

Guidance

Annex 2 - ED3 common sensitivity for load-related expenditure

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This document provides guidance to distribution network operators (DNOs) on applying the common sensitivity when developing ED3 load-related expenditure (LRE) funding requests. It specifies the sensitivity, explains how it should be implemented and sets out how the results should inform funding requests. This guidance should be read alongside the ED3 Business Plan Guidance and the Business Plan Data Tables guidance.

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1. Introduction

- 1.1 As part of their ED3 business plan submissions, we expect distribution network operators (DNOs) to identify and justify the load-related expenditure needed to develop their networks for the energy transition. In line with the ED3 Business Plan Guidance, we expect each DNO to develop load projections for their licence areas informed by the tRESP 10-year and long-term Holistic Transition pathways, and to use these as the principal basis for long-term network planning to support the transition to net zero.¹
- 1.2 However, we also expect each DNO to test the timing and certainty of network needs arising in ED3 under its load projection against a common sensitivity. The purpose of the sensitivity analysis specified in this guidance is to help distinguish proposed interventions that are sufficiently low regret to fund through allowances approved at the start of the price control (known as ex ante allowances) and, in turn, what consumers are committed to pay.
- 1.3 The costs of load-related expenditure are recovered from consumers through their bills. Where anticipated demand growth materialises alongside that investment, these costs will be supported by the corresponding benefits of enabling electrification, decarbonisation and economic growth. However, if investment gets materially ahead of demand, consumers could bear higher costs without receiving those benefits, which could itself be counterproductive to the transition.
- 1.4 To protect consumers from this risk, we want to set ex ante allowances for load-related interventions that can reasonably be regarded as low regret. For this purpose, low-regret investment is for interventions that remains justified under materially weaker heat pump uptake, taking account of the need of maintaining network readiness and the risk of unnecessary or premature expenditure.
- 1.5 Uncertainty mechanisms should then be used to adjust allowances during ED3 in an agile manner as clearer evidence of network need emerges. This should allow interventions to proceed in line with demand, while maintaining the ability to respond when growth materialises and helping to manage the impact on consumer bills.
- 1.6 The ED3 load-related sensitivity analysis helps identify the appropriate funding route for interventions required under a DNO's load projection. It is intended as a guide to support future decisions on the appropriate balance between ex ante allowances and uncertainty mechanisms but does not pre-empt those decisions.
- 1.7 For the avoidance of doubt, the sensitivity does not replace a DNO's load projection, represent an alternative forecast or require DNOs to develop a separate load-related investment plan.

¹ See Long-term energy projections on page 14 of the ED3 Business Plan Guidance.

Guidance Annex 2 - ED3 common sensitivity for load-related expenditure**What is sensitivity analysis?**

- 1.8 Sensitivity analysis examines how an assessment outcome changes when a key input or assumption is varied. It supports decision-making by showing whether the proposed intervention or network investment and its timing remains robust under a plausible alternative assumption.
- 1.9 In the context of ED3, the sensitivity analysis tests network constraint dates and the need for load-related interventions during ED3. It should identify where a network need persists under both the principal load projection and the common sensitivity and where it moves to after ED3 under the sensitivity.

When should the ED3 load-related sensitivity be used?

- 1.10 DNOs should apply the sensitivity to load-related network needs where domestic heat pump uptake drives, or materially affects, the timing of a network constraint or proposed intervention. Where it is unclear whether heat pump uptake has a material effect, the DNO should apply the sensitivity.
- 1.11 DNOs should use it to:
- retest forecast network constraint dates and the need for intervention during ED3
 - identify investment that remains necessary during ED3 under both its load projection and the common sensitivity
 - identify investment whose need is deferred beyond ED3 under the sensitivity
 - inform whether efficient expenditure is proposed for ex ante allowances or an uncertainty mechanism
 - identify any preparatory works that may be justified to maintain optionality where the full investment need is not sufficiently certain for ex ante allowances
- 1.12 DNOs should not apply the sensitivity to remove or alter unrelated demand, generation or other tRESP building blocks in its load projection. Where a constraint is driven by several factors, the DNO should isolate the effect of the specified sensitivity adjustment while retaining all other assumptions unchanged, unless another part of the Business Plan Guidance requires a separate adjustment.

Related publications

- 1.13 Related publications are:
- ED3 Business Plan Guidance
 - ED3 Business Plan Data Tables guidance

2. ED3 LRE sensitivity analysis

Section summary

This chapter sets out the scope and specification of the common sensitivity, how DNOs should implement it, the decision rules for proposing the appropriate funding route and the associated BPDT submission requirements.

Sensitivity scope

- 2.1 The ED3 sensitivity specified in this guidance focuses on the impact of weaker domestic heat pump deployment on network constraints and the need for load-related interventions during ED3.
- 2.2 Domestic heat pumps have been selected because their deployment is a material driver of future growth in peak demand, but the pace and timing of uptake remain uncertain, with observed uptake currently running behind the tRESP projections.
- 2.3 The sensitivity is deliberately focused on domestic heat pump uptake so that its impact can be tested transparently and comparably across licence areas. All other tRESP building blocks and assumptions included in DNOs' load projections remain unchanged. This preserves each DNO's load projection, informed by the tRESP outputs, as the basis for long-term planning, rather than creating an alternative downside scenario for demand growth.
- 2.4 The common sensitivity is intended to:
 - provide a credible weaker-uptake profile in which deployment continues and grows progressively at a weaker rate
 - apply a common reduction in the projected volumes of heat pumps across licence areas
 - preserve the regional allocation and general shape of the uptake profile in the tRESP pathway
 - be straightforward for DNOs to implement and for Ofgem to assess

Specification

- 2.5 We have decided to specify the sensitivity as a quantified weaker uptake of domestic heat pumps out to the end of ED3. DNOs will first need to derive the annual additions from the relevant building blocks in the tRESP 10-year pathway, apply a scaling factor to the annual additions and then reconstruct the cumulative series. This avoids applying the factor repeatedly to cumulative values.
- 2.6 We consider that applying a 45% scaling factor provides an appropriate sensitivity for identifying the portion of load-related network need under each DNO's load projection that is low regret for ex ante allowances.

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- 2.7 A 45% scaling factor still allows for a material increase in deployment from 2026 levels and a sustained increase in domestic heat pump uptake over ED3. However, additions of domestic heat pumps in 2030 under the sensitivity will be around 25 percent less than the UK government's published ambition for 450k installations. Therefore, while we consider the sensitivity a plausible basis for testing investment need and timing against weaker uptake to guide ex ante allowances, it is not an expectation of what will happen or a full downside scenario.
- 2.8 DNOs should construct the common sensitivity for each of its licence areas as follows.
- 2.9 For the year ending 31 March 2026, replace the annual additions derived from the tRESP domestic heat pump profile with an estimate of new heat pump installations in new and existing homes in its licence area for the 2025/26 regulatory year. The estimate should be based on the latest available observed deployment data at the business plan submission date. As no single source provides a definitive measure of deployment, DNOs should have regard to the data sources and considerations set out in Appendix 1 and briefly explain the evidence, methodology and any adjustments used.
- 2.10 For each year ending 31 March 2027 to 31 March 2033, DNOs should derive the annual additions from the tRESP domestic heat pump profile and apply a 45% adjustment to the annual additions. For example, where the pathway projects 100 additional heat pump installations in a given year, the sensitivity should reduce this to 45 new installations for that year.
- 2.11 Apply the adjustment to both full electric (Lct_BB005) and hybrid (Lct_BB006) domestic heat pump building blocks.
- 2.12 Keep all other tRESP building blocks and assumptions unchanged for the purpose of this common sensitivity.
- 2.13 Use the adjusted annual additions to recalculate cumulative deployment and the change in network load at the relevant network level.
- 2.14 Retest the need, timing and efficient scope of interventions that were identified within the ED3 period under the DNO's load projection.

Implementation

- 2.15 DNOs should apply the sensitivity using the same network modelling methodology, tRESP consistent planning assumptions, asset ratings, planning standards, flexibility assumptions and treatment of existing committed connections used for each licence area's load projection. If a difference in modelling treatment is necessary, this should be clearly identified and justified.

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- 2.16 DNOs should also apply the sensitivity at a level of granularity appropriate to the network need being assessed. For primary networks, this should be at asset level where necessary. For secondary networks, portfolio or network-level modelling may be used where this provides a robust estimate of affected volumes and costs.
- 2.17 Where the sensitivity changes the timing or scale of an investment need, DNOs should reassess the efficient intervention, including whether flexibility or preparatory works would better protect consumers while maintaining readiness to respond if demand materialises.

Decision rules

- 2.18 DNOs should identify which sensitivity outcome applies and follow the corresponding treatment below when proposing the funding route for tRESP-related interventions.
- 2.19 Sensitivity outcome 1: Under the common sensitivity, the constraint continues to arise within the ED3 period and an intervention will be required during ED3.
- Treatment 1: The expenditure may be considered suitable for ex ante allowances, subject to the need, efficient scope, optioneering, cost and deliverability being justified.
- 2.20 Sensitivity outcome 2: Under the common sensitivity, the constraint continues to arise within the ED3 period but the need for an intervention moves to a later date or with a reduced requirement.
- Treatment 2: The expenditure may be considered suitable for ex ante allowances to the extent the intervention is supported by the sensitivity. The DNO should reassess the efficient scope and timing of the intervention, including flexibility options and whole-life cost considerations. This may support a different intervention being proposed for ex ante allowances or retaining the original intervention with revised timing.
- 2.21 Sensitivity outcome 3: Under the common sensitivity, the constraint moves beyond ED3 but arises within two years after the end of ED3.
- Treatment 3: The intervention would not normally be suitable for ex ante allowances. The DNO should propose the intervention for an uncertainty mechanism. The DNO might also consider whether specific preparatory or enabling works are low regret and efficient.
- 2.22 Sensitivity outcome 4: Under the common sensitivity, the constraint and need for an intervention moves to two or more years after the end of ED3.
- Treatment 4: The intervention is not suitable for ex ante allowances. The DNO should consider an uncertainty mechanism funding route instead.

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- 2.23 Where an intervention is deferred beyond ED3, DNOs should consider whether any preparatory works are justified during ED3. Such works should be limited to those needed to keep open a future option, avoid inefficient rework or secure a clear whole-life cost benefit. DNOs should explain why the work cannot also be deferred and identify the consumer risk if the wider need does not materialise.
- 2.24 Where a DNO proposes a funding treatment that differs from these decision rules, it should clearly identify the departure and provide evidence of the benefits, including the impact on consumers.

Submission requirements

- 2.25 DNOs must report the costs and volumes supported by the common sensitivity in the relevant 'a' ED3 BPDT worksheet and the incremental costs and volumes required only under the DNO's load projection in the corresponding 'b' worksheet.
- 2.26 Where the sensitivity supports only part of an intervention, costs and volumes must be apportioned between the 'a' and 'b' worksheets without double counting and must reconcile to the full investment need under a DNO's load projection.
- 2.27 The BPDT treatment should reflect the funding route indicated by the decision rules.

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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.

Appendix 1 Estimating historical heat pump deployment

A1.1 This appendix provides examples of data sources that DNOs may wish to consider when estimating heat pump deployment within their licence area. Such evidence may be relevant when developing the starting point for 2025/26 domestic heat pump uptake assumptions. DNOs may use different sources or approaches where they consider these to provide a more representative view of local deployment trends.

Data sources

- A1.2 For existing properties (retrofit installations), the most comprehensive publicly available source is the Microgeneration Certification Scheme (MCS) installation data. MCS data underpins the DESNZ heat pump deployment statistics and provides information on certified heat pump installations. Current DESNZ statistics cover retrofit installations but exclude installations in new-build properties and retrofit installations that are not MCS-certified.
- A1.3 For new-build properties, Energy Performance Certificate (EPC) records may provide a useful supplementary source. EPCs record the primary heating technology installed within dwellings and may therefore help identify new homes constructed with heat pumps. DNOs may also wish to consider housing completion statistics and other local housing datasets where available.
- A1.4 No individual dataset is likely to capture all heat pump installations within a licence area. DNOs may therefore find it helpful to triangulate multiple sources when developing their assumptions.

Data limitations and uncertainty

- A1.5 When interpreting historical deployment data, DNOs should consider the limitations of individual datasets and the potential for differences in coverage, timing and geographic allocation.
- A1.6 Relevant sources of uncertainty may include:
- exclusion of some non-MCS-certified installations
 - timing differences between equipment sales, installation, property completion and certification
 - differences in geographical attribution methodologies
 - uncertainty regarding the treatment of mixed-use and non-domestic properties.
- A1.7 Given these limitations, DNOs may exercise judgement when interpreting deployment data and avoid assuming that any single dataset provides a complete measure of heat pump uptake within a licence area.

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- A1.8 DNOs should state the datasets relied upon to estimate the 2025/26 starting point, and any adjustments applied to address known coverage gaps and the rationale for their chosen assumptions.