

Decision

Decision on the Final Needs Case for the Hackney Waltham Cross Upgrade North London reinforcement project (North London project)

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Following our 12 May 2023 Final Needs Case consultation, this document confirms our decision to approve the Final Needs Case for the North London reinforcement project under the Large Onshore Transmission Investment mechanism.

This document also includes an update on the regulatory delivery model for the North London project and an update on the large project delivery arrangements.

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Executive summary

Hackney Waltham Cross Upgrade - North London reinforcement project and what this document covers

In May 2023 we consulted¹ on our minded-to position to approve the Final Needs Case (FNC) submission from National Grid Electricity Transmission plc (NGET)² regarding the proposed ‘Hackney Waltham Cross Upgrade North London reinforcement project (North London project). This project consists of (1) uprating 19.5km of OHL between Hackney, Tottenham and Waltham Cross substation from existing 275kV to 400kV and (2) reconductoring of 29km route between Pelham -Rye house and Waltham Cross.

For the North London project, we did not review an initial Need Case (INC) submission on the basis that there was already a Development Consent Order (DCO) in place for the project, complying with the necessary Planning Consent criteria.³ In July 2022 we published a direction⁴ that relieved NGET of the requirement to submit an INC and allowed NGET to proceed with the FNC submission.

The project is triggered by the need to provide reinforcement of the route between Pelham and Hackney substations to accommodate increases in future renewable generation. Without reinforcement, the current 275kV circuits feeding London would be overloaded by high levels of offshore wind from East Anglia. This would be worsened where high wind generation coincides with high levels of interconnector exports from locations south of London.

In accordance with our RIIO-2 price control arrangements, we have been assessing the need for the North London project under our Large Onshore Transmission Investment (LOTI) re-opener mechanism.⁵

In December 2022 we published our decision setting out how we will support the accelerated delivery of strategically important electricity transmission upgrades that are needed to meet the Government’s 2030 renewable electricity generation ambitions

¹ [Hackney Waltham Cross Upgrade Project \(HWUP\) - North London FNC consultation | Ofgem](#)

² NGET is a Transmission Owner (TO) and owns and operates the transmission network in England and Wales.

³ Special condition 3.13.14 requires the licensee to secure all material planning consents.

⁴ [Direction for the Hackney Waltham Cross Upgrade North London reinforcement project | Ofgem](#)

⁵ [Special condition 3.13 of the Electricity Transmission licence](#) and the [LOTI Guidance](#)

under our new Accelerated Strategic Transmission Investment (ASTI) framework.⁶ As a result of this decision, North London project will be included within the new ASTI framework rather than the existing LOTI framework. Subject to the outcome of the current statutory consultation (closed 23 June 2023),⁷ we are planning to implement the changes explained in our ASTI decision into TO licences later this year. However, until those changes are in place, we will continue our assessment of this project under the LOTI mechanism.

This document summarises our decision following our FNC review and the next steps for the project.

Final Needs Case assessment

We are satisfied that there is sufficient evidence of a clear needs case for the North London project regarding the required capability uplift to the relevant boundaries within the context of plausible future generation and demand scenarios. This position is as per our FNC consultation.⁸ Having taken into consideration the consultation responses received, we are content that NGET has made the case that its proposed intervention is required.

We consider that the cost benefit analysis (CBA) undertaken by the Electricity System Operator (ESO) for NGET is robust and supports the need for the project. We are also satisfied that the CBA has considered the most relevant technical options and that the preferred option, HWUP, is the optimal option in comparison to the other considered options.

When the changes explained in our ASTI decision are implemented into NGET’s licence, it is intended that the next step of the North London project assessment will then be considered under the ASTI arrangements instead of continuing under the LOTI mechanism.

⁶ [Decision on accelerating onshore electricity transmission investment](#). The North London project is listed as project HWUP.

⁷ [Statutory consultation to modify the special licence conditions in the electricity transmission licences: Accelerated Strategic Transmission Investment | Ofgem](#)

⁸ [Hackney Waltham Cross Upgrade Project \(HWUP\) - North London FNC consultation | Ofgem](#) , paragraphs 2.38-2.41

Delivery via a competition model

The North London project falls under the new ASTI regime which states that all ASTI projects will be exempt⁹ from consideration for delivery via a competition model. Provided the ASTI regime is implemented as planned, the North London project will not be considered for delivery via a competition model.

Large project delivery

If the project remains under LOTI, we will consider the application of a Project Delivery Charge (PDC) at the Project Assessment (PA) stage. However, as explained earlier, it is intended that the North London assessment will transition from the LOTI mechanism into the ASTI regime once the regime is in place. Under the ASTI regime, we will consider the application of an Output Delivery Incentive (ODI)¹⁰ that rewards/penalises NGET for delivery against target delivery dates.

Decision and next steps

This document confirms our approval of NGET’s FNC for the North London project under the LOTI mechanism.

It is intended that the next phase of the North London project assessment will be the ASTI PA stage.

⁹ [Decision on accelerating onshore electricity transmission investment](#), table 4. Please note that the North London project is listed as project HWUP

¹⁰ [Decision on accelerating onshore electricity transmission investment](#), chapter 7, table 10. Please note that the North London project is listed as project HWUP.

1. Introduction

Context

- 1.1 Great Britain’s (GB) onshore electricity transmission network is currently planned, constructed, owned, and operated by three Transmission Owners (TOs): National Grid Electricity Transmission (NGET) in England and Wales, Scottish Power Transmission (SPT) in the south of Scotland, and Scottish Hydro Electric Transmission (SHET) in the north of Scotland. We regulate these TOs through the RIIO (Revenue = Incentives + Innovation + Outputs) price control framework. For offshore transmission, we appoint Offshore Transmission Owners (OFTOs) using competitive tenders.
- 1.2 The incumbent onshore TOs are currently regulated under the RIIO-2 price control which started on 1 April 2021 and will run for 5 years. Under this price control we developed a mechanism for assessing the need for, and efficient cost of, large electricity transmission reinforcement projects. This mechanism is called ‘Large Onshore Transmission Investment’ (LOTI) and is set out in Special Condition 3.13 of the TO’s electricity transmission licence. Once the need for and the costs of projects have become more certain, the TOs will submit construction proposals and seek funding for them as part of the PA submission.
- 1.3 Network investment is informed by the Future Energy Scenarios (FES)¹¹ and the Network Options Assessment (NOA)¹² which are developed and published annually by the ESO. A key focus of the FES 2020 is the inclusion of the Government’s ambition¹³ to deliver up to 50GW by 2030 and the legally binding¹⁴ UK Government Net Zero targets which are to be achieved by 2050. The transition to a Net Zero economy will see increased demand on transmission boundary capability which will need to be facilitated by critical network reinforcements. Similarly, the policy and delivery key message of the FES 2022, used to support this project is to “*Significantly accelerating the transition to a decarbonised energy system can help to address security and affordability concerns at the same time as delivering Net Zero milestones*”.¹⁵

¹¹ ESO [Future Energy Scenarios \(FES\)](#)

¹² ESO [Network Option Assessment \(NOA\)](#)

¹³ Government’s [British energy security strategy](#)

¹⁴ [The Climate Change Act 2008 \(2050 Target Amendment\) Order 2019](#)

¹⁵ [Future Energy Scenarios | ESO \(nationalgrideso.com\)](#)

Overview of LOTI re-opener mechanism

- 1.4 The LOTI re-opener mechanism provides TOs with a route to apply for funding for large investment projects that can be shown to deliver benefits to consumers, but that were uncertain or not sufficiently developed at the time we set costs and outputs for the RIIO-2 price control period. The LOTI mechanism provides a robust assessment process through which we can ensure that TO proposals represent value for money for existing and future consumers.
- 1.5 To qualify for the LOTI mechanism, TO proposals must meet the definition of LOTI as set out in the electricity transmission licence:
- a) be expected to cost £100m or more of capital expenditure; and
 - b) be, in whole or in part, load related.¹⁶
- 1.6 We are satisfied that the North London project meets the criteria and is eligible¹⁷ as a LOTI project. We are therefore assessing the North London project in accordance with the LOTI mechanism as detailed in the LOTI Guidance.¹⁸

Stages of our LOTI assessment

- 1.7 Following the approval of eligibility, our LOTI mechanism is usually made up of three main stages:
1. **Initial Needs Case (INC)** – The usual focus of our assessment at this stage is to review the technical and/or economic need for the project, the technical options under consideration, and the TOs justification for taking forward its preferred option for further development. Ofgem may relieve the licensee from submitting an INC by way of direction and has done so for the North London project.¹⁹

¹⁶ Part (b) of this criterion used to be either “wholly or partly load related” or “shared-use or sole-use generator connection project related”. As a result of a licence modification, which came into effect on 24 July 2021, the “shared-use or sole-use generator connection project” criterion no longer applies. However, this does not impact the project as this is in part a load related project. For further information on the licence modification, see the [Decision on the proposed modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions](#)

¹⁷ [RIIO-2 Final Determinations](#), NGET Annex (REVISED), section 3.60

¹⁸ [Large Onshore Transmission Investments \(LOTI\) Re-opener Guidance](#)

¹⁹ [Direction for the Hackney Waltham Cross Upgrade North London reinforcement project | Ofgem](#)

2. **Final Needs Case (FNC)** – Following the securing of all material planning consents for the project the TO will then need to submit a FNC. The focus of our assessment at this stage is to confirm the need for the project by checking that there have been no material changes in technical and/or economic drivers that were established in the INC. For the North London project, the focus of the FNC was similar to an INC review as an INC was not submitted.

3. **Project Assessment (PA)** – If the FNC is approved, the TO will then need to apply for a PA direction. The focus of our assessment at this stage is the assessment of the proposed costs and delivery plan that the TO has in place for the project. It is intended that for North London project, the PA stage will be considered under the ASTI regime.

Related publications

- 1.8 RIIO-2 Final Determinations – Core Document and NGET Annex – both REVISED: [Ofgem.gov.uk/publications-and-updates/riio-2-final-determinations-transmission-and-gas-distribution-network-companies-and-electricity-system-operator](https://www.ofgem.gov.uk/publications-and-updates/riio-2-final-determinations-transmission-and-gas-distribution-network-companies-and-electricity-system-operator)
- 1.9 LOTI Re-opener Guidance document: [Ofgem.gov.uk/publications-and-updates/large-onshore-transmission-investments-loti-re-opener-guidance](https://www.ofgem.gov.uk/publications-and-updates/large-onshore-transmission-investments-loti-re-opener-guidance)
- 1.10 Decision on accelerating onshore electricity transmission investment (ASTI): [Ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment](https://www.ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment)
- 1.11 Statutory consultation to modify the special licence conditions in the electricity transmission licences: Accelerated Strategic Transmission Investment: [Ofgem.gov.uk/publications/statutory-consultation-modify-special-licence-conditions-electricity-transmission-licences-accelerated-strategic-transmission-investment](https://www.ofgem.gov.uk/publications/statutory-consultation-modify-special-licence-conditions-electricity-transmission-licences-accelerated-strategic-transmission-investment)
- 1.12 North London project - Final Needs Case consultation: [Hackney Waltham Cross Upgrade Project \(HWUP\) - North London FNC consultation | Ofgem](https://www.ofgem.gov.uk/publications-and-updates/hackney-waltham-cross-upgrade-project-hwup-north-london-fnc-consultation)

2. North London Final Needs Case assessment

Section summary

This chapter summarises our May 2023 consultation position regarding the design choices NGET has made to date and the CBA underpinning the need and design of the project, as well as the consultation responses and our updated view following the consultation.

Overview of NGET’s proposal

- 2.1 In July 2022 Ofgem published a direction²⁰ that relieved NGET of the requirement to submit an INC for the North London project and allowed NGET to proceed with the FNC submission.
- 2.2 The FNC for the North London project was submitted by NGET in November 2022. It is supported by a CBA carried out by the ESO, as well as recommendations to “proceed” signal from the annual NOA²¹ process and the Holistic Network Design (HND) report.²² The NOA code for the preferred option for the North London project is HWUP.
- 2.3 NGET proposes to reinforce the route between Pelham and Hackney substation to facilitate anticipated increases in North to South power transfers due to proposed renewable power generation in Scotland and Offshore wind connecting to the East Anglia coastline. Additionally, several new interconnectors to Europe in the south-east coastal areas of England will lead to significant power flows through the existing 275kV London network into south-east England, especially at times of high wind generation and high export to Europe via interconnectors. The constraint boundaries will be EC5 (bordering east Anglia) and LE1 (around London and the south-east), and SC1 (running parallel with the south coast)

²⁰ [Direction for the Hackney Waltham Cross Upgrade North London reinforcement project | Ofgem](#)

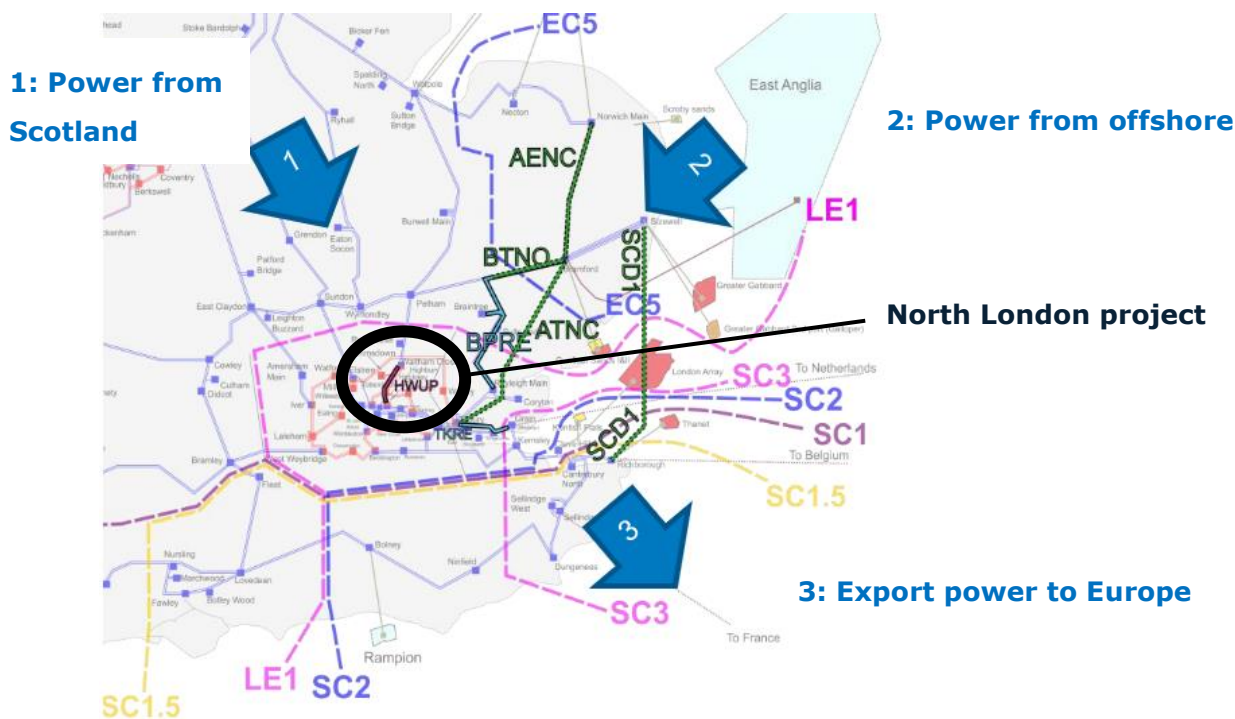
²¹ [Network Options Assessment \(NOA\) | ESO \(nationalgrideso.com\)](#)

²² HWUP appears as a recommended onshore works for the East Cost Region in the HND report which can be found here: [The Pathway to 2030 Holistic Network Design | ESO \(nationalgrideso.com\)](#)

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2.4 **Figure 1** shows the location of the project, the respective boundaries and the additional power flows expected in the area:

Figure 1: project location, respective boundaries and expected power flows.

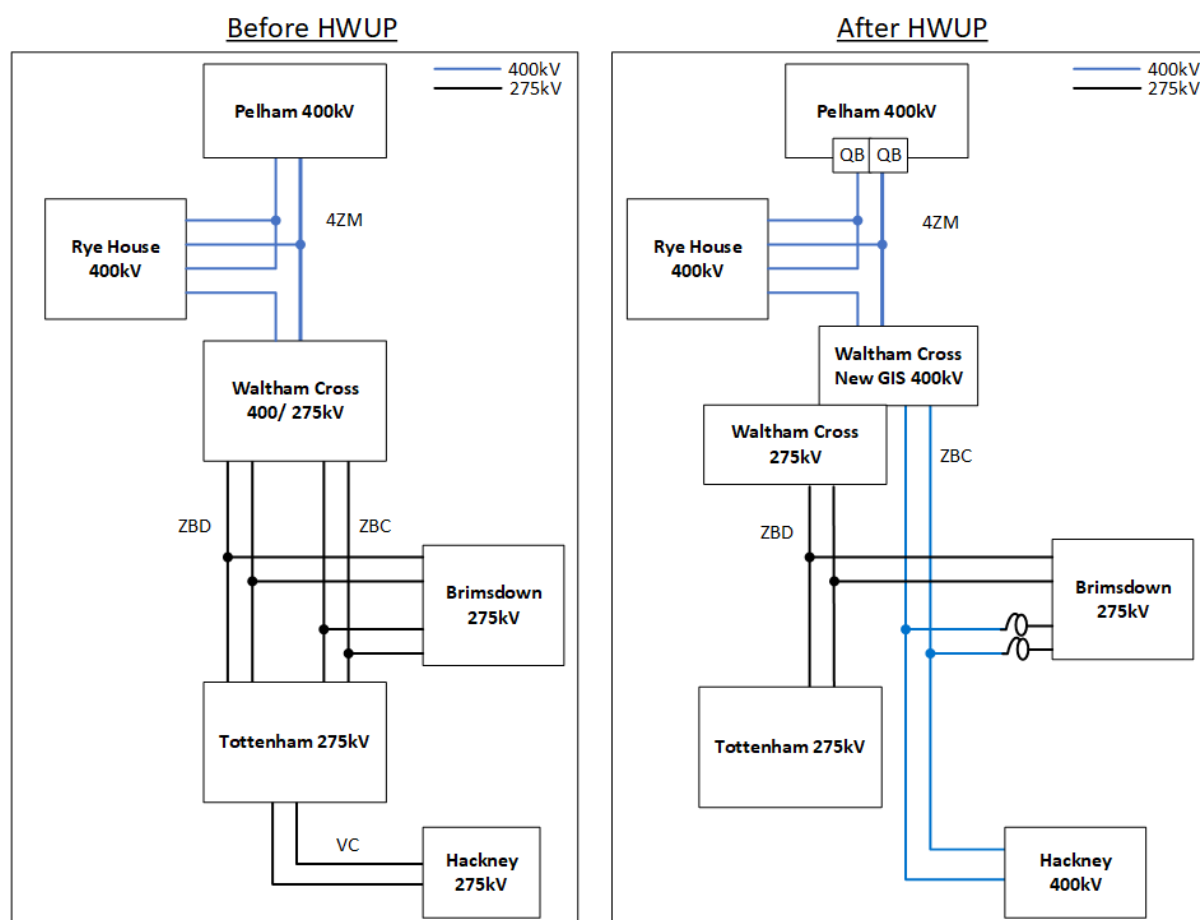


2.5 **Figure 2** presents the project’s scope of work, consisting of:

- Upgrading from 275kV to 400kV of 19.5km of the ZBC and VC OHL routes (between Hackney, Tottenham and Waltham Cross substations), with a new 10 bay 400kV GIS substation at Waltham Cross, two new SGTs at Brimsdown, two new SGTs at Hackney and cable bypass at Tottenham; and
- Reconductoring of the 29km route between Pelham – Rye House and Waltham Cross, and the installation of power flow control at Pelham in the form of 2 x quadrature boosters (QB).

2.6 NGET also included in their submission proposal to refurbish 13.5km of the ZBD OHL route (between Tottenham and Waltham Cross substations); this work however does not provide any additional capability and is driven by the condition of the OHL route and it is our view that this should not therefore be funded via the LOTI mechanism and it is therefore not part of this FNC decision. The cost of this element was therefore not included in the CBA.

Figure 2: Scope of preferred option, HWUP, for North London



2.7 Our May 2023 FNC consultation²³ explains why the project has been brought forward, how NGET arrived at its preferred option, and the options that were considered in the CBA. The CBA results along with justification for NGET’s preferred option are also explained.

Consultation position, responses, and updated view

2.8 Two stakeholders, NGET and the ESO, responded to our FNC consultation. The responses were non-confidential and are published alongside this publication.

2.9 The remainder of this chapter sets out our consultation position, stakeholder responses, and our decision on the project’s drivers, optioneering, and CBA.

²³ [Hackney Waltham Cross Upgrade Project \(HWUP\) - North London FNC consultation | Ofgem](#), chapter 2

Project drivers

Consultation position

- 2.10 We agreed with NGET’s position that there is the need for reinforcement on the EC5 and LE1 boundaries to ensure that the electricity generated by anticipated new renewable energy, particularly in Scotland and the east of England (offshore), can be transferred efficiently to where it is needed without being constrained.²⁴ Demand beyond these boundaries is expected to rise in the future.
- 2.11 Our view was that the CBA supports the need for investment on this part of the network.

Consultation responses and our views on them

- 2.12 Both respondents agreed with our consultation position.

Updated view

- 2.13 We remain satisfied that the project drivers underpin the need for the project.

Options considered

Consultation position

- 2.14 We considered that NGET provided a clear account of the options considered. We also noted that NGET responded to NOA signals in a reasonable manner to ensure that appropriate options could be assessed, and that NGET set out its most realistic delivery dates for the CBA, which are an important element for this project.
- 2.15 We noted that NGET also included in their submission proposal to refurbish 13.5km of the ZBD OHL route (between Tottenham and Waltham Cross substations). Our view is that NGET has an existing funding route outside the LOTI mechanism which can be used to fund this refurbishment, and thus we don’t consider it an integral part of the North London project. We stated that we will continue to engage with NGET on this matter to ensure best result for consumers

²⁴ [Hackney Waltham Cross Upgrade Project \(HWUP\) - North London FNC consultation | Ofgem](#) para. 2.38

as we recognise that there may be financial opportunities related to the delivery of both projects at the same time.

Consultation responses and our views on them

2.16 Both respondents agreed with our consultation position.

Updated view

2.17 We remain satisfied that the optioneering phase considered a suitable range of technical options and that HWUP continues to be the optimal solution.

CBA results

Consultation position

2.18 We agreed with NGET that the CBA supports the need for investment on this part of the network and justifies NGET’s progression of HWUP as the preferred option. We also noted that we expect NGET to continue to progress the project in a timely manner given that the benefits are largely driven by timely delivery.²⁵

2.19 We also stated our comfortable that HWUP remains the most appropriate option under a reasonable range of tested sensitivities.

Consultation responses and our views on them

2.20 Both respondents agreed with our consultation position.

Updated view

2.21 We remain satisfied that an appropriate range of viable options and sensitivities were tested in the CBA.

²⁵ [Hackney Waltham Cross Upgrade Project \(HWUP\) - North London FNC consultation | Ofgem](#) para. 2.47-2.50

3. Delivery via a competition model

Section summary

This chapter summarises our May 2023 consultation position, consultation responses regarding whether to apply a late competition model and our updated view following the consultation.

Background

- 3.1 Competition in the design and delivery of energy networks is a central aspect of the RIIO-2 price control. Competition can have a key role to play in driving innovative solutions and efficient delivery that can help meet the decarbonisation targets at the lowest cost to consumers. We set out in our Final Determinations²⁶ for RIIO-2 that during the RIIO-2 period, all projects that meet the criteria for competition and are brought forward under an uncertainty mechanism²⁷ will be considered for potential delivery through a late competition model.
- 3.2 North London project does not meet the criteria for late model competition and thus is not considered for late model competition. This is in line with the ESO view as per NOA 2021/22 Refresh.²⁸
- 3.3 Since then, in our December 2022 ASTI decision we decided that all projects that have been designated to move within the ASTI regime, which includes the North London project, will be exempt from consideration for delivery via a competition model.²⁹

Consultation position

- 3.4 Based on the reasons stated above, we have not assessed the project’s suitability for competition under the LOTI regime.

²⁶ [RIIO-2 Final Determinations](#), Core Document (REVISED), chapter 9

²⁷ [Large Onshore Transmission Investments \(LOTI\) Re-opener Guidance](#), pages 9-11

²⁸ [Network Options Assessment \(NOA\)](#), see “Read NOA 2021/22 Refresh report”, page 32. Please note that the North London project is listed as project HWUP

²⁹ [Decision on accelerating onshore electricity transmission investment](#), table 4. Please note that the North London project is listed as project HWUP.

Consultation responses and our views on them

3.5 Both respondents agreed with our consultation position.

Updated view

3.6 We remain satisfied that the North London project should be exempt from consideration for delivery via a competition model.

4. Large project delivery

Section summary

This chapter summarises our May 2023 consultation position and consultation responses regarding large project delivery options. We also set out our updated view.

Background

- 4.1 In the RIIO-2 Final Determinations,³⁰ we set out our approach to late delivery of large projects (i.e. >£100m). The aim of this approach is to ensure that a network company does not benefit financially from a delay to project delivery.
- 4.2 We aim to ensure consumers are protected from any delay in delivery. To this end, we consider setting a Project Delivery Charge (PDC) for each day a project is delivered late.

Consultation position, responses, and updated view

Consultation position

- 4.3 We decided that all projects within the ASTI regime, which includes the North London project, will be subject to an ODI³¹ that rewards/penalises the TOs for delivery against target delivery dates. Based on this, we have not assessed the application of a PDC to the North London.

Consultation responses and our views on them

- 4.4 Neither respondent expressed any views on this matter in response to on the North London FNC consultation. However, NGET did respond with comments related to the ODI mechanism within the ASTI framework through two separate consultations.³² NGET’s comments have been considered within the context of the ASTI framework in a broad sense as well as specially for the North London

³⁰ [RIIO-2 Final Determinations](#), ET Annex (REVISED), page 32 onwards

³¹ [Decision on accelerating onshore electricity transmission investment](#), chapter 7, table 10. Please note that the North London project is listed as project HWUP.

³² [Consultation on accelerating onshore electricity transmission investment](#), ‘Response documents’ – Consultation responses (ZIP), and [Statutory consultation to modify the special licence conditions in the electricity transmission licences: Accelerated Strategic Transmission Investment](#), ‘Response documents’ – Consultation responses (ZIP)

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project. As explained earlier, the benefits associated with option HWUP is primarily driven by the option’s timely delivery and on this basis an ODI is important in delivering consumer benefit.

Updated view

4.5 We remain satisfied that the North London project be subject to an ODI.