of work required to prepare for this Consultation phase and identify all relevant consultees. Designs and plans are reviewed and iterated following each consultation phase to ensure appropriate consideration of stakeholder feedback. Following these consultation phases, and production of planning application information, an application will be made for planning consents to the relevant party (either the Local Planning Authority for Town & Country Planning, or the Planning Inspectorate for a Development Consent Order).

This is followed by a significant period of examination and responding to questions from the relevant authority before a decision is made. This is a 15-18 month process from application to decision for a DCO (the timings for which we, as the Applicant, have no control over). Once the decision to grant consents is made, the detail of this decision is examined to enable any conditions or requirements to be discharged effectively (e.g. there may be conditions stipulated related to protection of particular species or related to the visual impact of the infrastructure we will build).

Once this stage is completed, both from an engineering and consenting perspective, the investment is then taken forward for full financial sanction approval. The complexities and planning processes which take place during this 4.3 phase mean it will take a number of years to complete all of these elements. Provided the driver is still firm, and the Final Need Case has been approved by Ofgem, it will then be presented to Gate C and if successful move into Stage 4.4.

Stage 4.4 – Execute Project

This stage encompasses the delivery activities ranging from tendering and contract award through to physical construction work and commissioning. Throughout this stage our contractors are monitored to ensure the projects are delivered according to the agreed scope and cost, and in accordance with the consents granted. Given the complexity and scale of major transmission projects, these build programmes are incredibly complex and will often span multiple years.

At this stage the project becomes part of the NOA baseline capabilities, from the year the project delivers i.e. the option is no longer fed into the NOA process for a recommendation to be made.

As early as possible during this stage of the project, we would also expect Ofgem to complete its review of the Project Assessment, to provide clarity of the funding which will be able to be recovered for delivery of the project.

Once the construction activities are completed, all financial matters settled (e.g. contract claims closed) and systems updated (for example, to ensure the correct maintenance occurs in the future), the investment is ‘closed’ by the relevant sanctioning authority and presented at Gate D. If successful, the project is moved into Stage 4.5.

Stage 4.5 – Review and Close Project

The purpose of this stage is to provide final confirmation that the investment elements have been closed in all business systems, and that all reported costs are final and complete. Once this assurance has been received, the investment process is complete. It should be noted that, outside of the core project cost, there may also be ongoing environmental monitoring costs post-construction which will be incurred by the business on an ongoing basis.

This stage, in conjunction with the investment sanctioning committee, will also identify projects that should be subject to a Post-Investment Appraisal (PIA). A PIA is used for challenging investments to review decisions and ensure that appropriate lessons are learnt.

Appendix 2 – Overview of Strategic Wider Works process

In the RIIO-T1 period large transmission projects >£500m were subject to additional review by Ofgem through additional submissions to ensure these projects have a robust need and deliver value for consumers. These reviews then also enabled appropriate funding to be put in place. There are four key assessment stages in the current SWW guidance. These are used to assess any SWW project, beyond what is considered through the NOA process:

- **Eligibility Assessment:** To determine that the proposed project meets the criteria to receive funding through the SWW mechanism.
- **Initial Need Case:** An initial review of the technical requirements for the reinforcement and initial options for consideration to assess. This is to enable Ofgem to assess the need to move forward with more detailed development.
- **Final Need Case:** Once more work has been done to develop the detail of the project, this is used to confirm the need for the project and the appropriateness of the technical option selected. Project uncertainties will be evaluated to determine that the option provides long term value for consumers. Ofgem run a consultation with external stakeholders as part of this overall assessment.
- **Project Assessment:** This looks in greater depth at the preferred option, readiness to proceed and the efficient cost allowances that can be recovered from consumers for delivery of the project. Ofgem run a consultation with external stakeholders as part of this overall assessment.

While the approach to a SWW type mechanism for the T2 period (Large Onshore Transmission Investment – LOTI) is still being developed, we understand that the threshold is likely to be lowered to projects >£100m. Whilst the focus may shift between stages, how these projects are assessed is not expected to change fundamentally from those steps described above.