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# Early development

Early development of options and  
non-TO developers' process

## 8.1 Introduction

1. This methodology section describes how the early development of options and the non-TO developers' processes work. The aim is to increase the breadth of options available for the tCSNP2 Refresh process to improve end consumer value. To support this, licence condition C13 obliges NESO to undertake the early development of options (see paragraphs 20 and 21 of licence condition C13) and assess options from interested persons (see paragraph 13(a)(viii) of licence condition C13) which we describe as *non-TO developers*.

## 8.2 Early development of options

1. NESO undertakes the early development of options where early development is not carried out by another transmission licensee, or an option is suggested by other non-TO developers. NESO will assess whether the option has demonstrable benefit. A demonstrable benefit would be where the mitigation of a constraint is in a credible range and at a competitive cost. NESO might do development by, for example, modelling the network and/or options. NESO must do the early development to such a standard that it can perform economic studies on the options to adequately compare the relative suitability of options.
2. NESO publishes the System Requirements Form (SRF) that provides the information to the industry about system needs and hence opportunities for them to invest.
3. Note that early development of options is different from NESO-led options such as commercial solutions. A 'commercial solution' is a contract with a generator for the output of that unit to be reduced or disconnected following a system fault.
4. NESO accepts that its limited capability to study options' costs and earliest in-service dates may limit the accuracy of its view of the costs of options it is developing. The consequence of this could be that an early development option has unduly favourable results at first which displaces and delays alternative options. NESO may make its costs and earliest in-service dates available for scrutiny which could lead to it revising the data put into the tCSNP2 Refresh economic process.
5. Following the review of options submitted for the tCSNP2 Refresh process, NESO will consider the following aspects when determining whether to undertake early development of options:
  - **Insufficient Reinforcement Options:** Where there are not enough options to meet the requirements on each boundary, NESO may undertake early development. We assess whether the options are sufficient by comparing the capabilities against unconstrained flows modelled in our market model. This will be followed by initial screening to test if options are technically effective with some consideration of the cost.
  - **Abandoned Options:** If an option has been initially devised for a Network Options Assessment (NOA) or Beyond 2030 analysis but then not re-submitted subsequently, NESO will seek to understand why the option has been abandoned and may/ may not decide to pursue the option.
  - **Options not progressed by relevant TO:** NESO may develop an option that the TO or relevant party has declined to adopt and develop.

## 8.3 Non-TO developers' Process

1. The purpose of non-TO developers' options is to increase the diversity of options considered within the tCSNP2 Refresh process through academic and industry participation. Options submitted through this process are required to be new and innovative and not currently assessed in onshore network options.
2. Non-TO developers can suggest options and where they can give demonstrable evidence of benefit to meet system needs, NESO, and TO as required, can support them with further analysis or studies. In some cases, NESO might conclude that previous work, perhaps by a TO, has found that a particular option is impractical or not worthwhile in which case there is no further action.
3. NESO will apply a screening stage to filter options from non-TO developers if there are many and it is clear that some are more beneficial than others. This may be found by engineering judgement based on the following factors:
  - Genuine network need;
  - Operability;
  - Practicality, for instance delivery date;
  - Understanding of the costs;
  - Whether the same or similar option has been considered before and ruled out for good reason.

During the filtering process NESO will also check to see if the non-TO developer's option is better suited to alternative processes such as our voltage and stability procurement events or Innovation projects. If this is the case, the option may be recommended to be put forward to the alternative process.

4. When NESO carries out early development of an option, it needs to be able to determine the option's benefit, for instance how much it improves boundary capability, the cost and also the earliest in-service date. These are the key factors in the cost-benefit studies. NESO forms a view on these using the following considerations:
  - What NESO's aim is, for example to improve capability when all other options have been exhausted. This introduces the nature of the option and NESO's thinking, such as new reactive compensation and new circuits.
  - The existing parts of the network that are affected, such as connection points for new circuits as well as other network topology changes.
  - Technical parameters of the solution to allow technical studies of the option and determine, for instance, boundary capability and related effects such as fault levels. This might affect the overall benefit of the option as the net gain might be reduced or an investment like circuit breaker replacement might be needed elsewhere if fault levels exceed existing ratings. An estimate of the capital cost and earliest in service date based on public cost data and making certain assumptions such as the proportion of a new route that is cable. NESO consults with the relevant TOs about such examples for their views about an option's practicality.

5. The early development of non-TO developers' options will be an ongoing collaborative process between the provider, NESO and the incumbent TO, as appropriate. This will ensure proposed options are fully understood and sufficiently developed whereby it is demonstrated they can provide a benefit ahead of inclusion in the options assessment analysis. For a non-TO developers' option to be considered for the forthcoming options assessment analysis, it must be considered technically competent, mature and submitted before the start of technical analysis.
6. Providers will be able to submit options year-round through a publicly available System Requirement Form (SRF).
7. Non-TO developers' options must be a response to system needs and deemed sufficiently mature before NESO will grant their inclusion in the options assessment analysis. Where deemed insufficiently mature, the option(s) will be developed in collaboration with the third party and incumbent TO until such time that all parties agree the option is ready for options assessment or until the need is met or no longer required. If an option's benefit cannot be clearly demonstrated, then NESO can either work with the non-TO developer if NESO believes there could be some benefit or NESO explains to the non-TO developer why the option is being rejected.
8. At present, the non-TO developers' process will not assess storage options, this includes pumped storage, battery storage, compressed air, and all other storage technologies. We are developing a process to assess storage for the future network planning process that builds on our [Energy Storage Technical Feasibility Assessment](#) in which we investigated using storage to reduce constraint costs.
9. The framework to enable non-TO entities to deliver reinforcements is set out in the Energy Act 2023. This enables third parties to compete to become Competitively Appointed Transmission Owners (CATOs). NESO is overseeing developing the non-TO developers' process to enable third party input into the initial solution development for projects that may be competed.
10. While the frameworks described above become established, it is anticipated that all successful non-NESO led such options will be developed and owned by the relevant TO. Option progress will require close collaboration with the non-TO developers.
11. NESO may seek the input of the relevant TO(s) to help it understand the factors that might affect an option. NESO will not undertake consenting engagement work on options – this will be carried out at the appropriate development stage, by the relevant party, following a "Proceed - Critical" recommendation. Following a "Proceed - Critical" signal from the tCSNP2 Refresh, the non-TO developers' options will be delivered by the incumbent TO(s) or, if appropriate via NESO, through standard procurement and regulatory frameworks. Figure 8.1 shows the non-TO developers' process in a flowchart.
12. Year on year progression of non-TO developers' options will be subject to continued "Proceed - Critical" signals in the annual options assessment analysis.

Figure 8.1 Non-TO developers' process flowchart

