

Guidance

Pre-Approval of Solutions by Engineering (PASE): self-build and transfer

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This guidance accompanies our consultation on proposals to expand self-build and transfer for transmission level assets. It is intended for connecting customers seeking to self-build and transfer high voltage transmission connection assets, or infrastructure assets valued at up to £40 million.

This guidance explains how Ofgem’s Pre-Approval of Solutions by Engineering (PASE) framework applies to self-build and transfer projects, and its role in the design and approval of transmission assets. It sets out the design principles and engineering solutions supported by PASE, the circumstances in which Ofgem approval is required, and the evidence connecting customers should provide where proposed designs differ from PASE Primary Options. The guidance also describes the approval process, assessment stages, dispute arrangements, requirements for material project changes, and our approach to non-compliance.

Our aim is to provide clarity for connecting customers, Transmission Owners and other relevant parties. Stakeholders are invited to provide comments through the associated [consultation on self-build and transfer](#).

Following consultation, we may update this guidance to reflect stakeholder feedback, practical implementation considerations, or changes to the principles underpinning the framework, including changes affecting the impact of self-build and transfer on consumer costs. Revised guidance will be published alongside our decision on next steps.

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Executive summary

Scope of the Guidance

Self-build and transfer gives a connecting customer, or a third party acting on their behalf, the option to build specified transmission connection assets before transferring them to the relevant Transmission Owner to own, operate and maintain.

Pre-Approval of Solutions by Engineering (PASE) is a framework of pre-approved optioneering designs, preferred technology types and engineering configurations for self-build and transfer assets. PASE sets out the design options that connecting customers are encouraged to consider when developing self-build and transfer projects and sets out the key principles underpinning the framework.

This PASE guidance applies to self-build and transfer arrangements for high-voltage transmission connection assets or infrastructure assets of value up to £40 million. This guidance is not relevant for self-build and transfer of infrastructure assets of value greater than or equal to £40 million – such assets should apply through the [RIIO3 Load Reopener process](#). This draft PASE guidance is subject to feedback received through the consultation process. It should be read alongside the [self-build and transfer consultation](#), which seeks views on proposals to expand the scope of self-build and transfer for transmission level assets. The guidance will be finalised and implemented alongside the self-build and transfer policy.

Definitions

A PASE Primary Option is an engineering design that fully complies with the principles of PASE. A PASE Variant Option is an adapted engineering design that remains consistent with PASE principles but differs from a PASE Primary Option to reflect system, locational or project circumstances which may be suitable subject to site justification. A Non-PASE Aligned Option is a design that does not comply with either a PASE Primary Option or PASE Variant Option and therefore requires additional justification before it can proceed.

Design Approval Framework

The PASE design approval framework for self-build and transfer has been developed from the framework used for the approval of regulated assets. Ofgem approval is not required where the connecting customer utilises a PASE Primary Option. Where a connecting customer proposes a PASE Variant Option or a Non-PASE Aligned Option, Ofgem approval is required before the final design is agreed with the Transmission Owner. The connecting customer must first submit an Eligibility Letter, followed by a Needs Case Assessment and then a Project Assessment. Ofgem will determine the evidence requirements at each stage of the process, and the connecting customer will share initial and detailed designs with Ofgem, as the design progresses. This guidance sets out the review process and associated assessment timelines. Evidence submitted

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by connecting customers should be robust and clearly structured, demonstrating why their proposed solution represents the most appropriate and efficient option. When submitting evidence, connecting customers should utilise the templates included in this guidance. Standardised templates are intended to support a consistent approach to submissions and help facilitate timely regulatory assessments.

Identification of non-compliance

Where a design previously treated as a PASE Primary Option should have been classified as a PASE Variant Option or Non-PASE Aligned Option, Ofgem may take action to address the non-compliance and ensure the project follows the appropriate approval pathway. Projects still in the design phase will be required to obtain the necessary approvals before progressing further through the self-build and transfer process. Ofgem will assess each case individually, taking a proportionate approach that reflects the nature and extent of the non-compliance. Where potential non-compliance is identified, the relevant Transmission Owner will be expected to provide, upon request, any information or evidence necessary to support Ofgem's assessment.

Disputes Process

Where a proposed design is not approved, Ofgem will explain its decision and provide the connecting customer with an opportunity to submit one revised design for reconsideration. Ofgem encourages early and ongoing engagement throughout project development to promote transparency and help resolve issues before a formal decision is reached. Any revised design must be submitted within three months, clearly setting out how it addresses the reasons for non-approval, identifying any design changes and updated evidence. Ofgem will then assess the submission and issue a final decision.

Material Project Changes

Connecting customers must notify Ofgem promptly where a project has materially changed between assessment stages, including where there are significant design changes or departures from an approved PASE Variant Option or Non-PASE Aligned Option. Where uncertainty exists, connecting customers are encouraged to seek guidance from Ofgem on whether a change constitutes a material project change. A standardised submission template must be completed and supported by appropriate evidence covering impacts on project need, option selection, costs, delivery and risks. Ofgem will review the information provided to determine whether the project remains within the scope of the original approval, whether further evidence is required, or whether the project should return to an earlier assessment stage for further scrutiny.

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1. Introduction

Background to self-build and transfer

- 1.1 Self-build and transfer, also known as contestable build, gives a connecting customer, or a third party acting on their behalf, the option to build specified transmission connection assets and transfer them to the relevant Transmission Owner to own, operate and maintain. We propose to expand the scope of self-build and transfer so that connecting customers can self-build and transfer all assets from the connection point to the existing transmission system that are sole use at the time the adoption agreement is entered into.
- 1.2 For the purposes of this guidance, the adoption agreement is the agreement between the Transmission Owner and the connecting customer which sets out the terms and conditions of the self-build and transfer. The connecting customer is the party which holds the transmission connection offer and is party to the bilateral connection agreement. The Transmission Owner is the owner of the part of the existing transmission network to which the connecting customer wants to transfer the self-build assets.
- 1.3 The consultation published alongside this guidance sets out the current scope of self-build and transfer, and the rationale for expanding it, in more detail.

What assets can I self-build and transfer?

- 1.4 Connecting customers can self-build and transfer all assets that are solely required for their connection, from the connection point to the existing transmission system, provided those assets are sole use at the time the adoption agreement was entered into. The consultation published alongside this guidance sets out which works are outside the scope of the self-build and transfer arrangements.

Purpose of PASE

- 1.5 The expansion of self-build and transfer means a wider range of parties may be involved in developing assets that connect to, and interact with, the transmission system. This creates a need for a clear design framework that supports efficient delivery while managing system, consumer and regulatory risks.
- 1.6 PASE provides a framework for the design of self-build and transfer assets and sets out Ofgem's pre-approved engineering design solutions. PASE was developed to support the efficient approval of regulated assets. An adapted version of PASE is proposed for self-build and transfer arrangements to establish a broadly consistent approval process. The framework sets out high-level design and engineering solutions intended to promote consistent, standardised and efficient infrastructure design, while enabling appropriate scrutiny where proposed designs depart from the preferred approach. As outlined in our

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consultation, we consider that the use of PASE will support the delivery of optimal whole-life cost solutions. It will also provide greater clarity to connecting customers, Transmission Owners and relevant third parties on the design solutions applicable to self-build assets.

Scope of Guidance

1.7 This guidance is applicable to connecting customers seeking to self-build and transfer high voltage transmission connection assets, or infrastructure assets of value up to £40 million, to a Transmission Owner. This guidance is not relevant for self-build and transfer of infrastructure assets of value greater than or equal to £40 million – such assets should apply through the [RIIO3 Load Reopener process](#). This approach ensures an appropriate level of regulatory scrutiny by Ofgem, while managing the system risks that may arise where responsibility for constructing connection assets rests with parties other than the Transmission Owner.

1.8 This guidance sets out:

- the objectives, principles and design requirements of the PASE framework
- the evidentiary requirements applicable to different categories of PASE design and the associated approval processes
- the process to be followed where a dispute arises between relevant parties
- the process to be followed where a self-certified PASE Primary Option is later found not to comply with PASE requirements
- the process for managing material project changes
- the process to be followed where a project is cancelled
- the justification guidance, templates and supporting documentation, required for submissions

1.9 This guidance should be read in conjunction with:

- the self-build and transfer consultation

1.10 Following consultation, the approved guidance document should be read in conjunction with the following documents, which are currently under development by Transmission Owners:

- the adoption agreement template
- the relevant Transmission Owner's technical standards and specifications

1.11 This guidance should be read in conjunction with the relevant licence condition documents:

- [Connection and Use of Systems Code \(CUSC\)](#), section 14

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- 1.12 This draft PASE guidance is subject to feedback received through the consultation process. It should be read alongside the self-build and transfer consultation, which seeks views on proposals to expand the scope of self-build and transfer for transmission level assets. The guidance will be finalised and implemented alongside the self-build and transfer policy.
- 1.13 The guidance may be further amended at a later date, following feedback on the practical implementation of the process or in response to change in the underlying principles on which the PASE review is undertaken (for example, a change in the impact of self-build connection assets on wider consumer costs).

How is PASE applied in self-build and transfer?

- 1.14 The detailed process for the expansion of self-build and transfer for high voltage assets is set out in the accompanying consultation document. The diagrams below illustrate the PASE approval process for the different design solution categories that a connecting customer may choose to pursue. The evidentiary requirements for each design solution are set out in detail in the latter part of this guidance.

Figure 1: Design Process for PASE Primary Option

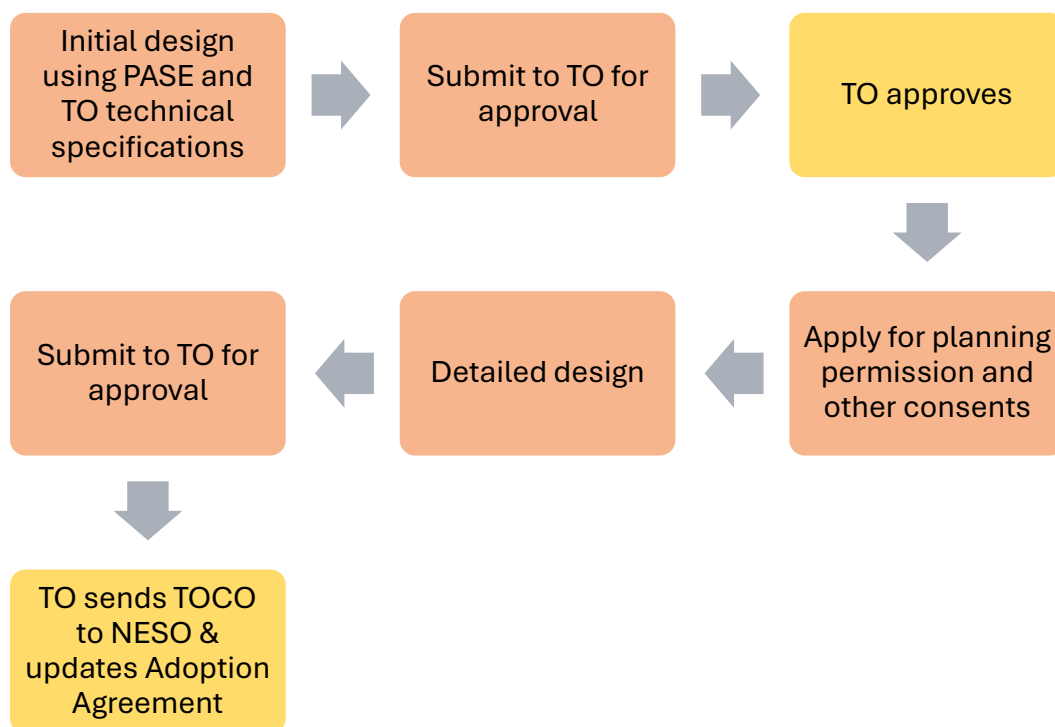


Figure 1 – ‘Design Process for PASE Primary Option’ depicts a flow chart that outlines the process a connecting customer utilising a PASE Primary Option must follow. The connecting customer develops an initial design using PASE and technical specifications and submits it to the Transmission Owner for approval. Once approved

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by the Transmission Owner, the connecting customer obtains planning permission and other required consents, completes the detailed design and submits the detailed design to the Transmission Owner for final approval. Following approval, the Transmission Owner sends the Transmission Owner Construction Offer to the National Energy System Operator and updates the adoption agreement.

Figure 2: Design Process for PASE Variant / Non-PASE Aligned Option

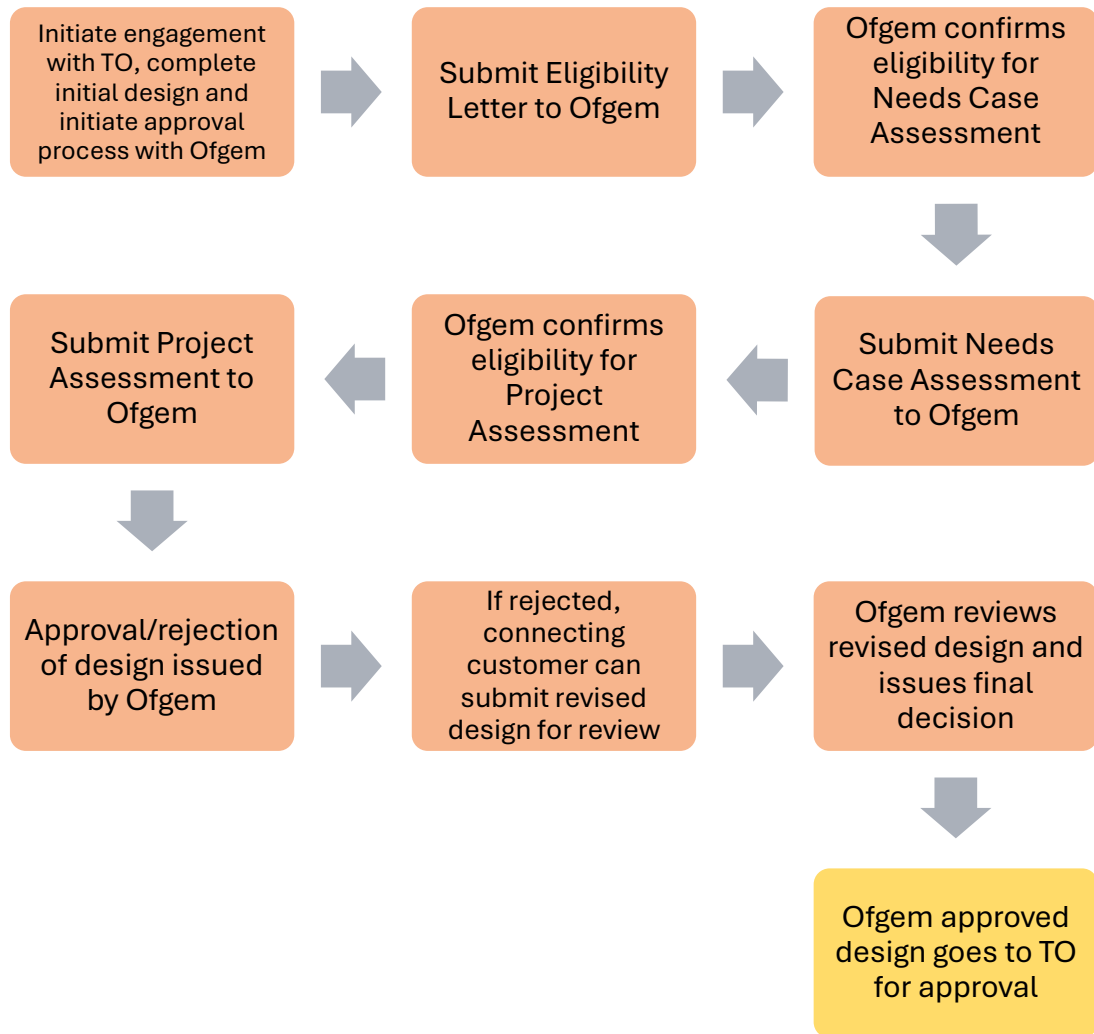


Figure 2: ‘Design Process for PASE Variant and Non-PASE Aligned Option’ depicts a flow chart showing the Ofgem approval process for a PASE Variant or Non-PASE Aligned Option. The process starts with the connecting customer engaging with the Transmission Owner. The connecting customer completes the detailed design and submits it to Ofgem, followed by an Eligibility Letter. If requested by Ofgem, the customer submits a Needs Case Assessment and then, if requested by Ofgem, a Project Assessment. Ofgem approves or rejects the design. If rejected, the customer

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may submit a revised design for approval. Ofgem reviews the revised design and issues a final decision. Following approval, the Transmission Owner approves the final design.

Ofgem Approval Process

- 1.15 Ofgem has set out the high-level design solutions that apply to self-build and transfer through the PASE framework. The role of Ofgem depends on the type of design being proposed.
- 1.16 **PASE Primary Option:** Ofgem approval is not required where the self-build assets fully comply with a PASE Primary Option.
- 1.17 **PASE Variant Option:** Ofgem approval is required for designs that use a PASE Variant Option. Ofgem approval for options which are not a PASE Primary Option is a condition in the adoption agreement template, and this condition cannot be removed.
- 1.18 **Non-PASE Aligned Option:** Ofgem approval is required for designs that do not comply with PASE. Ofgem approval for options which are not a PASE Primary Option is a condition in the adoption agreement template, and this condition cannot be removed.
- 1.19 We provide templates for submissions to help expedite our assessment. These templates are set out in [Appendix 3 - Templates for Submissions](#).

Context and related publications

- 1.20 This guidance relates to proposed policy reform to support self-build and transfer of assets connecting to the transmission network. The guidance should be read in conjunction with the [self-build and transfer consultation](#) document.
- 1.21 Self-build and transfer has been developed under the Connect pillar of Demand Connections Reform. Further details on the context of the proposed measure can be found in the [Connect update: Demand Connections Reform](#), published in June 2026.
- 1.22 The requirement to comply with PASE design principles aligns with requirements for Transmission Owners delivering regulated connection and infrastructure assets. Further detail on the specific requirements for Transmission Owners can be found in the [RIIO3 Load Re-opener Guidance and Submission Requirements](#) document.

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2. Ofgem role in self-build and transfer

Ofgem priorities

- 2.1 Our principal objective and duties are set out in the [Energy Act 2023](#), the [Electricity Act 1989](#) and the [Deregulation Act 2015](#). These include protecting the interests of current and future consumers, promoting competition, supporting the Secretary of State to comply with the [Climate Change Act 2008](#) and promoting economic growth.
- 2.2 Self-build and transfer can support these duties by giving connecting customers greater choice over how their transmission connection assets are delivered. Where used effectively, it can promote competition in the provision of transmission level connections, support more efficient project delivery and help deliver benefits for consumers.
- 2.3 In some cases, self-build and transfer may also allow demand projects to electrify sooner. This can support the wider transition to net zero and contribute to the Secretary of State's duties under the Climate Change Act 2008.
- 2.4 This guidance forms part of Ofgem's wider work to reform the demand connections process. Our aim is to help viable connections and strategic projects progress where appropriate, while maintaining system security, operational integrity and value for consumers.
- 2.5 PASE supports this by setting clear design expectations for self-build transmission assets and identifying where Ofgem scrutiny is required. PASE provides a transparent process for assessing PASE Variant Options and Non-PASE Aligned Options. It sets out the evidence requirements that connecting customers must meet and the factors and principles Ofgem will consider when reviewing proposals. By ensuring that alternative designs are supported by robust justification, the framework helps manage the risk of inefficient assets being developed while allowing flexibility where a different approach is warranted. By clarifying Ofgem's role, the relevant design solutions and the process for resolving disputes, PASE should give connecting customers, Transmission Owners and third parties greater confidence in using self-build and transfer.

What is PASE?

- 2.6 PASE is a framework of pre-approved optioneering designs, preferred technology types and configurations that are typically efficient, deliver the lowest whole-life cost to consumers and, where applicable, build in capacity for future network expansion. PASE sets out the design options that connecting customers are encouraged to consider when developing self-build and transfer projects and sets out the key principles underpinning the framework. PASE does not prescribe how

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a connecting customer should develop a project. Instead, it provides a clear basis for assessing whether a proposed design aligns with Ofgem's expectations.

- 2.7 Where a connecting customer proposes a PASE Variant Option, or a Non-PASE Aligned Option, Ofgem acknowledges a greater level of scrutiny is required and expects the connecting customer to provide robust justification illustrated through the submission of the required evidence.
- 2.8 Ofgem expects a proportionate level of ongoing engagement throughout the development of projects to ensure transparency on optioneering and design decisions. Early dialogue helps identify and resolve issues before they impact delivery timelines or project delivery.

Objectives of the PASE Framework

- 2.9 **Economic benefit:** PASE prioritises lowest whole-life cost solutions, consistent with Ofgem's statutory duties.
- 2.10 **Future proofing:** PASE-approved solutions anticipate future network needs.
- 2.11 **Environmental and community considerations:** The PASE framework evaluates solutions that incorporate prevailing network and site constraint considerations through standardised designs and targeted justification.
- 2.12 **Clarity:** PASE provides specific engineering configurations, reducing ambiguity in project optioneering.

Principles of the PASE Framework

- 2.13 **Whole-life cost efficiency:** PASE recognises that some solutions may involve higher upfront costs but offer the lowest lifetime cost, typically over asset lives of over 40 years. Based on engineering expertise and experience with historical projects, listed solutions provide benefits such as improved network performance and reduced long-term costs, justifying initial investment.
- 2.14 **Adaptability and future proofing:** PASE prioritises solutions that are flexible, well-established, and capable of adapting to future technological or policy changes. This means designs that provide optionality for system growth, reducing the risk of asset stranding and enabling capacity expansion without major redesign. This combination of proven design and forward-looking capability gives confidence in long-term value and reliability.
- 2.15 **Standardisation and proven design:** Solutions align with standard engineering configurations that have demonstrated reliability and cost efficiency. This reduces design risk and accelerates delivery.
- 2.16 **Alignment with net zero and system growth:** Solutions help support decarbonisation targets, facilitate renewable integration, and maintain system stability under evolving generation and demand patterns.

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- 2.17 **Risk reduction:** By using pre-approved solutions, connecting customers reduce uncertainty and avoid extensive optioneering reviews, provided compliance is demonstrated.
- 2.18 This aligns with the [requirements](#) that a Transmission Owner must adhere to in delivery of assets within the regulated asset base. These criteria will be considered proportionately for the likely potential impact of the relevant asset on the wider consumer base, with particular consideration around the future proofing of the asset.

Ratings Requirements

- 2.19 PASE sets expectations for construction voltages; however, we anticipate that connecting customers may choose to operate the equipment at lower voltages than designed. For example, 220kV may be operated at 132kV, or 400kV may be operated at 275kV until the wider system need arises for the operational voltage change. In this approach, we recognise that there are some assets which are voltage specific and so there may be future costs in the uprating of this equipment.

PASE Primary Option

- 2.20 A PASE Primary Option is an engineering design that fully complies with the principles of PASE and represents the optimum approach. Connecting customers are encouraged to adopt PASE aligned solutions during optioneering, where this is appropriate.

Ofgem Role

- 2.21 Where all elements of a self-build asset design fully comply with a PASE Primary Option, Ofgem approval is not required.
- 2.22 [Figure 1](#) sets out the design and approval process applicable to a PASE Primary Option.
- 2.23 The options that constitute a PASE Primary Option are shown in [Appendix 2](#) – Frameworks for PASE Primary and PASE Variant Options.

PASE Variant or Non-PASE Aligned Option

- 2.24 A PASE Variant Option is an adapted engineering design that remains consistent with PASE principles, but where any one component of the design differs from a PASE Primary Option to reflect specific system, locational or project circumstances which may be suitable subject to site justification.
- 2.25 Options that constitute a PASE Variant Option are shown in

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2.26 [Appendix 2 – Frameworks for PASE Primary and PASE Variant](#) Options.

2.27 A Non-PASE Aligned Option is a proposed design for self-build assets where any component of the design does not comply with either a PASE Primary Option or a PASE Variant Option and therefore requires additional justification before it can proceed.

Ofgem Role

2.28 Ofgem approval is required for designs that use a PASE Variant or Non-PASE Aligned Option. Ofgem approval for options which are not a PASE Primary Option is a condition in the adoption agreement template, and this condition cannot be removed.

Evidentiary Requirements

2.29 Where a proposal deviates from PASE but demonstrates clear justification and consumer benefits, Ofgem may determine that the design can progress. In such cases, we expect proportionate supporting evidence focused on the specific areas of deviation from the Primary Option, as detailed in [Appendix 1 - Justification Guide](#). This evidence should demonstrate why the proposed approach is appropriate and in consumers' interests. The nature and level of evidence provided should be appropriate to the maturity of the project and the relevant stage of the PASE process. As projects progress through the PASE stages, we would generally expect supporting evidence to become increasingly detailed and supported by increasingly robust technical justification. Throughout the review process, customers will share both the initial and detailed designs with Ofgem, as project designs are developed. For a PASE Variant Option or Non-PASE Aligned Option, the connecting customer must follow the steps as outlined below.

Figure 3 – High level process for Ofgem review of PASE Variant or Non-PASE Aligned Option

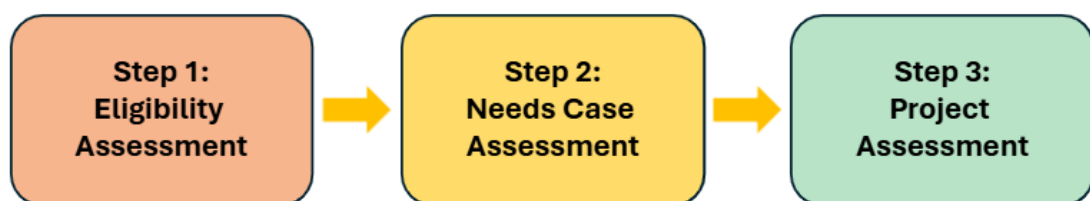


Figure 3: 'High level process for Ofgem review of PASE Variant or Non-PASE Aligned Option' depicts a flow chart showing the high-level process for Ofgem's review of a PASE Variant Option or Non-PASE Aligned Option. The process consists of three

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sequential stages, outlined in further detail later in the text: Step 1, Eligibility Assessment; Step 2, Needs Case Assessment; and Step 3, Project Assessment.

Step 1: Eligibility Assessment

- 2.30 Connecting customers are expected to provide proportionate, well-structured evidence through the Eligibility Letter demonstrating why a Variant Option or Non-PASE Aligned Option represents the most appropriate solution. The Eligibility Letter provides key early-stage information in a standardised format, including the project's drivers, shortlisted options, indicative technical details, costs, delivery timelines, and interactions with other projects.
- 2.31 The explanation should set out any relevant planning, environmental, geographical, or deliverability constraints, and demonstrate how the proposed solution delivers long-term value for consumers. It should explain how the option aligns with the principles set out in paragraphs [2.13](#) to [2.17](#) and include an assessment of credible alternatives, highlighting any site-specific factors that justify a departure from the Primary Option.
- 2.32 Where relevant and practicable, submissions should be supported by technical evidence, cost benefit analysis (CBA)¹ and whole-life cost analysis (WLCA)², environmental and consenting considerations, and stakeholder engagement outcomes. Taken together, this evidence should demonstrate that the proposed PASE Variant Option or Non-PASE Aligned Option is justified.
- 2.33 The template and submission requirements for the Eligibility Letter are found in Appendix 3, [Stage 1 Template – Eligibility Letter](#).
- 2.34 At key stages in the review process the customer will share initial and detailed designs with Ofgem, as the design progresses. It is expected that engagement with the Transmission Owner on the design will happen in parallel with this, and that the final Transmission Owner design approval will happen after the Ofgem final approval.
- 2.35 Ofgem encourages connecting customers to submit the Eligibility Letter at the earliest appropriate stage of project development. Early engagement helps ensure that design choices can be considered in a timely manner, potential evidential issues can be identified and resolved, and delays later in the assessment process can be minimised.
- 2.36 Our assessment of an Eligibility Letter may include but is not limited to the criteria set out below.

¹ Cost Benefit Analysis: A structured assessment that compares the costs and benefits of credible options to identify the solution that is expected to deliver the greatest long-term value for consumers.

² Whole Life Cost Analysis: A structured assessment of lifetime cost including construction, O&M, carbon and extendibility impacts.

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- 2.37 **Optioneering quality:** We evaluate the clarity and robustness of the optioneering process and option shortlist.
- 2.38 This will include assessing whether all technically feasible options and operational measures have been appropriately considered, and whether the shortlisting process and justification for the preferred solution are robust. In doing so, we will consider factors including whole-life costs, optionality, deliverability, and community and environmental impacts and benefits, taking account of the supporting evidence provided.
- 2.39 **Economic case:** We will assess whether the preferred solution is in consumers' interests, having regard to community and environmental impacts, alongside any wider economic benefits.
- 2.40 We will undertake a review of high-level CBA and WLCA where these are provided, and we may undertake a light-touch validation of assumptions and inputs used in quantitative analysis.
- 2.41 **Future Needs Case Requirements:** We will identify any areas where further evidence, analysis or justification may be required to support the Needs Case Assessment (required at Step 2).
- 2.42 **Environmental Factors:** While controlled by planning and environmental requirements, we will consider the likely relative environmental impact of the proposed solution, and of the alternative proposals considered. For example, we remain supportive of connecting customers avoiding the use of Sulphur Hexafluoride (SF₆)³ where possible and support the use of alternatives.
- 2.43 Following completion of the review, Ofgem will provide project-specific direction on the further information and evidence expected at the Needs Case Assessment stage.
- 2.44 Ofgem aims to review and determine the initial Eligibility Assessment within three months, provided all relevant information has been submitted to Ofgem's satisfaction. The review clock will start when Ofgem has acknowledged submission of the evidence relating to the Eligibility Assessment. The guidance relating to the submission process is found in [Submission of Data](#).

Step 2: Needs Case Assessment

- 2.45 Following Ofgem's completion of the Eligibility Assessment, connecting customers must complete a Needs Case Assessment. At this stage, Ofgem will set out the specific information and evidence required as part of the Needs Case

³ SF₆ is a potent greenhouse gas used in electrical switchgear due to its excellent insulating properties. However, its environmental impact is a key area of stakeholder concern.

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Assessment. The Needs Case Assessment confirms that the proposed engineering solution delivers value for consumers.

- 2.46 Connecting customers must demonstrate that the proposed design is technically viable, delivers value over its lifetime, and appropriately considers consumer, environmental and wider system impacts.
- 2.47 As part of the Needs Case Assessment, connecting customers may be requested to submit a CBA that demonstrates relative economic value of credible alternatives by quantifying monetised costs and benefits of the project to consumers.
- 2.48 We may also request connecting customers to submit a WLCA that either complements or is fully integrated into the CBA, which examines the full lifetime cost implications of each option including, but not limited to, construction, operation, maintenance, carbon impacts, replacement and future extendibility.
- 2.49 Taken together, these tools can demonstrate that the preferred solution delivers long-term value for consumers, avoids future inefficiencies or asset stranding, and reflects sound engineering and economic judgement.
- 2.50 The relevant templates for the Needs Case Assessment are found in Appendix 3, [Stage 2 Template – Needs Case Assessment](#).
- 2.51 Following completion of the review, Ofgem will provide project-specific direction on the further information and evidence that may be required at the Project Assessment stage.
- 2.52 Ofgem aims to review and determine the Needs Case Assessment within four to six months, provided all relevant information has been submitted. The review clock will start once Ofgem has acknowledged submission of the evidence relating to the Needs Case Assessment. The guidance relating to the submission process is found in [Submission of Data](#).

Step 3: Project Assessment

- 2.53 Following Ofgem's review of the Needs Case Assessment, connecting customers may be required to complete a Project Assessment.
- 2.54 The purpose of this stage is to clarify what the Transmission Owner is accountable to deliver and the costs and risks associated with the delivery of that connection. For the avoidance of doubt, the focus should be on relevant infrastructure assets or operation and maintenance costs of connection assets.
- 2.55 The connecting customer must provide a single submission which, where relevant and appropriate, may include:

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- a robust, well-justified cost estimate that is reflective of project maturity and cost firmness; supported by engineering designs, procurement outcomes, and risk assessments
- detailed delivery plans, including strategy and risk management – this includes a robust P50 and expected delivery date including the methodology used⁴
- a complete cost breakdown, including a clear summary of costs by asset type, with supporting calculations, assumptions and evidence clearly referenced, submitted using an evidence form provided by Ofgem (final form will be confirmed as part of the self-build and transfer policy implementation)
- a clear indication of the ‘firmness’ of each cost, to distinguish between costs that are fixed, agreed and estimated, in order to determine the confidence that can be placed on those figures (classification for this ‘firmness’ is set out in Appendix 2, [Table 3 – Firmness of Cost Submissions](#))
- All referenced documents, including contracts, quotes, studies, and original source data

2.56 The template for the Project Assessment is found in Appendix 3, [Stage 3 Template – Project Assessment](#).

2.57 We do not currently intend to prescribe a specific timeframe for the review of evidence submitted under this section, recognising that project-specific circumstances may affect the timing of submissions and assessments.

2.58 Following review of the Project Assessment, Ofgem will issue a decision as to whether the PASE Variant Option or Non-PASE Aligned Option has been approved.

Summary of Evidence Stages

2.59 Ofgem will first review the Eligibility Letter and determine the evidence required as part of the Needs Case Assessment, where applicable. Following its review of the Needs Case Assessment, Ofgem will decide whether the project may proceed to the Project Assessment stage and will specify whether there are any specific evidence requirements.

Submission of Data

2.60 We expect to adopt a process based on the key components set out in this draft guidance. The detailed arrangements for connecting customers to submit data will be finalised and implemented through the final PASE guidance, which will be published alongside our self-build and transfer policy.

⁴ A P50 delivery date is the date by which there is a 50% probability that the project will be completed.

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- 2.61 Evidence submissions should be made via Huddle and connecting customers must provide a minimum of one month's notice in writing to Ofgem ahead of submissions – this will enable a faster Ofgem assessment. Ofgem expects ongoing engagement throughout the development of projects to ensure transparency on optioneering and design decisions. Early dialogue helps identify and resolve issues before they impact timelines or costs.
- 2.62 Where required, Ofgem will initiate a supplementary questions process and bilateral engagement to clarify data that has been submitted.

Outcome of Decision

- 2.63 Ofgem approval for any option that is not a PASE Primary Option is a condition of the standardised adoption agreement.
- 2.64 The decision Ofgem issues will fall into one of the following categories:
- Justified – no material concerns raised and the design can proceed
 - Not justified – engineering solution is not justified and there are significant concerns that must be resolved
- 2.65 If Ofgem does not issue an approval, we will provide the connecting customer with a clear explanation of the reasons for that decision. The connecting customer will then have an opportunity to address these issues and submit a revised design for further review. The [process for revising and resubmitting a design](#) is set out below.

Disputes Process

- 2.66 Ofgem expects connecting customers to engage with us throughout project development. Early and ongoing engagement should support transparency in the optioneering process and help identify and address potential concerns about a proposed design before a formal decision is made.
- 2.67 Where Ofgem does not approve a PASE Variant Option or Non-PASE Aligned Option, we will explain the reasons for our decision. The connecting customer should contact Ofgem if it requires clarification or considers that relevant information has not been taken into account.
- 2.68 A connecting customer may submit one revised design that addresses the reasons for Ofgem's decision. The revised design must be submitted within three months of the decision and should clearly identify:
- the changes made to the design
 - how those changes address the reasons given by Ofgem for not granting approval
 - any new or updated supporting evidence

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- any information that has not been amended since the original submission
- 2.69 Ofgem will assess the revised design and then issue a further response, either requesting further information or confirming the final approval decision on the proposed design.

Identification of non-compliance

- 2.70 If Ofgem becomes aware that a design previously treated as a PASE Primary Option should instead have been classified as a PASE Variant Option or a Non-PASE Aligned Option, we will take appropriate action to address the non-compliance.
- 2.71 Where the project remains in the design phase, the connecting customer will be required to obtain Ofgem approval in accordance with the process set out in this guidance before progressing further through the self-build and transfer framework.
- 2.72 Ofgem will assess each instance of non-compliance on a case-by-case basis. Any enforcement action taken will be proportionate to the circumstances of the case and will reflect the nature and extent of the regulatory breach. However, enforcement action may include termination of the Bilateral Connection Agreement. Where Ofgem identifies potential non-compliance, the relevant Transmission Owner will be expected to cooperate with the investigation process.

Material Project Changes

- 2.73 Where a project has significantly changed since or between the Eligibility Assessment, Needs Case Assessment and Project Assessment, the connecting customer must notify Ofgem as soon as possible. Material changes may include deviation from the PASE Variant Option or Non-PASE Aligned Option previously approved or major design alterations.
- 2.74 Connecting customers should contact Ofgem if they are unsure if a project change results in a material change.
- 2.75 Connecting customers must complete and submit the template found in [Template for Material Project Change](#).
- 2.76 The submission should include (where appropriate):
- project identification details (name, reference, original PASE classification)
 - summary of changes and reasons for change
 - updated project drivers and justification for continued need
 - revised optioneering analysis and rationale for preferred option

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- updated CBA, WLCA and sensitivity analysis; Ofgem will direct whether the updates should be included as part of the Material Project Changes submission or as part of supporting evidence at the Needs Case Assessment or Project Assessment stage
 - delivery and risk impacts, including mitigation strategies
- 2.77 supporting evidence (for example, technical drawings, cost reports, stakeholder correspondence)
- 2.78 Ofgem will review the submission to determine:
- whether the project remains in scope of the original project need
 - whether additional reporting is required at the Needs Case Assessment or Project Assessment stage
 - whether the project should revert to Eligibility Assessment for further scrutiny
 - whether the scope of the project has fundamentally changed to the point the preferred option is no longer an appropriate option in the interest of consumers
- 2.79 Ofgem will notify the connecting customer in writing:
- whether the project is still in scope and any additional reporting requirements for either the Needs Case Assessment or Project Assessment
 - if Ofgem has determined the preferred option is no longer justified and in the interest of consumers, Ofgem may ask connecting customers to reapply through repeat Eligibility Assessment
 - if the project is still justified and the proposed solution is still efficient, in this case there would be no further information required and the project would have approval to proceed

Project Cancellation

- 2.80 If an approved project is later cancelled, the connecting customer should notify Ofgem in writing. Connecting customers must complete the template found in [Template for Cancelled Projects](#).
- 2.81 Where the connecting customer decides to proceed through Transmission Owner delivery instead, the Transmission Owner may choose to use the design previously approved by Ofgem, providing the categorisation as a connection asset, or infrastructure asset of value less than £40 million, does not change. The connecting customer and Transmission Owner must notify Ofgem of the change and identify any material changes to the approved design or supporting evidence. Ofgem will determine whether any further assessment or approval is required.

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Conclusions and next steps

- 2.82 The PASE framework is intended to provide a clear and robust process for the design and assessment of self-build and transfer assets. By setting out Ofgem's design expectations, evidence requirements and approval process, the framework should give connecting customers greater clarity and confidence when considering the self-build and transfer option. It also supports consistent and efficient decision-making while ensuring that proposed designs are subject to appropriate regulatory scrutiny.
- 2.83 Following the close of the accompanying self-build and transfer consultation, we will consider responses received and assess whether any changes are required to the draft guidance and submission templates. Subject to the outcome of the consultation, we intend to finalise and publish the guidance alongside the wider self-build and transfer policy.

Send us your feedback

We are keen to receive your feedback about this guidance. We would also like to get your answers to these questions:

- Do you have any comments about the quality of this guidance?
- Do you have any comments about its tone and content?
- Was it easy to read and understand? Or could it have been better written?
- Do you have any further comments?

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

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Appendices

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Appendix 1 - Justification Guide

- A1.1 This section provides guidance on the evidence that a connecting customer may submit to support our review of the Eligibility Letter, Needs Case Assessment and Project Assessment.
- A1.2 We will consider a range of evidence when reviewing submissions at each of these stages, but the overall aim of our approach is to be proportionate. Connecting customers should consider what evidence is most appropriate to support their proposal, having regard to the nature and maturity of the project.
- A1.3 We recognise that the level of detail and robustness of evidence will vary depending on the stage of the project. Submissions should therefore provide evidence proportionate to the project's maturity.

Stage 1 – Eligibility Letter

Overview

- A1.4 We expect connecting customers to provide the Eligibility Letter as early as possible. This expedience will enable us to provide confidence over the regulatory review process and timescales as early as possible.

Thresholds and Submissions

- A1.5 When proposing a PASE Variant Option, the connecting customer must provide proportionate, robust, and clearly structured evidence demonstrating why the alternative solution represents the most appropriate and efficient choice. Eligibility Letter submissions seeking confirmation of Needs Case Assessment ('Early Options Needs Case' submissions) should include:
- (a) Clear justification for deviation from a PASE Primary Option: a narrative explaining the constraints, system need, or project-specific conditions that prevent adoption of a PASE Primary Option. This must identify locational, environmental, planning, operational, or engineering factors that materially influence the design choice.
 - (b) Alignment with PASE principles - a concise explanation of how the alternative continues to uphold core PASE principles of efficiency, future-proofing, extendibility, standardisation and consumer value.
 - (c) Comparative optioneering analysis - A transparent comparison of credible alternatives, including the relevant PASE Primary Option. This should address, where possible, whole-life cost benefits, deliverability, network performance, risk, outage implications, community impacts, environmental impacts, and extendibility. The analysis should demonstrate that the PASE Variant Option provides long-term consumer value in the round.

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- (d) Technical evidence supporting the design choice – where possible early technical schematics, site-specific engineering assessments, geotechnical and environmental constraints, substation layouts, routing constraints, planning requirements, and interactions with existing infrastructure. This should demonstrate that the PASE Variant Option is technically appropriate.
 - (e) Deliverability and programme evidence - assessment of any delivery timescales, construction risks, outage requirements, supply chain considerations, land availability, and consenting challenges. Where the PASE Variant Option enables materially faster, lower-risk, or more flexible delivery than a PASE Primary design, this should be clearly articulated and evidenced.
 - (f) Environmental and stakeholder considerations - evidence of environmental impacts, mitigation requirements, community acceptability, planning feedback, and stakeholder engagement. Where PASE Variant Options reduce environmental harm, minimise land take, or improve consenting prospects, the connecting customer must provide supporting evidence.
- A1.6 Supporting documentation - where available any power system studies, National Energy System Operator (NESO) correspondence, cost estimates, risk registers, technical drawings, environmental assessments, procurement intelligence, or any other evidence that supports justification.
- A1.7 Where a connecting customer proposes a Non-PASE Aligned Option, the connecting customer must provide robust and proportionate justification (regarding project maturity and available data) demonstrating why deviation from both PASE Primary and PASE Variant options is necessary and why the proposed alternative represents the most efficient and consumer-focused solution. The following categories of evidence may be provided.
- A1.8 Clear justification for non-alignment - explain why neither the Primary nor Variant PASE option is suitable. This should include:
- (a) specific engineering, locational, or operational constraints that materially prevent adoption of PASE options
 - (b) evidence of environmental, consenting, planning, land, or community constraints that significantly limit PASE-compliant designs
 - (c) explanation of system conditions or project-specific characteristics that make PASE options technically inappropriate or undeliverable
 - (d) this justification must go beyond preference and demonstrate material and evidenced reasons for deviation
 - (e) developer-led scope requirements
- A1.9 Comprehensive optioneering analysis – the connecting customer must provide a full comparison between:

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- (a) all feasible credible alternatives
- (b) the relevant PASE Primary and PASE Variant options and the proposed Non-PASE Aligned Option. This comparison may consider:

1. network performance and operability
2. outage requirements
3. deliverability and programme risk
4. extendibility and long-term optionality
5. community and environmental impacts
6. future energy system scenarios and long-term system need

A1.10 The evidence should, if possible, demonstrate that where the proposed non-PASE Aligned design has an impact on consumer costs, this is economically beneficial over the full asset lifetime, not just in upfront terms.

A1.11 (a) Technical evidence demonstrating viability - the connecting customer should include robust technical documentation showing why the proposed alternative is appropriate. For example:

- (i) engineering schematics
- (ii) site-specific surveys (for example, geotechnical, environmental, routing, topographic)
- (iii) spatial or land-use analyses demonstrating inability to accommodate PASE options
- (iv) fault-level, thermal, and operability assessments
- (v) interaction with existing network topology or constraints
- (vi) detailed explanation of why PASE designs are technically unviable or impose disproportionate risk.

A1.12 The evidence should, if possible, demonstrate technical necessity, not general preference.

A1.13 Deliverability and programme justification. Non-PASE Aligned Options should be supported by clear evidence that they improve or can de-risk delivery compared to PASE alternatives and deliver these improvements in a way that is proportionate to any additional cost. Evidence may include:

- (i) construction and delivery schedules
- (ii) outage planning assessments
- (iii) supply chain evidence and vendor constraints

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- (iv) land access or consenting timelines with documented planning authority feedback
- (v) identification of programme risks with quantified impacts
- (vi) analysis showing that PASE options would result in material delay or higher delivery risk

A1.14 Claims of improved deliverability may be substantiated with evidence, not asserted. For environmental, consenting, and stakeholder evidence – the connecting customer may provide an assessment of:

- (i) environmental impacts and mitigation requirements
- (ii) visual, ecological, or land-use constraints unique to the site
- (iii) planning risks and documented feedback from planning authorities
- (iv) engagement with stakeholders (for example, communities, developers, local authorities, NESO)
- (v) evidence that the proposed non-PASE Aligned Option better aligns with environmental or consenting realities
- (vi) this should include documentation where PASE options were rejected by stakeholders or materially increase planning risk

A1.15 Alignment with consumer value and long-term system needs. Despite non-alignment, the connecting customer should demonstrate how the proposed solution:

- (i) supports long-term consumer value
- (ii) aligns with net-zero and system growth requirements
- (iii) minimises future reinforcement costs
- (iv) avoids asset stranding
- (v) maintains or improves operability and system resilience

A1.16 The connecting customer should, if possible, articulate clearly how any additional cost or deviation delivers measurable long-term benefits consistent with Ofgem's statutory duties.

A1.17 Where available and relevant, the connecting customer should supply the following supporting documentation:

- (i) NESO correspondence
- (ii) planning authority feedback
- (iii) environmental assessments or early EIAs

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- (iv) risk registers
- (v) updated cost spreadsheets
- (vi) route maps, geographic information system drawings, or substation layouts
- (vii) supply-chain correspondence or market intelligence
- (viii) evidence of land discussions or constraints

A1.18 All materials should be proportionate to project maturity.

Variant Option Justification

A1.19 Minimum expectations for ‘robust justification’ at the Eligibility Letter stage for Variant Options or Non-PASE Aligned solutions refer to proportionate, early-stage evidence that clearly explains why the option is appropriate, even if detailed analysis will mature before Needs Case or Project Assessment. As a minimum, a connecting customer should provide:

- (i) a clear explanation of the constraints, system needs, or locational factors informing the choice
- (ii) high-level optioneering demonstrating consideration of credible alternatives
- (iii) indicative early CBA/WLCA signals where available for infrastructure assets
- (iv) articulation of how the proposal remains consistent with PASE principles of efficiency, resilience, and future-proofing

A1.20 This ensures transparency without imposing a requirement for full detailed modelling at an early project maturity stage.

Early CBAs

A1.21 At this early stage, Ofgem recognises that any CBAs will be based on high-level assumptions, reflecting the immaturity of project design and optioneering. Connecting customers are therefore only expected to provide proportionate, outline analysis that demonstrates initial consideration of the relative long-term value of credible options, rather than fully quantified or model-driven assessments. We acknowledge that key inputs such as constraint modelling, refined engineering quantities, procurement, and planning assumptions, may not yet be available.

A1.22 A ‘high-level CBA’ refers to an early stage, indicative comparison of credible options, based on simplified assumptions, broad cost ranges, and initial estimates of benefits. At this stage, we do not expect detailed modelling, granular cost breakdowns, or full system analysis. Instead, a connecting

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customer should outline the main factors driving differences between options, identify material uncertainties, and explain how the assessment will mature as the project progresses.

- A1.23 There is an expectation that a connecting customer can also submit a WLCA or integrate it into the CBA, providing the full lifetime cost profile for each option — including construction, operation, maintenance, carbon impacts, replacement cycles, and future extendibility. Taken together, WLCA and CBA help demonstrate that the preferred solution delivers long-term value for consumers, avoids future inefficiencies or asset stranding, and reflects sound engineering and economic judgement.
- A1.24 To ensure consistency, WLCA inputs should form the lifetime cost basis within the CBA; non-monetisable WLCA findings must be explicitly summarised in the CBA; scenario modelling should vary WLCA cost inputs as well as system benefits; and any anticipatory or strategic investment should be justified through WLCA-supported long-term value arguments.
- A1.25 Recognising project maturity at this stage, CBAs do not need to include any costs associated with changing the delivery dates of options, as all options should be able to start at the same time at this stage of the project.
- A1.26 At the Eligibility Letter stage, a connecting customer should aim to quantify all relevant costs and benefits, to the extent that data maturity allows, when submitting a high-level CBA.
- A1.27 Ofgem may direct CBA requirements for the Needs Case Assessment using evidence received during the Eligibility Letter Assessment Stage.

Stage 2 – Needs Case Assessment

Overview

- A1.28 This section provides guidance for Needs Case Submissions.

Optioneering

- A1.29 A connecting customer must explain how credible alternatives have been considered and evaluated for whole-life cost efficiency, deliverability, and consumer value. A thorough review provides transparency, supports regulatory confidence, and protects consumers by confirming that the chosen option represents the optimal balance of technical performance, environmental impact, and economic benefit.
- A1.30 A connecting customer must provide justification that clearly demonstrates how the alternative design remains aligned with PASE principles of efficiency, resilience, and optionality.

Guidance Pre-Approval of Solutions by Engineering (PASE)**Cost Benefit Analysis (CBA)**

- A1.31 Detailed CBA and WLCA are complementary tools that must be considered together. CBA assesses the relative monetised benefits of reinforcement options while WLCA evaluates the full lifetime cost implications of each option, including construction, maintenance, replacement, carbon impacts and future extendibility. Used in combination, they provide a balanced view of both economic value and long-term cost efficiency, ensuring that short-term savings do not mask higher lifetime costs and that anticipatory or strategic investment is properly assessed. Ofgem recognises that project maturity may limit the availability of detailed data at early project stages; however, WLCA, like CBA, can be applied proportionately, using high-level assumptions and indicative cost ranges where necessary, with uncertainties clearly identified and refined as the project develops.
- A1.32 The connecting customer's submission must include evidence on the expected long-term value of the proposed project for consumers when compared to alternative approaches.
- A1.33 The connecting customer must list all relevant benefits in the CBA, including those that are qualitative, unquantified, or not readily monetisable. This ensures Ofgem has full visibility of the complete benefit case in one place and avoids reliance on arguments dispersed across multiple documents. Where a benefit is not listed in the CBA, Ofgem may need to assume that no such benefit exists. This should focus on the monetised costs and benefits for consumers across different scenarios for future generation. In the case of load-related projects (including generation connections), this may include standalone analysis produced by the NESO.
- A1.34 An explanation of the methodology and assumptions used in the CBA.
- A1.35 Additional analysis looking at the sensitivity of the CBA results to key inputs and assumptions such as the volume of generation and demand projections, discount rates and constraint volumes and costs.
- A1.36 The modelling of the CBA, including:
- a working spreadsheet of the CBA, using Ofgem's template
 - details of the inputs, outputs and any calculated constraint volumes from the CBA
 - any modelling of key assumptions
- A1.37 Relevant information provided by the system operator which has been used to inform the analysis on the proposed reinforcement.

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A1.38 At the Needs Case Assessment stage, any submitted CBA must demonstrate consideration of key factors beyond capital costs. This includes, but is not limited to, quantifying:

- impact of delay
 - assess the financial impact of potential delays on constraint costs and consumer bills
 - include risk-adjusted scenarios and explain assumptions used in modelling
- Socio-economic benefits
 - provide a narrative explaining the expected regional and national economic benefits, including job creation and inward investment
 - quantify benefits using recognised methodologies such as Gross Value Added (GVA) modelling based on ONS multipliers and employment impact studies
 - where quantification is challenging, provide qualitative evidence supported by stakeholder engagement and regional development plans
- Consumer bill impact
 - translate system savings and efficiency gains into indicative consumer bill impacts using methodologies
 - provide clear assumptions and calculations to support these estimates
- Other supporting evidence where possible:
 - Stakeholder engagement records and regional development plans
 - Sensitivity analysis and scenario modelling outputs

Whole Life Cost Analysis (WLCA)

A1.39 A connecting customer should provide Whole Life Cost Analysis (WLCA) for each proposed reinforcement option to show that decision-making reflects the full cost implications over the asset's lifetime. The inclusion of WLCA ensures that options with lower initial costs but higher future liabilities are appropriately assessed against alternatives that may offer better long-term efficiency.

A1.40 WLCA should be presented alongside the Cost-Benefit Analysis (CBA) to provide a comprehensive view of both the economic benefits and the lifetime cost profile of each option.

A1.41 WLCA may include but is not limited to:

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- capital costs (construction), including costs of land, easements, wayleaves and visual amenity mitigations
- cost of community benefits and bill discounts to those living in proximity of new infrastructure (if applicable)
- long term operational cost estimations between different proposals (for example, maintenance, running costs)
- carbon equivalent cost of greenhouse gas emissions in construction and operation over the life of the assets, this includes leakage of any insulation gases
- present value cost of like for like replacement at the end of the economic life of the asset (for example, 40 years for gas insulated switchgear (GIS) or Cables, 60 years for air insulated switchgear (AIS) or overhead lines)
- present complexity estimations for the future extension or reinforcement of any proposals any time during the asset's operational life
- costs to consumers, including evidence of Willingness to Pay (WTP)

A1.42 Ofgem does not require formal WTP surveys. Instead, a connecting customer may provide evidence that consumers or wider stakeholders value the outcomes materially enough to justify the costs. Acceptable evidence includes, but not limited to:

- demonstrated consumer bill benefits through system savings
- evidence that the project mitigates risks or avoids costs that would otherwise fall on consumers
- engagement-based insights showing acceptance or preference for solutions with environmental, community, or resilience benefits
- where available, relevant industry or government WTP research (for example, on reliability, decarbonisation, or visual amenity)

Operability and Extendibility

A1.43 All templates include extendibility cost elements for substations. A connecting customer should include the cost of the extension. Where the site is not extendible, a connecting customer should clarify this in their submissions and include the estimated cost of the additional build of a further substation.

A1.44 A connecting customer should also demonstrate how the proposed solution supports long-term system needs and optionality (extendibility and spare capacity) and avoids asset stranding through:

- whole-life cost comparison of future reinforcement scenarios

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- extendibility assessment (for example, ability to add bays or circuits without major redesign)
- spare capacity modelling against Future Energy Pathways (FEP)
- Supporting Evidence:
 - technical drawings showing space for expansion
 - land acquisition plans and cost estimates
 - scenario modelling outputs
 - narrative explaining optionality benefits and risk mitigation

A1.45 Where the connecting customer is choosing to utilise a solution which limits present or future operability or extendibility, the connecting customer should highlight this and justify through CBA use.

Stage 3 – Project Assessment**Overview**

A1.46 This section details the Project Assessment overview.

Main Cost Submission

A1.47 Where a connecting customer is justifying their costs, we expect that clear cost drivers will be provided with associated factors clearly justified and evidenced. For the avoidance of doubt, this information will only be required in relation to infrastructure costs envisaged as part of the project.

A1.48 The connecting customer must provide a breakdown of all relevant costs and cost schedules associated with the project in spreadsheet form. This main cost spreadsheet may include a summary tab of the entire project construction costs and separate tabs or sheets with a cost disaggregation for each asset type (for example, overhead line). These high-level costs may be indexed to supporting spreadsheets (or tabs in the same spreadsheet) to show the calculations and assumptions that have been used (including relevant units, price bases and time profiles). These supporting spreadsheets may cross refer to any supporting contract terms and quotes, studies, reports or other relevant documents that provide the evidence base.

A1.49 Any source data from the contractor may be provided to Ofgem in original format as supporting data. This may include but is not limited to:

- unredacted supplier quotations or tender returns (for example, unit rates, bills of quantities)

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- detailed contractor cost build-ups showing labour, plant, and material assumptions
- original schedules of rates or pricing schedules submitted during procurement
- supporting technical specifications or method statements used to justify costs
- manufacturer or vendor datasheets directly underpinning pricing assumptions

Detailed Stakeholder Justification

A1.50 Where applicable, a connecting customer should provide clear analysis and any wider stakeholder supporting information to help demonstrate the benefits of the proposed solution.

A1.51 This may include evidence such as:

- environmental and wider carbon impacts, deliverability and supply chain, planning, consenting and stakeholder acceptance
- land acquisition – we would expect to review evidence that a connecting customer has engaged with landowners, and established cost and programme impacts if this is being used as justification
- planning consents – we would expect to review evidence that a connecting customer has engaged with planning authorities ahead of planning application submission, where relevant, to understand local constraints, and reflect this information in its optioneering
- connecting or existing infrastructure (consents and land)
 - this applies when a connecting customer is seeking planning consent or land rights for a project and there are comparable cases where other third-party connectors or large infrastructure projects have successfully secured similar consents, land access, or equipment
 - in these situations, a connecting customer must provide a clear analysis explaining why they cannot achieve similar outcomes
 - the submission should include supporting evidence such as correspondence, planning authority responses, and any relevant documentation demonstrating efforts made and barriers encountered

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- connecting customers who propose supply chain limitations as justification for not utilising PASE will need to confirm from the supply chain why this is not suitable.

Environmental Impacts

A1.52 We recognise that there are environmental trade-offs which a connecting customer must consider. We expect a connecting customer to utilise strategic investment and extendible designs as often as possible to minimise net environmental impacts. Where a connecting customer's options are heavily influenced by environmental factors, we expect justification to be included in the relevant sections.

A1.53 This may include but is not limited to:

- visual mitigations (including 3D renderings if required)
- environmental land uses and mitigation requirements
- carbon and embodied carbon emissions
- protected environmental species
- impacts of unextendible, un-reinforceable designs

Planning, Consenting and Stakeholder Acceptance

A1.54 A connecting customer should demonstrate that planning and stakeholder considerations have been fully assessed to reduce delivery risk and ensure timely project execution.

A1.55 This may include:

- planning risk analysis (timeline, likelihood of consent) – analysis outlining expected timelines and likelihood of consent, supported by evidence of proactive engagement with relevant authorities and communities
- stakeholder engagement – evaluation of potential impacts of stakeholder positions on project feasibility and identification of measures to mitigate objections or delays
- community benefit evaluation - assessment of community benefits associated with the project, highlighting how these have been communicated and agreed upon during consultations

Deliverability

A1.56 A connecting customer should include a clear delivery strategy and timeline. This may include but is not limited to:

- project schedule with key milestones

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- procurement approach (objectives, risk management, value-for-consumer considerations)
- third-party works and coordination arrangements (includes but not limited to NESO – outages, contractors and suppliers, third-party infrastructure owners – for example, rail, motorway, telecoms, or utilities where crossings or shared corridors exist)
- supply chain availability assessment
- delivery risk summary and mitigation plans
- application of lessons learned from previous projects
- supply chain capacity assessment (lead times, vendor availability)
- outage planning optimisation studies
- programme risk modelling (critical path analysis)

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Appendix 2 – Frameworks for PASE Primary and PASE Variant Options

Table 1 - PASE Linear Builds/Interventions

A1.57 The table below provides the PASE framework for linear assets.

Linear Builds / Interventions	PASE	Description	Evidence Required if used
New Circuit	Primary Option	Double Circuit Overhead Line (Towers or Pylons) May include minor sections of cable for Site of Special Scientific Interest (SSSI), National Landscapes, or dense urban areas. Highest rated conductors available shall be used. Designed to 400kV (or higher) or 132kV	N/A
New Circuit	Variant Option	Double Circuit Overhead Line (Towers or Pylons) May include minor sections of cable for SSSI, National Landscapes, or dense urban areas. Highest rated conductors available shall be used.	If there is clear evidence that ahead of 2050 substation usage will be at, or greater than, 85% of the maximum 132kV ratings.

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Linear Builds / Interventions	PASE	Description	Evidence Required if used
		Designed to 220kV (or higher)	
New Circuit	Variant Option	220kV OR 132kV Pole Route	For circuits not interactive with boundary circuits directly.
New Circuit	Variant Option	Cable Route Standalone	That the route (but for cable sealing ends) is in its entirety in an SSSI, National Landscape, constrained by heritage sites or dense urban environment OR that all cable costs funded by the connecting customer.
Other	Primary Option	Flexible Alternating Current Transmission Systems (FACTS)	Where NESO has clarified need.

Table 2 - PASE Non-Linear Builds/Interventions

A1.58 The table below provides the PASE framework for non-linear assets.

Non-Linear Builds / Interventions	PASE	Description	Criteria for Variant Option where supporting evidence will be required
New Substation	Primary Option	Outdoor Double Bus Bar (DBB) AIS 400kV, 220kV or	N/A

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Non-Linear Builds / Interventions	PASE	Description	Criteria for Variant Option where supporting evidence will be required
		132kV with double circuit turn-in capability	
New Substation	Variant Option	Indoor AIS DBB 400kV, 220kV or 132kV with double circuit turn-in capability	IF used in high pollution areas (Class V insulation requirements). Design must show future extendibility.
New Substation	Variant Option	Single Switch Mesh AIS at 132kV or 400kV	Design must show future extendibility into Double Bus AIS. IF design can be shown to not be on boundary critical circuit.
New Substation	Variant Option	Indoor Double Bus Gas-Insulated Substation (GIS) at 400kV or 132kV	IF required in dense urban area and where there is no existing AIS of comparable footprint AND where there is no major connection adjacent. IF required at altitudes over 400m from sea level and/or relatively close proximity to a coast

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Non-Linear Builds / Interventions	PASE	Description	Criteria for Variant Option where supporting evidence will be required
			(for connecting to demonstrate).
New Substation	Variant Option	Single Switch Mesh AIS at 220kV	Design must show future extendibility into Double Bus Air-Insulated Substation (AIS). IF design can be shown to not be on boundary critical circuit. IF there is clear evidence that ahead of 2050 substation usage will be at, or greater than, 85% of the maximum 132kV ratings.
New Substation	Variant Option	Indoor Double Bus GIS Substation at 220kV	IF required in dense urban area and where there is no existing AIS of comparable footprint AND where there is no major connection adjacent. IF required at altitudes over 400m from sea level.

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Non-Linear Builds / Interventions	PASE	Description	Criteria for Variant Option where supporting evidence will be required
			IF there is clear evidence that ahead of 2050 substation usage will be at, or greater than, 85% of the maximum 132kV ratings.
Other	Primary Option	NESO Operability Requests	Where NESO has provided instructions to intervene on the network.
Other	Primary Option	NESO OTS/ANM Schemes	Where NESO has provided instructions to intervene on the network.
Other	Primary Option	FACTS	Where NESO has clarified need. AND Where installation does not prevent future extendibility of the connecting site. AND is not located on satellite substation connections.

Guidance Pre-Approval of Solutions by Engineering (PASE)**Table 3 - Firmness of Cost Submissions**

A1.59 The table below outlines the classifications of cost submissions and the supporting evidence required for each category.

	Classification	Description	Supporting documentation required
1	Fixed	(i) The cost has been incurred, is not subject to change and has supporting documentation matching the amount; or (ii) Cost is fixed but not yet committed to by the connecting customer	Contract/bill with supporting documentation of payment made / to be made. Fully auditable if needed.
2	Agreed but re-measurable	The cost has been agreed or estimated but it is subject to change according to a clear and agreed variation process. Changes only driven by unforeseeable circumstances.	Contract/bill with supporting documentation of payment made / to be made. Fully auditable if needed.
3	Agreed will be re-measured based on known future changes	The cost has been agreed or estimated but will be subject to change due to clarifying the scope of works or due to additional surveys and assessments being undertaken. As above, change should follow a clear variation process.	Contract/bill with supporting documentation of payment made/to be made. Rates auditable, volumes subject to change based on quantifiable and foreseeable factors.
4	Agreed but indexed	The cost has been agreed or estimated but will be subject to indexation / price adjustment	Contract/bill with supporting documentation of payment made/to be made.

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	Classification	Description	Supporting documentation required
		mechanism(s) where change is foreseen but there is no change to project scope.	Rates auditable, volumes subject to change based on quantifiable and foreseeable factors.
5	Estimated	Cost estimated based on assessments, completed surveys and using experience and examples from other projects.	Spreadsheet with the calculations (methodology), assumptions and evidence base. Emails/minutes of meetings with specific mention of the variables that have been used in calculating these estimates, the person and company providing the calculations and information. List of surveys done as well as documentation of the surveys.
6	Early estimate	Costs estimated through modelling cost ranges from different projects and experience.	Spreadsheet with the calculations (methodology), assumptions and evidence base. Emails/minutes of meetings with specific mention of the variables that have been used in calculating these estimates, the person and company providing the calculations and information. List of surveys to be performed to increase the confidence of the cost estimates.

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Appendix 3 - Templates for Submissions

Templates Overview

A1.60 The following templates are required to be completed by connecting customers at the relevant stages.

A1.61 Templates are intended to minimise the regulatory burden on connecting customers with regards to the length of submissions. We have included page counts in certain sections. Where a connecting customer considers that additional pages are required, they must provide a justification to Ofgem by email in advance of submitting the relevant Eligibility Letter, Needs Case Assessment or Project Assessment.

A1.62 All submissions should be both in PDF and MS Word Format.

Stage 1 Template – Eligibility Letter

Reference Table

A1.63 Project specific table that sets out key project information, to be a maximum of three pages of A4. Connecting customers must also include a document catalogue, providing a list and brief description of all documents and files submitted as part of the application, to ensure clarity and traceability of the evidence provided.

Topic	Description
Name of Project	Working title of the Project. <i>This will align with the name used in any pre-submission engagement.</i>
Date of Submission	
Investment Driver	SBT connection asset, or infrastructure asset of value <£40m
PASE alignment	Is project option(s) PASE Variant? Yes/No Is project option(s) Non-PASE Aligned? Yes/No
Outputs	Please list all outputs to be delivered
Cost	This is the total cost of the preferred option(s). <i>This includes all cross-period funding requirements.</i>
Delivery Year	The year the project will be completed.

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Topic	Description
Extension Cost (applicable only to substations)	Set out for the £m costs for single switch mesh to DDB and 4, 8, 12 or any additional bays. Where exact option(s) and costs are uncertain, please set this out. Costs may be high level estimates reflecting the maturity of the scheme at the stage of Eligibility Assessment.
Interactive Projects	Interactive Projects should include only those schemes that have a direct and material interaction with the proposed investment—for example, projects whose scope, timing, configuration, or delivery is dependent on, or affected by, this scheme.

Project Summary Table

A1.64 Maximum 3 pages of A4

Title Section	Descriptions
Name of Scheme	Working title of the Scheme <i>This will be a meaningful name that relates to the investment proposed and is aligned with the name used in pre-submission engagement.</i>
Investment Driver	Describe the load driver for this project, for example, connections (TOCA/ TORI) tCSNP, Connections, Reinforcement, etc. Set out any links to NESO driven projects (for example, CP2030, tCSNP2) - is project designated as required for Clean Power 2030 and does project have a gate 2 offer from the NESO following the conclusion of the connections reform process? If the project is related to demand projects, set out any links to the Connections Accelerator Service, if relevant. Set out what type of work this is - wider works or enabling works etc. and set out whether there are any shared non-load drivers.
Solution(s)	Brief overview of the solution(s) proposed by the connecting customer. This will be a short description of the solution(s) proposed.
PASE Alignment	Is project option(s) PASE aligned? Yes/No If project is PASE Variant / non- PASE aligned provide brief justification and explanation

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Title Section	Descriptions
Spend Apportionment (£)	

Core Narrative

A1.65 Maximum 50 pages of A4 including appendices. Maximum 10 pages of A4 for each annex.

Section	Requirement	Description	Quantitative/ Qualitative
Needs Case	Eligibility	Statements setting out why the proposed project meets the eligibility criteria for the Load Re-opener.	Qualitative: setting out how the project aligns with the Load Reopener eligibility criteria.
Needs Case	Outputs and delivery year	Set out the proposed outputs for a Price Control Deliverable and the delivery year.	Quantitative / Qualitative: Description of the outputs and proposed delivery years. Include explanation of how the delivery year was calculated.
Needs Case	Justification of project need	Summary of the project driver: focusing on the underlying network requirements and justification for intervention. This may include: Connections: explanation of any new generation or demand	Quantitative / Qualitative: Connecting customer may provide quantified data to support project drivers – for example connection TOCA, NESO reporting,

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Section	Requirement	Description	Quantitative/ Qualitative
		connection the project will enable. System context: Identify the network boundary/constraint, provide current and forecast power flows, thermal ratings, NETS SQSS compliance, and any operability issues (fault level, voltage stability). Investment Drivers: Quantify generation/ demand growth using FES and NOA/CSNP, include contracted volumes, termination risk, and NESO recommendations. Counterfactuals: summarise ‘do nothing’ and ‘do minimum’ scenarios with indicative cost benefit comparisons. Timing: Justify urgency based on outage constraints, asset lead times, and compliance risks. Non-load: justification of any proportion of non-load shared driver to reduce number of interventions.	power system analysis etc. Specify if project is of strategic importance (for example, this can be a NESO identified project for boundary uplift). Qualitative: high-level justification of network need and timing. Evidence may also include (where appropriate and in agreement with NESO), high-level power system study outputs and NESO modelling if available (for example metrics such as MW transfer uplift, constraint savings, and reliability improvements (for example, loss of load)).

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Section	Requirement	Description	Quantitative/ Qualitative
Needs Case	Project Benefits	The expected increase in transmission capability or other wider system benefits. Where a project uses a PASE variant or does not align with PASE, the connecting customer should provide justification for the alternative solution. In some cases, these designs deliver clear benefits, such as enabling urgent delivery or reducing major programme risks (for example, land acquisition or planning constraints). These need to be clearly articulated.	Quantitative / Qualitative: include metrics such as MW increase in transfer capability, boundary flow limits, constraint cost savings, reliability improvements (LOLE/EUE), plus qualitative explanation of wider benefits (for example, resilience, decarbonisation).
Needs Case	Interactive Projects	Outline whether and how this project interacts with or is dependent on any other project on the network, and vice versa. Specify whether there are interactions with CP2030 and CP2030 referenced projects.	Qualitative: narrative on dependencies and interactions.
Needs Case	Economic Benefit	Where possible, provide details of direct and wider economic benefits, estimation for	Quantitative / Qualitative: analysis of inputs (for example,

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Section	Requirement	Description	Quantitative/ Qualitative
		any high-level CBA analysis studies.	constraint savings) for inputs into any high-level CBAs, plus any qualitative socio-economic benefits analysis.
Optioneering	Project is subject to statutory or non-statutory public consultation	Does the project require formal planning consent or is it exempt? (for example, under Town and Country Planning Act, Development Consent Order, or permitted development rights). If consent is required, what stage is the process at? (for example, early planning, consultation completed, application submitted, consent granted).	Qualitative: narrative on planning status and consultation progress, where possible.
Optioneering	List of Options Considered	Provide a list of options for the project with justification and explanations of which are shortlisted and a summary comparison across projects.	Qualitative: narrative on optioneering and rationale for shortlist.
Optioneering	Chosen solution description - Early technical view (scope, route, for example, maps including any	Where the purpose of the Eligibility Letter submission is to also establish Early Options Needs Case.	Qualitative – narrative justification of alignment or deviation from

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Section	Requirement	Description	Quantitative/ Qualitative
	known utility crossings, landing points etc).	Description of the preferred solution proposed by the connecting customer. Provide early technical details of the project, including but not limited to: Project scope Route: for example, maps of known utility crossings, landing points etc. - environmental, and locational context of the preferred solution and how it influenced the optioneering.	PASE principles. If project is a PASE compliant Variant Option or Non-PASE compliant provide additional justification following guidance in Appendix 3 – Justification Guide (Eligibility Letter). Technical schematic, GIS maps and other technical information may be provided.
Optioneering	Optioneering justification (For variant options or non-PASE options only)	Where the purpose of the Eligibility Letter submission is to also establish Early Options Needs Case. Provide a summary based on the information set out across all elements of the letter justifying the rationale for the preferred solution against alternatives.	Qualitative/ Quantitative: narrative justification of optioneering against alternative solutions. This may include a high-level CBA where possible. (Ofgem recognises that early-stage CBAs are necessarily high-level and based on immature project information, and therefore expects

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Section	Requirement	Description	Quantitative/ Qualitative
			only proportionate, outline analysis that highlights key cost-benefit drivers, uncertainties, and how the assessment will mature as the project develops).
Optioneering	Delivery and Risk Timescales	Provide information on delivery timescales and risks to timely delivery. Identified uncertainties expected to be experienced. This should include top five material risks.	Qualitative: narrative on programme risks and mitigation.
Optioneering	Environmental considerations and stakeholder engagement (For variant options or non-PASE options only)	Where the purpose of the Eligibility Letter submission is to also establish Early Options Needs Case: Provide a summary of environmental impacts on design identified and stakeholder engagement undertaken for the project to date. This may include Identification of key environmental considerations (for example, urbanity, landscape, visual	Qualitative and Quantitative: Proportional to the maturity of the project: Provide narrative on environmental risks and mitigation strategies identified, with supporting evidence of stakeholder engagement outcomes where possible.

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Section	Requirement	Description	Quantitative/ Qualitative
		impact, land use, carbon footprint, biodiversity impacts). Description of any mitigation measures proposed to reduce environmental harm. Summary of engagement with relevant stakeholders (for example, ESO, developers, local communities, planning authorities). Evidence that stakeholder feedback has been considered and incorporated into the solution design proportional to the maturity of the project. References to supporting documents such as Environmental Impact Assessments (EIA), planning submissions, and stakeholder consultation reports if available.	Include quantitative data where available, such as estimated carbon emissions, land area affected, number of stakeholders engaged, and consultation timelines, where possible. Where applicable, provide metrics on biodiversity impact, visual mitigation measures, and socio-economic benefits linked to stakeholder agreements, where possible.

System Design Table

A1.66 Maximum 10 pages of A4

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System Design Table	Circuit/Project	Project Name Option 1	Project Name Option 1a	Project Name Option 2
Thermal and Fault Design	Existing Voltage (if applicable)			
Thermal and Fault Design	New Voltage			
Thermal and Fault Design	Existing Continuous Rating (if applicable)			
Thermal and Fault Design	New Continuous Rating			
Thermal and Fault Design	Existing Fault Rating (if applicable)			
Thermal and Fault Design	New Fault Rating			
NESO Dispatchable Services	Existing MVar Rating (if applicable)			
NESO Dispatchable Services	New MVar Rating (if applicable)			
NESO Dispatchable Services	Existing GVA.s Rating (if applicable)			
NESO Dispatchable Services	New GVA.s Rating			
System Requirements	Present Demand (if			

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System Design Table	Circuit/Project	Project Name Option 1	Project Name Option 1a	Project Name Option 2
	applicable) MVA			
System Requirements	2050 Future Demand MVA			
System Requirements	Present Generation (if applicable) MVA			
System Requirements	Future Generation Count (direct connections)			
System Requirements	Future Generation Capacity (licensee forecast) MVA			
Initial Design Considerations	Limiting Factor			
Initial Design Considerations	Strategic Investment			

Stage 2 Template – Needs Case Assessment

Reference Table

A1.67 Provide an updated Reference Table - as set out in the Stage 1 template – clearly highlighting areas that have been updated since the Eligibility Letter Submission.

A1.68 Connecting customers must also include a document catalogue, providing a list and brief description of all documents and files submitted as part of the application, to ensure clarity and traceability of the evidence provided.

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Core Narrative

A1.69 Maximum 100 pages of A4 including appendices. Maximum 10 pages of A4 for each annex.

Section	Requirement	Description	Quantitative/ Qualitative
Needs Case	Needs Case clarity	Demonstrate the specific network need or constraint the project addresses, supported by robust data and analysis. This should include clearly identified investment drivers and justification for intervention.	Quantitative / Qualitative: include power flow studies, boundary limits, generation/demand forecasts, NESO forecasts etc.
Needs Case	Output Proposal	Connecting customers may also propose outputs for the project, to be considered by us for specification in the Load Re-opener licence condition.	Qualitative: narrative description of outputs and delivery milestone.
Needs Case	Needs Case views	Summary of the project's needs case, focusing on the underlying network drivers and justification for intervention. This may include: System Context: Identify the network boundary/constraint, provide current and forecast power flows, thermal ratings, NETS SQSS compliance, and	Qualitative narrative and quantitative evidence to demonstrate the needs case. This means providing clear explanations of network drivers alongside measurable data such as power flow studies, thermal ratings, generation/demand forecasts, cost-benefit comparisons, and reliability metrics (for example, MW transfer

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Section	Requirement	Description	Quantitative/ Qualitative
		any operability issues (fault level, voltage stability). Investment Drivers: Quantify generation/demand growth using FES and NOA, include contracted volumes, termination risk, and NESO recommendations. Counterfactuals: summarise ‘do nothing’ and ‘do minimum’ scenarios with indicative cost-benefit comparisons. Timing: Justify urgency based on outage constraints, asset lead times, and compliance risks. Evidence: Include high-level power system study outputs and NESO modelling (where appropriate); provide metrics such as MW transfer uplift, constraint savings, and reliability improvements (loss of load).	uplift, constraint savings, LOLE/EUE). We expect the connecting customer to sign-post analysis to any CBA to support optioneering justification (unless directed otherwise by Ofgem).
Needs Case	NESO-driven interactions	Identify any interactions with	Qualitative:

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Section	Requirement	Description	Quantitative/ Qualitative
	(where applicable)	NESO-led projects, including enabling works for CSNP projects or projects recommended by transitional CSNPs.	narrative supported by NESO correspondence or planning documents.
Needs Case	Future Energy Scenarios	Reference GB-wide generation and demand forecasts, including Future Energy Scenarios and the Strategic Spatial Energy Plan (SSEP).	Quantitative / Qualitative: include FES data tables and narrative interpretation.
Needs Case	Regional Connection	Provide the connecting customer's assessments of likely outturn connections on their regional networks. Analysis is only required where project is triggered or partially triggered by forecast connections, rather than solely by boundary wide system need – and it is a material factor in establishing the project's justification, optioneering, timing, scale, or long-term consumer value.	Quantitative / Qualitative: forecast MW capacity and narrative on regional drivers. Evidence may include for example: - how new local clusters of new generation or demand materially affect future power flows, thermal ratings, or strategic investment, where showing credible regional connection growth is essential to justify overbuild or extended scope.
Needs Case	Synergies with NLRE	Consider non-load related expenditure where synergies exist with load-related	Qualitative: narrative supported by cost estimates where applicable.

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Section	Requirement	Description	Quantitative/ Qualitative
		works, where this is applicable – where projects have shared drivers.	
Needs Case	Strategic planning and policy alignment	Demonstrate alignment with the latest Network Options Assessment (NOA), CSNP or equivalent planning documents, where appropriate. Explain how local or national policies and net zero targets (including CP2030 and connections reform impacts) have influenced option selection and timing.	Qualitative]: narrative referencing NOA, CSNP recommendations and system planning output Qualitative – narrative referencing CP2030, HND, and relevant policy documents.
Needs Case	System Constraints	Evidence of current or future capacity shortfalls and system constraints requiring intervention.	Quantitative / Qualitative: power flow studies, thermal ratings, and narrative justification.
Needs Case	Counterfactuals	Include analysis of credible alternatives such as 'do nothing' or 'do minimum' scenarios.	Qualitative: narrative supported by indicative cost and risk comparisons.
Needs Case	Environmental Impacts and stakeholder engagement	Summarise environmental impacts, planning and consenting risks, and stakeholder engagement outcomes for the proposed	Qualitative: narrative supported by planning documents and engagement records, where appropriate –

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Section	Requirement	Description	Quantitative/ Qualitative
		solution being taken forward and how feedback/analysis from discarded solutions have informed this decision.	recognising around planning documents.
Optioneering	Optioneering Analysis	Connecting customers must provide a detailed narrative explaining the optioneering process undertaken. This should include: Completion of the optioneering summary table, formatted at the licensee's discretion. Clear references to appendices where supporting drawings, maps, and technical information are provided. Inclusion of additional appendices where necessary to proportionately support the funding request. Details of any crossings with other infrastructure (for example, gas transmission pipelines) when considering new routes.	Qualitative: structured narrative with supporting diagrams; may include elements such as indicative ratings or route lengths. We expect the connecting customer to provide: Optioneering and appraisal evidence that is proportionate to project maturity and based on data that is reasonably available at the time. Where data exists, submissions should include a breakdown of costs by asset type and activity, supported by benchmarking against historical projects or industry standards; where full data is not yet available, the connecting customer should provide the best high-level estimates they can, clearly

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Section	Requirement	Description	Quantitative/ Qualitative
		Supporting evidence should be informed by: Expected Evidence ensuring that submissions demonstrate robust justification for the preferred option and consideration of credible alternatives.	identifying uncertainties and explaining how the analysis will be refined as the project develops. Detailed Whole-Life Cost Analysis (WLCA) to capture capital, operational, and replacement costs, alongside environmental and carbon impacts. A detailed monetised Cost Benefit Analysis (CBA) showing constraint cost savings and any consumer bill impacts (where robust analysis can be provided), supported by sensitivity testing on key assumptions. Quantify risk and contingency allowances with clear methodology and provide scenario modelling outputs to justify any anticipatory or strategic investment. Connecting customer submissions should identify any nonmonetised benefits and summarise their relevance to long-term consumer value, ensuring these are explicitly listed

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Section	Requirement	Description	Quantitative/ Qualitative
			alongside monetised CBA results.
Optioneering	Cost-benefit analysis	Submit evidence of cost benefit analysis and sensitivity testing to confirm consumer value. This information should be submitted using the provided CBA template by Ofgem. If a project uses a PASE variant or does not align with PASE, the connecting customer must provide robust justification for the alternative solution. The connecting customer must demonstrate how designs may deliver clear benefits, such as enabling urgent delivery or reducing major programme risks (for example, land acquisition or planning constraints). We expect analysis demonstrating justification for the preferred option and consideration of how credible alternatives have informed the chosen solution.	Quantitative/Qualitative: monetised costs/benefits (whether quantifiable or not), NPV, constraint cost savings, sensitivity analysis. The connecting customer must list all benefits within the CBA, including those that are qualitative, unquantified, or not readily monetisable. This ensures Ofgem has full visibility of the benefit case in one place and avoids reliance on arguments dispersed across multiple documents. If a benefit is not listed in the CBA, Ofgem may need to assume that no such benefit exists.

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Section	Requirement	Description	Quantitative/ Qualitative
Optioneering	Cost Drivers	Explain the key factors influencing project costs, including engineering design choices, locational constraints, procurement strategy, and risk allocation. The narrative should clearly link cost drivers to the preferred solution and justify any anticipatory investment. This includes: Scope Overview: Provide a clear description of the project scope, including all major components (for example, overhead lines, substations, cable sections) and any associated works. This should align with the technical design and delivery strategy. Breakdown of quantities: Submit a detailed summary covering all asset types and quantities. This should include unit rates, volumes, and	Quantitative/qualitative: evidence explaining key cost drivers—such as design choices, locational constraints, procurement strategy, and risk allocation—should be provided in a manner proportionate to project maturity and based on data reasonably available at the time. Where data exists, submissions should include a breakdown of indicative costs by asset type and activity, supported by benchmarking against historical projects or industry standards, where possible; where full data is not yet available, the connecting customer should provide the best high-level estimates where they can, clearly identifying uncertainties and explaining how the analysis will be refined as the project develops. Where Strategic Investment is proposed, justify it with scenario modelling outputs and

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Section	Requirement	Description	Quantitative/ Qualitative
		assumptions used in estimating costs. Strategic Investment: refers to elements of a project that are designed to meet credible future system needs beyond the immediate trigger for the reinforcement—such as providing additional capacity, extendibility, or optionality. Where the project includes anticipatory elements provide a clear rationale supported by scenario modelling and whole-life cost analysis where possible. We expect analysis demonstrating justification for the preferred option and consideration of how credible alternatives have informed the chosen solution.	cost-benefit analysis showing long-term consumer value.
Optioneering	Delivery and Risk	Outline delivery timelines, planning assumptions, and risk mitigation strategies on project deliverability, including:	Qualitative: programme schedule, summary of project risk register including mitigation narrative. Deliverability evidence including supply chain capacity,

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Section	Requirement	Description	Quantitative/ Qualitative
		A detailed explanation of the delivery approach, covering programme structure, key milestones, and risk mitigation strategies. Previous Funding Overview: Include details of any funding previously requested for assets that interact with the proposed site strategy. Identify any assets that have been subject to intervention within the last two regulatory periods. Provide associated costs and a short description of the scope of those interventions. Programme Schedule: Submit a detailed programme for each option using recognised planning tools (for example, Primavera P6 or Microsoft Project). The programme should clearly show critical path activities, dependencies, and key delivery milestones.	outage planning, risk modelling.

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Section	Requirement	Description	Quantitative/ Qualitative
		Highlight any outage planning considerations and coordination with third-party works. Supporting evidence should demonstrate confidence in deliverability and alignment with the proposed delivery timeline. Where appropriate, reference appendices containing detailed schedules, risk registers, and procurement strategies. We expect analysis demonstrating justification for the preferred option and consideration of how credible alternatives have informed the chosen solution.	
Optioneering	Delivery and Risk Timescales	Provide information on delivery timescales and risks to timely delivery. Identified uncertainties expected to be experienced. This should include top five material risks.	Qualitative: narrative on programme risks and mitigation.
Optioneering	Environmental considerations and stakeholder engagement (For variant	Where the purpose of the Eligibility Letter submission is to also	Qualitative and Quantitative: Proportional to the maturity of the project:

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Section	Requirement	Description	Quantitative/ Qualitative
	options or non-PASE options only)	establish Early Options Needs Case: Provide a summary of environmental impacts on design identified and stakeholder engagement undertaken for the project to date. This may include: Identification of key environmental considerations (for example, urbanity, landscape, visual impact, land use, carbon footprint, biodiversity impacts). Description of any mitigation measures proposed to reduce environmental harm. Summary of engagement with relevant stakeholders (for example, ESO, developers, local communities, planning authorities). Evidence that stakeholder feedback has been considered and incorporated into the solution design	Provide narrative on environmental risks and mitigation strategies identified, with supporting evidence of stakeholder engagement outcomes where possible. Include quantitative data where available, such as estimated carbon emissions, land area affected, number of stakeholders engaged, and consultation timelines, where possible. Where applicable, provide metrics on biodiversity impact, visual mitigation measures, and socio-economic benefits linked to stakeholder agreements, where possible.

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Section	Requirement	Description	Quantitative/ Qualitative
		proportional to the maturity of the project. References to supporting documents such as Environmental Impact Assessments (EIA), planning submissions, and stakeholder consultation reports if available.	

System Design Table

A1.70 Maximum 3 pages of A4

Option	Map	Substation/ Connection Layout	Route Works Layout	Relevant Survey Works	Consenting Risks	Preferred Option Narrative	Rejection Narrative
Preferred							
Rejected 1							
Rejected 2							

System Design Table	Circuit/Project	Project Name Option 1	Project Name Option 1a	Project Name Option 2
Thermal and Fault Design	Existing Voltage (if applicable)			
Thermal and Fault Design	New Voltage			

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System Design Table	Circuit/Project	Project Name Option 1	Project Name Option 1a	Project Name Option 2
Thermal and Fault Design	Existing Continuous Rating (if applicable)			
Thermal and Fault Design	New Continuous Rating			
Thermal and Fault Design	Existing Fault Rating (if applicable)			
Thermal and Fault Design	New Fault Rating			
NESO Dispatchable Services	Existing MVar Rating (if applicable)			
NESO Dispatchable Services	New MVar Rating (if applicable)			
NESO Dispatchable Services	Existing GVA.s Rating (if applicable)			
NESO Dispatchable Services	New GVA.s Rating			
System Requirements	Present Demand (if applicable) MVA			
System Requirements	2050 Future Demand MVA			

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System Design Table	Circuit/Project	Project Name Option 1	Project Name Option 1a	Project Name Option 2
System Requirements	Present Generation (if applicable) MVA			
System Requirements	Future Generation Count (direct connections)			
System Requirements	Future Generation Capacity (licensee forecast) MVA			
Initial Design Considerations	Limiting Factor			
Initial Design Considerations	Strategic Investment			

Appendices

A1.71 Relevant Drawings

A1.72 Cost breakdown updates / further information (as required)

A1.73 Other Supporting Information in line with advice in [Appendix 1 - Justification Guide](#).

Guidance Pre-Approval of Solutions by Engineering (PASE)**Stage 3 Template – Project Assessment**

A1.74 Project specific reference table used throughout project life cycle – maximum 2 pages of A4. For the avoidance of doubt, this information will only be required in relation to all infrastructure costs envisaged as part of the project.

A1.75 Provide an updated Reference Table – clearly highlighting areas that have been updated since the Eligibility Letter Submission or Needs Case Submission. Connecting customers must also include a document catalogue, providing a list and brief description of all documents and files submitted as part of the application, to ensure clarity and traceability of the evidence provided.

Requirement	Expanded Description
Introduction	Provide a succinct summary of the entire submission Must include: Changes to the investment since Stage 1 or Stage 2 submissions, including scope, cost, and delivery assumptions. Identification of any new uncertainties or risks that may affect delivery or cost efficiency. Confirmation of outputs, delivery year, and alignment with licence conditions. High-level summary of project drivers, optioneering outcomes, and preferred solution rationale. Include references to supporting appendices for technical drawings, planning status, and stakeholder engagement evidence.
Background Information	Provide updated background information if changed from previous stages. If there have been no changes, this must be clearly stated. Must include: Completion of all relevant tables summarising project details, technical scope, and planning assumptions. Explanation of any material changes in project drivers, optioneering, or delivery strategy since Stage 1 or Stage 2. Evidence of alignment with NESO planning documents (NOA, FES, Holistic Network Design). References to appendices for additional technical or economic evidence where required.

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Requirement	Expanded Description
	Clear justification for changes and their impact on consumer value and delivery confidence.
Final Cost and supporting documents	Provide a comprehensive cost justification Must include: Narrative explaining key cost drivers (engineering design choices, locational constraints, procurement strategy, risk allocation). A detailed scope overview that clearly sets out all major project components and activities, showing how each element aligns with the technical design choices and the proposed delivery strategy to ensure coherent, efficient and deliverable project execution. Where costs have already been incurred by the submission of the Project Assessment, including costs incurred in previous price controls, relating to either load or non-load element of the project, these costs must be clearly identified and flagged. Main cost spreadsheet - RRP compliant submission with OAP C&Vs. All costs mapped to the Ofgem Asset Possibilities (OAPs) with associated volumes, unit rates and assumptions. Where costs cannot be allocated to OAPs, the connecting customer shall clearly define these costs. This includes items such as BNG and VA costs. Full Bill of Quantities (BoQ) covering all asset types. In circumstances where a BoQ cannot be provided, the connecting customer should: Submit the most detailed cost breakdown available, mapped to Ofgem's required structure (OAPs, unit rates, volumes, and assumptions). Provide supporting evidence demonstrating why a BoQ is unavailable. Provide alternative traceable evidence (for example, tendered unit rates, contractor pricing schedules, breakdowns of labour/plant/material assumptions). Breakdown of costs by category: Ofgem Asset Possibilities, Project Management, Risk and Contingency (with risk register), CAIs, Contractor Fees.

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Requirement	Expanded Description
	Main cost spreadsheet - RRP compliant submission with OAP C&Vs. Evidence that the costs are efficient, for example, through cost benchmarking, market testing, or competitive tendering. Benchmarking against historical projects and industry standards. Whole-Life Cost Analysis (WLCA) and Cost-Benefit Analysis (CBA) with sensitivity testing, if Ofgem determines they are required as a result of a Major Projects Change. Efficient costs associated with environmental mitigation and BNG where this is applicable. Projects with direct costs above £150m should submit closely associated indirects (CAI). For projects with direct costs below £150m, indirect costs must be recovered exclusively through Special Condition 3.13 Closely Associated Indirects (CAI) Use-it-or-lose-it mechanism and in line with the associated guidance.
Deliverability	Provide a detailed deliverability assessment for the proposed solution, which must include: Narrative outlining delivery strategy, programme structure, and key milestones. Previous funding overview, including references to any PCF and how expenditure will help achieve delivery outcomes. Programme schedule using recognised planning tools (Primavera P6, MS Project or equivalent), showing original and current forecast dates. Evidence of supply chain capacity, outage planning, and risk modelling. Risk register and mitigation strategies for delivery risks, including risk registers. Where appropriate, all major signed contracts or details of final binding offers (immediately prior to signing). Coordination arrangements for third-party works and dependencies. References to appendices for detailed schedules, procurement strategies, and stakeholder engagement records.
Environmental Impacts and	Summarise any final decisions on environmental impacts, planning and consenting mitigations, and stakeholder engagement outcomes

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Requirement	Expanded Description
stakeholder engagement	for the proposed solution. How have these impacted final costs, including mitigation for elements such as BNG etc. (where applicable).

Appendices

A1.76 Cost tables associated with Core Narrative.

A1.77 Cost breakdown/further information (as required).

A1.78 Other Supporting Information in line with advice in [Appendix 1 - Justification Guide](#).

A1.79 Relevant procurement documents, such as evaluation reports and analysis.

Template for Cancelled Projects

A1.80 This template should be completed by connecting customers for projects that have been cancelled after submission. It ensures Ofgem has visibility of cancelled projects and associated costs.

A1.81 Maximum of 10 pages of A4 including appendices. Maximum 3 pages of A4 for each annex.

Category	Detail Required
1. Project Identification	Project Name: [Enter project name] Project Reference: [Enter reference] Original Submission Date: [Enter date]
2. Reason for Cancellation	Provide a clear explanation of why the project has been cancelled, including any external factors (for example, planning, stakeholder objections, system changes).
3. Outputs Delivered	Detail any outputs delivered prior to cancellation (for example, completed surveys, design work).
4. Interactions with Other Projects	Identify dependencies or interactions with other projects and explain implications of cancellation.
5. Supporting Evidence	Attach or reference any supporting documents (for example, stakeholder correspondence, cost reports, planning decisions). List of Attachments: [Enter details]

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Cost Category	Amount (£)	Comments
[Enter Details]	[Enter Details]	[Enter Details]

Template for Material Project Changes

A1.82 Connecting customers must submit the Template for Material Project Changes when a project that has already passed the Eligibility Assessment experiences significant changes before or during the Needs Case Assessment or the Project Assessment stages.

A1.83 Maximum 20 pages of A4 including appendices. Maximum 5 pages of A4 for each annex.

Category	Detail Required
1. Project Identification	Project Name: [Enter project name] Project Reference: [Enter reference] Date of Original Submission: [Enter date]
2. Summary of Changes	Provide a clear summary of the changes triggering reassessment (for example, engineering design, costs, delivery timing, scope). See Material Changes thresholds table below.
3. Updated Project Drivers	Explain how the project continues to meet the identified network need and delivers consumer benefits despite the changes.
4. Revised Optioneering Analysis	Detail the optioneering process undertaken following the changes. Include alternatives and rationale for the preferred option. Indicate whether or not the new solution is PASE aligned.
5. Updated Cost-Benefit Analysis	Provide a revised cost-benefit analysis, including sensitivity testing to demonstrate efficiency under different scenarios.
6. Delivery and Risk Impacts	Summarise the impact of changes on delivery timelines, supply chain, outage planning, and risk profile. Include mitigation strategies.

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Category	Detail Required
7.Supporting Evidence	Attach or reference any supporting documents (for example, updated technical drawings, cost reports, stakeholder correspondence). List of Attachments: [Enter details]

Material changes thresholds

A1.84 This table sets out the thresholds for material changes:

Category	Definition	Threshold
Engineering Design	Significant deviation from original technical configuration or PASE alignment.	Change in core design (for example, overhead line to cable, AIS to GIS) or major design alterations impacting reliability, resilience, or extendibility.
Costs	Increase in forecast capital expenditure or changes in cost drivers.	Where the cost increase exceeds: (i) 50% of the project cost, or (ii) £50m, whichever is greater. (for example, for a £1bn project, the threshold would be a £500m increase, not £50m).
Delivery Timing	Material shift in delivery schedule or outage strategy.	Delay or acceleration of ≥ 18 months in key milestones (for example, in-service date).
Other Material Factors	External or systemic changes affect project justification.	New planning/consenting risks, supply chain constraints, vendor changes, or significant interactions with other projects.