

Smart Optimisation Output Guidance

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This document provides guidance on meeting Special Condition 9.13, and specifically the obligation to deliver the Smart Optimisation Output.

The Smart Optimisation Output will promote and enable effective collaboration between the licensee and its local stakeholders and communities, leading to better decision making and more coherent local energy planning. This guidance explains the scope of the two principal activities that are required under this output and describes how these should be used to support and enable collaboration with a range of interested parties. The guidance also cross references other parts of the RIIO-ED2 framework, and wider industry guidance, that should inform activity under this licence obligation.

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Context

Ofgem is the Office of Gas and Electricity Markets which regulates the electricity and gas industries in Great Britain. Our principal duty is to protect the interests of existing and future gas and electricity consumers. Consumers' interests are taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply, and in the fulfilment of relevant statutory objectives when we are carrying out our functions as the gas and electricity regulator of Great Britain.

We work in various ways to protect the interests of current and future consumers. One way we do this is by regulating the network companies through the RIIO price controls. We set price controls to specify the services and level of performance that the network operators must provide for users and consumers and to restrict the amount of money that the network companies can recover through network charges over the length of a price control period.

In November 2022 we published our RIIO-ED2 Final Determinations for the electricity Distribution Network Operators (DNOs). This set out the key elements of the price control from 1 April 2023 to 31 March 2028. This included the Smart Optimisation Output. The purpose of this document is to outline the function of the Smart Optimisation Output, the activities that the licensee is required to deliver and the reporting requirements.

It is the responsibility of the licensee to understand the provisions of this Guidance Document and how those provisions apply to it. This Guidance Document comes into effect on 1 April 2023.

Related documents

Electricity Act 1989

RIIO-ED2 Final Determinations, Core Methodology Document, Chapter 4

Special Condition 3.9 (LRE Volume Driver) of the Electricity Distribution Licence

Special Condition 4.8 (Distribution System Operator ODI-F), of the Electricity Distribution Licence

Special Condition 9.13 (Smart Optimisation Output) of the Electricity Distribution Licence

Standard Licence Condition 31E of the Electricity Distribution Licence

1. Introduction

Background

1.1. In November 2022 we published our RIIO-ED2 Final Determinations for the electricity distribution price control. These set out the key elements of the price control from 1 April 2023 to 31 March 2028. This included a licence obligation for the electricity distribution licence holders to deliver certain activities as part of a Smart Optimisation Output (SOO).

1.2. In our Final Determinations, we described smart optimisation as utilising network data to improve decision-making on all aspects of network functions, particularly with respect to Load Related Expenditure (LRE), the establishment of Distribution System Operation (DSO) functions, and collaboration with local stakeholders.

Obligations

1.3. Special Condition (SpC) 9.13 of the electricity distribution licences requires the licence holder to deliver certain activities, summarised in Section **Error! Reference source not found.** and collectively referred to as the Smart Optimisation Output. The licensee must deliver these activities in accordance with this Smart Optimisation Output Guidance ("Guidance").

1.4. This document constitutes the Smart Optimisation Output Guidance referred to in Part B of SpC 9.13 and may be amended in accordance with the process described in SpC 9.13.

Purpose

1.5. The SOO will facilitate more meaningful collaboration and partnerships between DNOs and their local stakeholders by structuring and packaging DNO network and strategic development data to make them more accessible, transparent and interoperable.

1.6. Achieving net zero at least cost will require a highly optimised and integrated future energy system with a greater number of market participants communicating digitally to determine the dispatch of assets on the system.

1.7. DNOs have a fundamental role to play in enabling this future. Firstly, by making data about their existing networks more accessible and presenting a vision of how they see these networks evolving in the future and secondly, by engaging collaboratively with stakeholders, to both inform the licensee's own strategic planning activities and to support the creation of

least cost decarbonisation pathways for electricity, heat and transport, at a local level, in partnership with others.

1.8. The activities delivered under the SOO will ensure that DNO operating strategies and investment plans are informed by stakeholders, with the DNOs gathering insightful data from stakeholders about the likely location and nature of future load on their networks, leading to optimal decision making and networks being enablers of net zero at least cost.

1.9. By ensuring that DNO data is more accessible, transparent and consistent, the SOO will also help stakeholders to gain a greater understanding about the characteristics of the electricity distribution network in their area, acting as a vehicle for a more collaborative approach to the development of local area energy plans (LAEPs) and supporting whole system optimisation across different energy vectors (heat, electricity, transport).

1.10. The DNOs have already developed several digital tools and strategic programmes that will feed into the SOO, such as heat maps, Distribution Future Energy Scenarios (DFES) and Long Term Development Statements (LTDS). In addition, the publication of bi-annual Network Development Plans (NDPs) and ongoing cross-sector work to align on use of a Common Information Model (CIM), mean that DNOs will continue to develop their data and digital capabilities in ways that will further support the principles of accessibility and transparency through RIIO-ED2. The SOO means that these capabilities, principles and tools will be used as a vehicle for more effective collaboration, making it easier for local stakeholders to access and extract data that can be integrated and overlaid with gas, transport, land registry, urban and other datasets, to inform local cross-vector, whole system plans.

Scope

1.11. The Smart Optimisation Output is comprised of two parts.

- 1.11.1. **Part 1: Collaboration Plan;** a document describing how the DNO will collaborate with stakeholders through a more transparent and user-centric approach to the sharing of data and how the DNO will work in partnership with stakeholders to support the development of local and regional net zero strategies. Part 1 is described in further detail in Chapter 2.

1.11.2. **Part 2: System Visualisation Interface;** a section of the DNOs website and open data portal¹ that provides access to a package of forward-looking, open and accessible, digital network tools. Part 2 is described in further detail in Chapter 3.

1.12. In respect of both Parts 1 and 2, the licensee must collaborate with local stakeholders, to ensure that the SOO reflects the needs of customers and that work undertaken by licensees during RIIO-ED2, relevant to the future development of the wider energy system (eg for heat, natural gas, hydrogen, transport and storage), is accessible to, and informed by, stakeholders.

¹ The open data portal is being developed as a separate digital initiative under RIIO-ED2 and should be used once available.

2. Part 1: Collaboration Plan

Core requirements for the Collaboration Plan

2.1. The Collaboration Plan must:

2.1.1. Describe the licensee’s approach to sharing data with stakeholders, as a minimum through the System Visualisation Interface, and describe how the licensee will take account of local stakeholder plans and/or requirements (eg changes in demand, generation, storage or services), to inform its own strategic network planning and smart optimisation activities.

2.1.2. Explain the licensee’s approach to considering boundaries and interfaces through the SOO, such as with adjacent DNOs, embedded IDNOs, other utilities eg water, gas networks, electricity Transmission Owners (TOs) and the Electricity System Operator (ESO) and detail how the licensee is working across different energy vectors, including heat and transport, to facilitate whole system optimisation.

2.1.3. Explain how the licensees’ enhanced digitalisation and DSO capabilities are informing the licensee’s future upgrade plans and flexibility procurement.

2.1.4. Explain how the outputs from their DSO, LRE and Data & Digital strategies interact with one another and interface with the SOO.

2.1.5. Detail how the licensee is collaborating and partnering with other stakeholders in the co-development of certain strategic regional projects, plans and net zero strategies, where these are being led or coordinated by others. Active participation, by licensees, in the development of these strategies is fundamental and the Collaboration Plan should explain how interested stakeholders can access people and information from within the licensee’s organisation to support such collaborative projects.

2.1.6. Highlight and reflect changes in the wider data assets, digital tools and strategic planning decisions that are feeding into the SOO.

2.2. DNOs must participate fully in the co-development of local area energy plans, net zero roadmaps and other strategies and cross-utility solutions, led by local and regional authorities and supported by the communities they serve, that will enable least cost decarbonisation

pathways for power, heat and transport, where the involvement of the licensee is material in the successful planning and delivery of such strategies and solutions.

Instructions for the Collaboration Plan

2.3. The licensee must publish their Collaboration Plan for each reporting year on, or before, 1 May 2024 and yearly by each subsequent 1 May.

2.4. The Collaboration Plan must not exceed a length of 20 pages excluding annexes.

2.5. The licensee must ensure that the SOO is available on its website.

Measuring stakeholder participation and satisfaction of the useability of the SOO

2.6. The licensee must measure the effectiveness of its SOO and seek feedback on ways that it could be improved, by engaging with stakeholders, including users of the System Visualisation Interface. The licensee will need to demonstrate how they have engaged with stakeholders in the development of the SOO and show how, on an ongoing basis, they are using stakeholder feedback to improve their Collaboration Plan and System Visualisation Interface to maximise the value of the SOO for stakeholders. The DNOs must evidence this engagement and subsequent action through engagement logs and change logs, containing detailed comments, decisions and actions.

2.7. The engagement logs and change logs should be included as an Appendix to the Collaboration Plan, as a record of how stakeholder engagement has influenced the development of the SOO.

2.8. The licensee must provide the facility for users to feed comments back to the licensee directly from the System Visualisation Interface.

2.9. Where new digital tools are planned to be launched, details and timescales of these should be included within the Collaboration Plan.

3. Part 2: System Visualisation Interface

Core requirements for the System Visualisation Interface

3.1. The System Visualisation Interface must:

- 3.1.1. Provide a representation of the DNO's existing network assets and associated constraints using both static and dynamic data. Such data should include the type, capacity, and location of assets and the location and specific nature of constraints, on all parts of the distribution network, at all voltage levels. Heat maps and raw data must be made available through an Application Programming Interface (API) that is common across all DNOs.
- 3.1.2. Provide a representation of the DNO's network in the future, including expected constraints. Such data is to be presented in a format and time horizon to be determined collectively by DNOs and their stakeholders and made available through an Application Programming Interface (API) that is common across all DNOs.
- 3.1.3. Highlight where operational and growth challenges on the licensee's network might emerge, including future constraints, and where opportunities for flexibility services will arise, as a means of avoiding or deferring the reinforcement or replacement of assets.
- 3.1.4. Incorporate data sets, digital tools, strategies and reports that exist under their respective DSO, LRE and Data & Digitalisation strategies, including but not limited to:
 - LTDS
 - heat maps
 - NDPs
 - DFES
 - network impact assessments
 - data visualisation and digital tools
 - strategic network planning outputs
 - Primary and secondary reinforcement data incl. the Load Index submission
 - LRE strategies and plans
 - DSO strategies and Digitalisation Strategies and Action Plans
 - flexibility strategies and procurement plans

3.2. DNOs must work with their stakeholders to develop a System Visualisation Interface that meets the principles of transparency, accessibility and interoperability.

3.3. The SOO does not require the development of a digital map or platform. The System Visualisation Interface must be a section of the licensee’s website and open data portal² that provides access to this package of forward-looking, open and accessible, digital network tools and related information.

3.4. Interoperability between the different licensee System Visualisation Interfaces, is critical to enable users to efficiently interface with these platforms. In meeting their obligations in respect of the SOO we expect interoperability to be achieved through data best practice (DBP). The DNOs’ compliance with DBP will standardise the format of any common data assets shared and make the same data assets easily shareable and accessible across all DNOs. We also expect network assets to be described using the CIM data standard, as developed through the LTDS working group³.

3.5. If, in the process of collaborating with local stakeholders, DNOs decide that there is the need for additional digital products or services, these should be incorporated into the SOO.

Instructions for the System Visualisation Interface

3.6. The System Visualisation Interface should be accessible to stakeholders no later than 1 October 2023 and for the remainder of the Price Control Period. It is expected that the content that can be accessed through the System Visualisation Interface will develop over the course of RIIO-ED2, however, as a minimum, the digital tools described at 3.1.1 and 3.1.2 must be accessible by 1 May 2024.

3.7. The licensee must ensure that the SOO is available on its website.

3.8. The licensee must endeavour to update information within their System Visualisation Interface as soon as reasonably practicable and make clear to users the polling frequency for specific data sets and the time and date of the most recent update.

² The open data portal is being developed as a separate digital initiative under RIIO-ED2 and should be used once available.

³ <https://www.ofgem.gov.uk/publications/common-information-model-cim-regulatory-approach-and-long-term-development-statement>