

Guidance

SO:TO Optimisation Governance Document

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The System Operator: Transmission Owner (SO:TO) Optimisation is a financial output delivery incentive (ODI-F) to encourage the Electricity Transmission Owners (ETOs) to proactively identify and provide solutions to the National Energy System Operator (NESO) to help reduce constraint costs in accordance with the STCP11-4 procedures.

This SO:TO Optimisation Governance Document outlines the process and criteria for the ETOs to provide solutions eligible for this incentive; the reporting requirements placed on the ETOs and the NESO; the methodology the Authority will use to calculate the incentive payment during the period; and the timescales for the incentive review.

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1. Introduction

Context

- 1.1 The System Operator: Transmission Owner (SO:TO) Optimisation is a financial output delivery incentive (ODI-F) that is designed to encourage the ETOs to proactively identify and provide solutions requested by the NESO to help reduce constraint costs using the existing STCP11-4 procedure.¹
- 1.2 STCP11-4 is a procedure that enables the NESO to buy a service from the ETOs, where this service has been identified as having a positive impact in assisting the NESO in minimising costs on the GB electricity transmission (ET) network.²
- 1.3 The performance measure of the incentive will be the ex ante forecast constraint savings from the solutions proposed and delivered by the ETO, as assessed by the NESO through the existing STCP11-4 procedures and reviewed by the Authority.
- 1.4 The SO:TO Optimisation ODI-F as set out in this document will apply to the RIIO-ET3 Price Control Period.

Scope of this document

- 1.5 The purpose of this document is to set out:
 - the methodology by which the NESO will assess ex ante forecast constraint savings (Chapter 2);
 - the scope of solutions that can be provided through this ODI (Chapter 3);
 - the reporting process for the ETOs and the NESO (Chapters 4 and 5, and Appendix 2);
 - the methodology for calculating the incentive payment (Appendix 1); and
 - the timescales for reviewing the ODI.
- 1.6 The content of this Governance Document does not alter or supplement the NESO's or the ETO's compliance with its wider obligations under legislation, its licence, or industry codes.
- 1.7 This Governance Document is issued by the Authority³ under Part A of Condition E8 (SO-TO Optimisation Governance) of the NESO's licence and Part B of Special

¹ Further details on the SO:TO ODI can be found in our [RIIO-2 Final Determinations – ET Annex](#), page 19.

² The proposal for the STCP11-4 includes some background information on the original drivers behind this code procedure. It can be found here: [Agenda Item 5. PM0108 \(STCP11-4\) Proposal Form](#)

³ In this document, we use the terms 'Ofgem' and 'the Authority' as well as the terms 'we', 'us' and 'our' interchangeably. Ofgem is the Office of the Gas and Electricity Markets. The Authority is the Gas and Electricity Markets Authority and is the governing body of Ofgem, consisting of non-executive and executive members.

Condition 4.6 (SO-TO optimisation output delivery incentive) of the licensee and may be revised and reissued from time to time in accordance with the above licence conditions.

Related publications

- 1.8 This document is to be read in conjunction with the following associated documents:
- RIIO-3 Final Determinations ET Annex: [RIIO-3-Final-Determinations-ET](#)
 - Condition E8 (SO-TO Optimisation Governance) of the National Grid Electricity System Operator Licence:
[Complete_ESO_Licensing_Direction_and_Licence_Terms_and_Conditions](#)
 - The Electricity Transmission Licence, which is accessible through our electronic Public Register (ePR): [Home Page - Ofgem Public Register](#).
 - Special Condition 4.6 (SO-TO Optimisation Output Delivery Incentive) of the Electricity Transmission Licence, which is accessible through our electronic Public Register (ePR): [Home Page - Ofgem Public Register](#).
- 1.9 See Special Condition 1.1 (Interpretations and definitions) of the electricity transmission licence for the description of all defined terms used in this document.

2. SO:TO Optimisation ODI solution criteria and incentive reward methodology

SO:TO Optimisation solutions

- 2.1 The ETOs will be eligible for a reward under the SO:TO Optimisation ODI-F for solutions that are accepted by the NESO as having been delivered in line with the STCP11-4 provision.⁴
- 2.2 The NESO must assess the eligibility of the solutions that the ETOs put forward in line with the STCP11-4 provision. For the purposes of the incentive calculation, the NESO must assess the estimated ex-ante constraint savings associated with the SO:TO Optimisation Solution enhanced service/intervention using the methodology set out in Appendix 1.
- 2.3 The methodology in Appendix 1 was provided to the Authority by the NESO and largely reflects the existing processes set out in STCP11-4. If the NESO identifies any need to update or change the methodology in Appendix 1, the NESO must engage with the Authority on the proposed amendments. If following the engagement, the Authority agrees with the proposed amendments to the methodology, the Authority will amend this governance document in line with Special Condition 4.6.
- 2.4 The NESO's assessed constraint cost savings will be reported by the relevant ETO to the Authority in line with the reporting requirements in Condition E8 of the Electricity Transmission Licence. These constraint savings will be subject to review and approval by the Authority before the incentive rewards are calculated in accordance with the formula in Special Condition 4.6 of the Electricity Transmission Licence. The Authority will not approve constraint savings in the following circumstances:
 - Where the solution cannot be demonstrated by the ETO and NESO to be above and beyond business as usual (BAU);
 - Where the delivery of the solution could adversely affect competition in the market for providing commercial services to the NESO, including through the NESO's constraint mitigation pathfinder.
 - Where the solution has been adequately funded through other mechanisms other than through the provisions of STCP 11.4 (eg through RIIO-3 totex allowances).
- 2.5 For the avoidance of doubt, the ETO will need to deliver the solution before it is eligible for incentive rewards.

⁴ [STCP 11-4 Issue 004 Enhanced Service Provision.pdf](#)

- 2.6 Where a solution makes constraint savings across more than one year, the incentive for Year One will be based on the respective benefit the solution provides in Year One and the incentive for Year Two will be based on the respective benefit it provides for Year Two. The NESO should be able to assess level of savings forecast in Year One (this will be the basis of the calculation of the incentive in Year One for this solution) and level of savings forecast in Year Two for this solution (which will be the basis for calculation of incentive in Year Two for this solution).

STCP11-4⁵

- 2.7 Under STCP11-4,⁶ changes to an ETO's outage programme, project delivery method, or project design may be requested by either the ETO or NESO.
- 2.8 If the ETO identifies such potential change it will apply to the NESO with the details of the proposed change. The NESO will then assess if the solution would result in benefits to consumers in the form of reduced constraint costs. If the assessment is positive, the NESO will review the costs of the solution and will assess their efficiency. If the change is deemed to reduce system operating costs and the ETO's change costs are acceptable to the NESO, the ETO will carry out the work as agreed.
- 2.9 Once a change to an ETO's outage programme, project delivery method or project design as well as its cost has been agreed by the NESO, the ETO will deliver the service and the NESO will pay for the service in accordance with the STCP11-4 in line with Special Condition 4E8 (SO:TO Mechanism) of the NESO's Electricity Transmission Licence.

⁵ Note that the procedure as described is a summary of the STCP-11-4 provision as it was set out when this guidance document came into effect. The ETOs and NESO should follow the latest code procedure as is published on the NESO's website.

⁶ This description applies to the most recent approved code procedure can be found here: [STCP 11-4 Issue 004 Enhanced Service Provision](#)

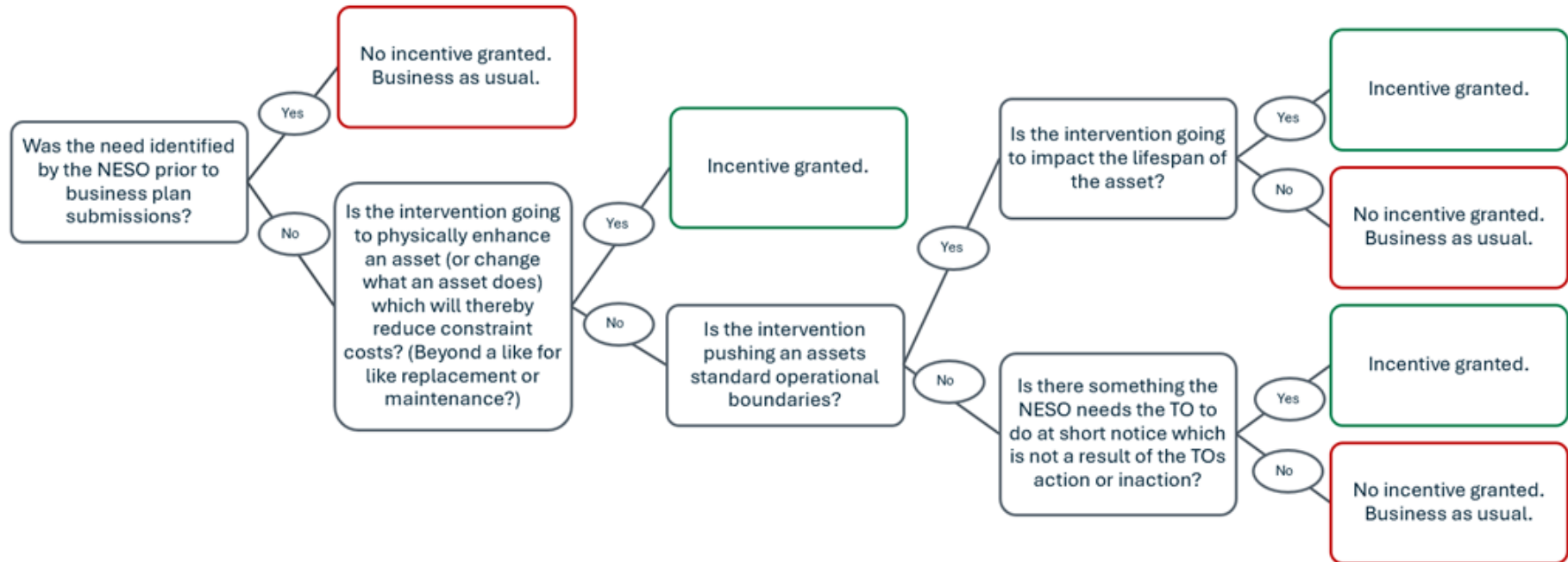
3. Eligibility criteria

3.1 The licensee is entitled to an incentive benefit payment if, in relation to an asset, an Enhanced Service or Intervention if it meets the following criteria:

- physically enhances the asset beyond a like for like replacement or maintaining the asset;
- materially changes what the asset does beyond a like for like replacement or replacement or maintaining the asset; and
- reduces Transmission Constraint Costs.

3.2 Figure 1 outlines the criteria the NESO and TOs should follow to determine whether a SO:TO Optimisation Solution meets the requirements to be classified as an Enhanced service or Intervention to be eligible for the ODI-F incentive.

Figure 1: Eligibility criteria flowchart



- 3.3 If the Enhanced Service or Intervention does not meet the criteria set out above, the licensee is entitled to an incentive benefit payment in relation to an asset if because of an Enhanced Service or Intervention:
- the asset is put in a position where it runs at a capacity that is greater than the capacity that would otherwise have been the case under the Standard Operational Conditions of the asset; and
 - the lifespan of the asset could be negatively affected.
- 3.4 If the Enhanced Service or Intervention does not meet the criteria set out above, the licensee is entitled to an incentive benefit payment in relation to an asset if the Enhanced Service or Intervention has the effect of imposing obligations on the licensee which exceeds its requirements under the licence.
- 3.5 No incentive benefit payment is payable in relation to a SO:TO Optimisation Solution that was identified by the ISOP as being necessary prior to the licensee's RIIO-3 business plan submission on 11 December 2024.

4. ETO Reporting Requirements

- 4.1 ETOs are required to individually submit a report setting out how the SO:TO ODI has driven reduction in constraint costs. Appendix 2 sets out the format that the ETOs must use to set out this information.
- 4.2 ETOs must also report the benefits garnered through the ODI-F in line with their Regulatory Reporting Pack (RRP) requirements.

Timescales of the ETO report

- 4.3 For the purpose of monitoring and calculating the incentive rate the ETOs must separately provide information as part of the Annual performance monitoring carried out by the Authority in line with Special Condition 4.6.

Content of the ETO report

- 4.4 The ETOs must report annually on the following:
- Details of each solution that the ETO has delivered through this incentive, specifically:
 - a description of the works that have been delivered;
 - the costs that have been funded through STCP11-4; and
 - value of forecast constraint savings as estimated by the NESO.
 - Steps taken to identify the solutions proposed and/or delivered by the ETO under STCP11-4, including:
 - A description of how the ETO identified the solution.
 - Why, in the ETO's view, the solution delivered is above and beyond business as usual (BAU).
 - Specifically, the ETO should clarify why this solution was not identified as part of the original planning process and planning optimisation. The ETO is required to demonstrate why each solution would not have been identified and progressed if there had not been an incentive in place.
 - The ETO must set out that the solutions put forward under STCP11-4 do not, to the best of its knowledge, overlap with funding through other mechanisms or overlap with the constraint mitigation pathfinder.
 - The ETO must explain why this solution could not have been funded through other mechanisms (e.g., optimisation of outage plan).
 - If applicable, a list of solutions identified and proposed by the ETO which were either rejected by the NESO or accepted but not delivered. The ETO must

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include the reasons for rejection by the NESO and/or the reason for the solutions not being delivered, respectively.

5. NESO reporting requirements

- 5.1 The NESO must independently report to the Authority annually about the ODI.
- 5.2 The NESO must flag to the Authority any concerns it has in relation to unintended consequences of the ODI, for example any deterioration in quality of outage planning, or distortions to competition in constraints services to the NESO.
- 5.3 The NESO must monitor and notify any concerns it has in relation to unintended consequences from the use of the ODI in relation to the points set out below.
- 5.4 For each solution that has been accepted and funded under the STCP11-4 procedure the NESO must provide:
 - Details of each solution that has been accepted under STCP11-4, including:
 - The information that has been set out in the TO Commercial Operational Service Provision Cost Estimate pro forma as set in Appendix A of STCP 11-4.
 - The rationale for accepting the solution and why to the best of the NESO's best knowledge, this solution could not have been delivered through other mechanisms or competitive tenders (at a lower cost to consumers).
 - Its calculation of ex-ante constraint savings in line with the methodology set out in A of this SO:TO Optimisation Governance Document; and
 - NESO must also set out why proposed solutions were rejected during the ODI period.

Appendix 1 NESO methodology to calculate constraint cost savings

- A1.1 Process for identification of STCP 11-4 opportunities and forecasting savings.
- A1.2 This document outlines the process which begins after the identification of a potential change to an ETO's Outage, Delivery Project or Project Design as per section 3 of the STCP11-4 document and will detail the process followed by the NESO to assess forecast savings and viability of the option.
- A1.3 Before following this process, an ETO will have identified an opportunity for consumer savings over Years 0-6 of the transmission plan.
- A1.4 The NESO and ETO will have discussed the technical viability, timescales and requirements to complete the work to ensure that all parties believe that they are realistically deliverable.
- A1.5 The opportunity identified must be shown by the NESO to reduce balancing costs by reducing a transmission constraint.
- A1.6 There are a wide range of plausible opportunities that could result in a reduction of balancing costs, some opportunities will reduce a thermal constraint, some a voltage constraint and some a stability constraint. In all cases the process for the NESO to follow will be to assess the network and associated cost reduction introduced by the change. The steps in Figure 2 should be followed to result in a decision on whether to proceed.
- A1.7 The NESO during the stages in Figure 2 will consider a wide range of conditions regarding generation patterns, demand patterns, future connections, intact conditions, outage conditions and fault conditions.
- A1.8 The NESO will look to stress the system to its credible worst-case scenario(s) to capture not only the monetary cost but also capture the 'value' that may be realized with regards to improving security. Often initiatives would result in a cost and a security benefit, with the former being the more tangibly quantifiable element financially.
- A1.9 The cost figure which is arrived at to determine whether to proceed will be based upon a cost forecast rather than a cost exposure and therefore the figure will be under realistic rather than worst case conditions.
- A1.10 Cost exposure here is the absolute maximum cost reduction that could be achieved, and the forecast cost is the realistic savings expected. These realistic forecast savings are based upon factors such as the load factor (seasonal and time of day demand), quantity, location and price of flexible generation, quantity and location of inflexible generation such as embedded wind or nuclear units and planned generator outages.

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- A1.11 The steps in Figure 3 must be followed ex post to assess actual savings, and the pro-forma should be fully completed with full details of savings or reasons that the savings were not captured.
- A1.12 Please note here that where estimated ex-post cost savings significantly differ from forecast savings a reason must be given in the pro-forma using codes A, B, C, D, E and/or free text.

Figure 2: Steps the NESO should follow to decide whether to proceed

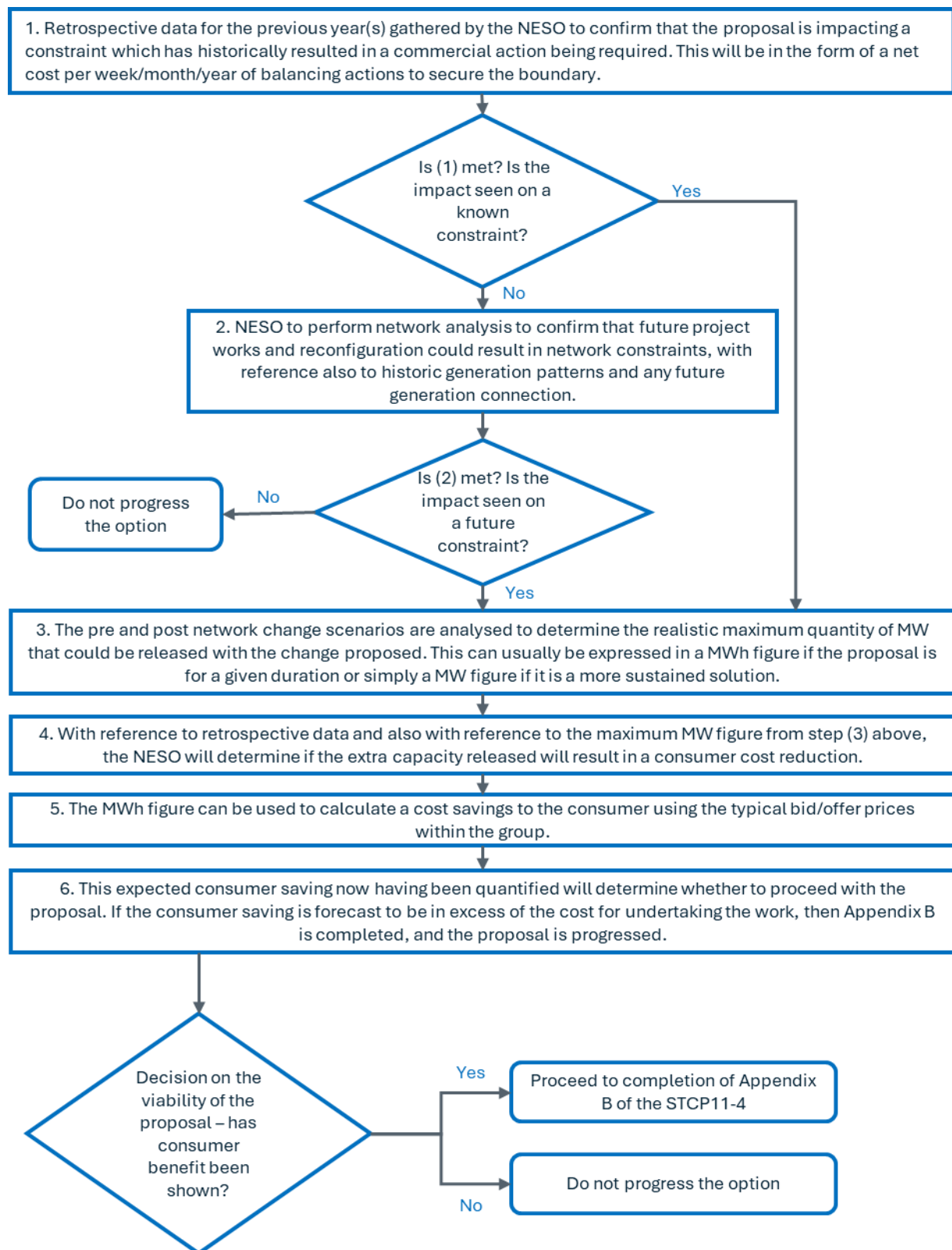
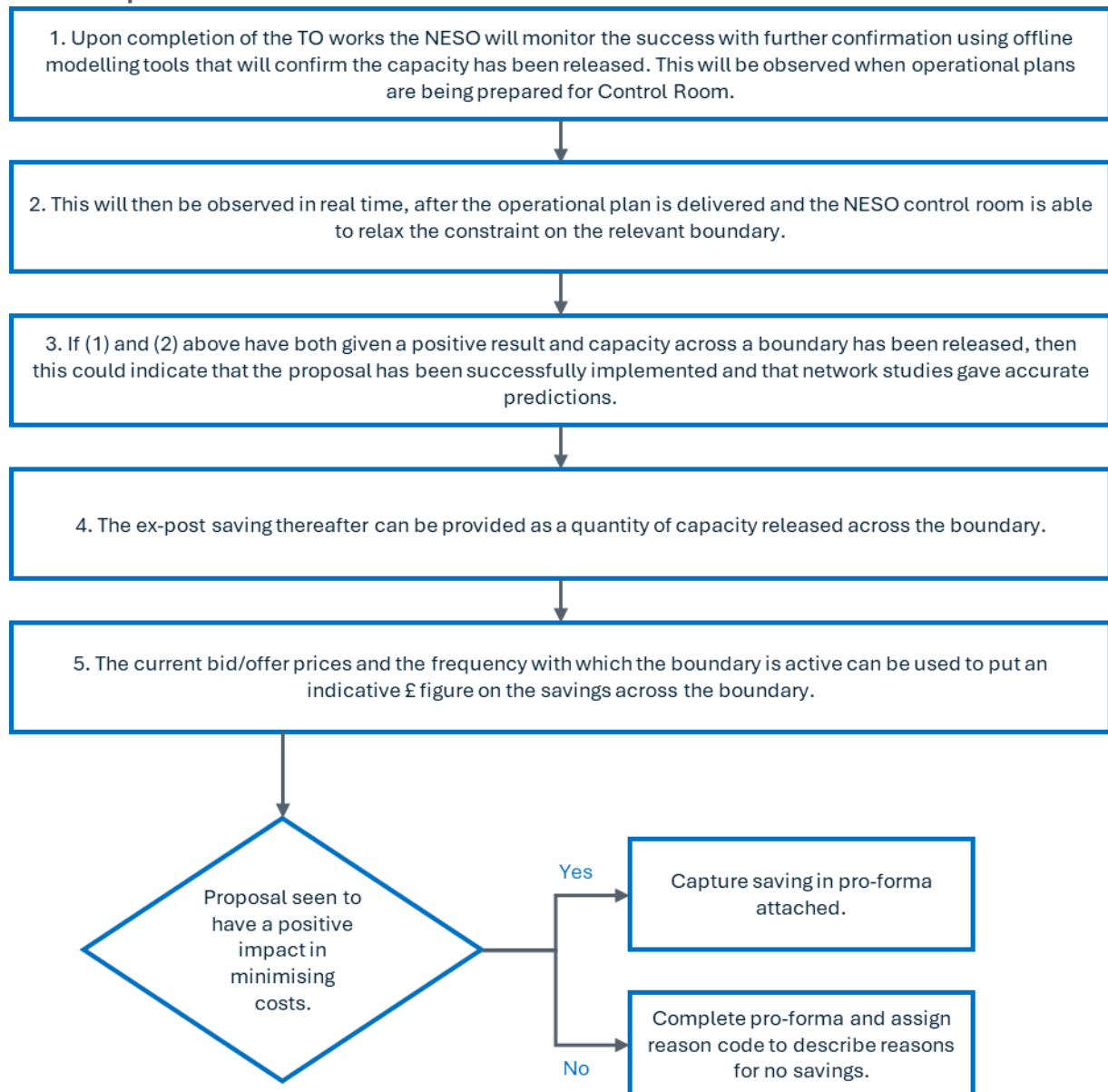


Figure 3: Steps to follow ex post to assess actual savings from the enhanced services provided



Appendix 2 ODI report templates (ETO)

A2.1 The ETO is required to report on each solution using the format in Table 1 and Table 2 below.

Table 1: ODI report template for details of delivered solutions (ETO)

Activity	Input	Notes
Solution description	[For ETO to complete]	Description of solution provided including name of boundary/project/ location. Details of all boundaries impacted by the enhanced service provision. Total duration of the service provision.
Date	[For ETO to complete]	Date of solution submitted to the NESO and works completed by ETO.
Cost of solution	[For ETO to complete]	Cost to deliver the solution under STCP11-4 as agreed by the NESO.
Estimated constraint savings	[For ETO to complete]	As estimated by the NESO as part of their CBA of the proposed solution.
Demonstration of delivery beyond business as usual	[For ETO to complete]	Why this solution could not have been funded by other mechanism (optimisation of original outage plan). Demonstration of how this deliverable could not have been provided without the ODI in place.
Any additional information	[For ETO to complete]	Any other relevant information in relation to the solutions delivered

Table 2: ODI report template for details of solutions not delivered (ETO)

Activity	Input	Notes
Solution description	[For ETO to complete]	Description of solution proposed including name of boundary/project/ location.
Date	[For ETO to complete]	Date of solution submitted to the NESO.

Activity	Input	Notes
Cost of solution	[For ETO to complete]	Cost of solution proposed to be delivered under STCP11-4.
Estimated constraint savings	[For ETO to complete]	As estimated by the NESO as part of their CBA of the proposed solution. (If accepted by the NESO but not delivered).
Estimation of consumer benefits	[For ETO to complete]	Why the proposed solution, in the ETO's view, would have delivered consumer benefit.
Details of non- delivery	[For ETO to complete]	Why the solution was not accepted by the NESO or why the solution could not have been delivered.