

Regional Data Repository User Guide

Open Networks Whole Energy Systems (WS4) Product 3

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DOCUMENT CONTROL

Authorities

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1	09/06/21	Oli Spink	
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Related documents

Reference 1	
Reference 2	

Change history

Version	Change reference	Description
1		Initial draft for comment by product team and Workstream groups
1.1		Final report incorporating product team and workstream feedback

Distribution

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Introduction

About ENA

Energy Networks Association (ENA) represents the owners and operators of licenses for the transmission and/or distribution of energy in the UK and Ireland. Our members control and maintain the critical national infrastructure that delivers these vital services into customers' homes and businesses.

About Open Networks

Britain's energy landscape is changing, and new smart technologies are changing the way we interact with the energy system. Our Open Networks project is transforming the way our energy networks operate. New smart technologies are challenging the traditional way we generate, consume and manage electricity, and the energy networks are making sure that these changes benefit everyone.

ENA's Open Networks Project is key to enabling the delivery of Net Zero by:

- opening local flexibility markets to demand response, renewable energy and new low-carbon technology and removing barriers to participation
- providing opportunities for these flexible resources to connect to our networks faster
- opening data to allow these flexible resources to identify the best locations to invest
- delivering efficiencies between the network companies to plan and operate secure efficient networks

Introduction

Workstream 4 overview

ENA Open Networks Work Stream 4 was created in response to stakeholder feedback in early 2019 to build on the work across the electricity Transmission and Distribution sectors to consider the whole energy system. Working closely with the Gas Networks as well as other industry reps including Energy UK, ADE and ESC, WS4 has made significant progress in building the foundations for whole system and for tackling whole system challenges.

Product 3 overview

Product 3 (Coordinated Regional Data Gathering) aims to develop a methodology for a consistent and co-ordinated approach to gathering regional data. 'Regional data' in this context refers to data that each network gathers from Local Authorities and other stakeholders. This outlines the expected growth of new customer connections in each network area, which can be combined with national level targets and scenario frameworks allows networks to undertake strategic investment planning.

Currently all of the networks gather this data independently so the new method would deliver efficiencies for the parties being requested data and consistency for industry. This was identified as a recommendation from the Investment Planning opportunity analysis work done in 2019 by Workstream 4.

The [2020 End of Year Report](#) for the Coordinated Regional Data Gathering product in WS4 (previously Product 5) outlines the forward plan for 2021. The two shortlisted options to coordinate regional data gathering are outlined below:

- Network led – an approach where networks agree to share data that is collected with other networks (gas and electricity) that share geographic areas as part of their network boundary. Note that there are different approaches for how this interaction can take place.
- Local Authority led – an approach that encourages alignment in how and where regional data is published rather than aligning processes to gather data in the existing format.

It is noted that the two approaches are not mutually exclusive. A local authority led approach would take longer to implement than a network led approach but could lead to more standardisation in how data is collated and used by networks.

Purpose of this document

As part of the 'network led' approach, a Regional Data Repository has been created to allow gas and electricity network companies to share regional data. This document is intended to be used as a user guide for network representatives to use and share data, covering the following topics:

- Structure and format of repository
- Data scope
- Intended process for using repository
- Update and improvements process

The Regional Data Repository is intended to be used as a proof of concept. It will allow network companies to demonstrate that a Whole Energy System approach is being taken to show how stakeholder input is used for strategic investment planning. Initially, as networks undertake the data collection process as a business-as-usual activity, the product representatives will be responsible for populating the repository with data when it is made available. The scope and proposed process is expected to change over time as users test the repository. If the concept of the Regional Data Repository adds value to networks, the responsibility for populating the data could be passed onto Local Authority stakeholders.

Structure of Repository

Location

The Regional Data Repository is currently operated as part of the Huddle workspace for the Workstream 4 of the Open networks Project, to allow for consistency with existing workspaces used for Open Networks. Some of the data that regional stakeholders provide to networks could be commercially sensitive in nature (such as a draft Local Plan that has not yet been published). As a result, it is intended to keep the Regional Data Repository user list limited to the members of the Workstream 4 Huddle workspace. This will be reviewed on a periodic basis, with the intention of moving to a separate Huddle workspace in future if necessary.

File Structure

As data collection activities are undertaken by networks for a licence area/network owner area level at a time, a file structure has been used as shown in Figure 1. This structure has been proposed as the repository will be populated by networks, which often collect data for an entire licence area or network owner area at a time. The proposed file structure will allow network companies to download/upload data to the repository without many additional internal processes being required.

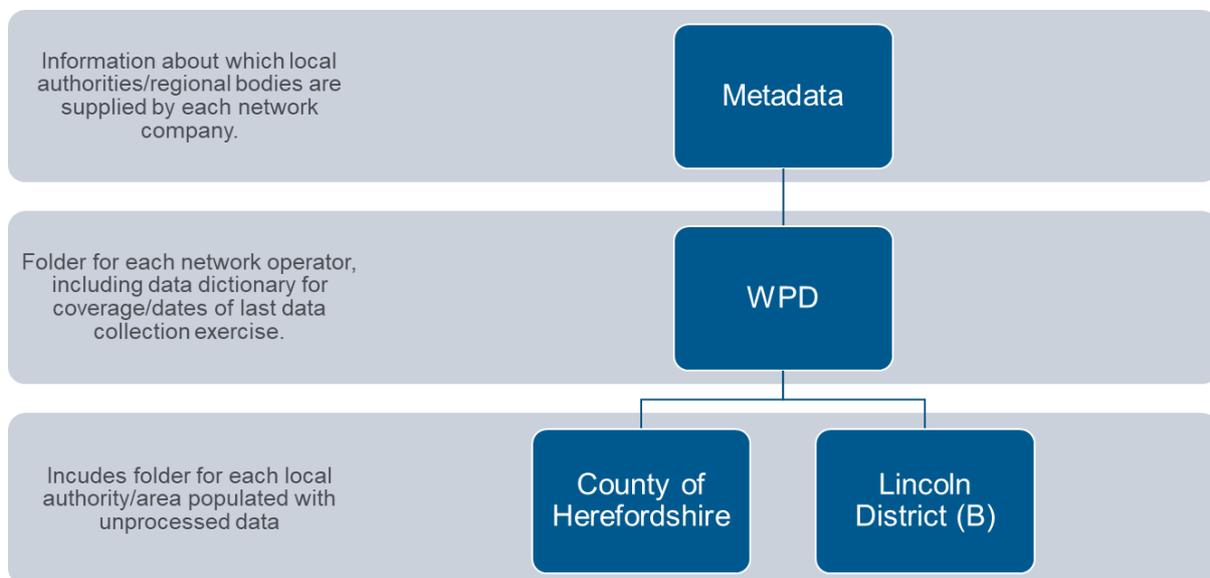


Figure 1: Example of the file structure for the Regional Data Repository

The 'Metadata' folder contains general documents, including this user guide and an activity and update log to allow users to record when the Regional Data Repository has been accessed and utilised. A directory for each network company is included, in which contains a folder for each Local Authority supplied by the network operator with the regional data collected. Within each network company folder, a timestamped or versioned folder structure could also be used to ensure that the most recent data collected is easily available to other product representatives.

Use of templates

One of the delivery challenges identified in the [2020 Final Report](#) for a coordinated approach was the inconsistent nature of how Local Authorities currently make their data available to networks. This can range from text within PDF reports from a Local Plan to spreadsheets containing data for individual developments with associated geographic spatial datasets. As a result, a structure whereby regional data in any format can be uploaded to the repository is to be used for the first iteration of the repository. After a period of user testing and feedback, it is expected a more standardised template of how the data is collected/transcribed will be developed and recommended for future years.

Data Scope

The scope of what data is required to be included in the regional data gathering exercise was outlined in the [2020 Final Report](#) and agreed by all Product representatives. If all regional bodies were to provide the data outlined below, this could be used by any network to align with existing investment planning activities. It is noted that this scope may be subject to change as new data becomes available to the networks.

General

This data scope can be broken down into three subcomponents: planned developments, infrastructure planning and distributed generation planning. With the proposed data scope, the following caveats have been considered:

- **Timelines of data collected** – many strategic network planning projections go out to 2050. It is acknowledged that Local Plans do not cover the same timescales; it is proposed to collect data for as many years as are available.
- **Data inconsistency** – as local development planning does not follow a consistent framework; it is acknowledged that the data received from a regional data gathering exercise may differ in detail between regional bodies. The details of the scope below outline the desired level of detail; however it is accepted this is not always possible.
- **Data sources** – for planned developments, the information is usually collected at a Local Authority level. For wider infrastructure strategic planning, this may be conducted at multiple Local Authorities working together, or by regional governments. As a result there may be multiple data sources to collect all of the required data for a given area.

Planned Developments

This section covers the land allocation for new residential and industrial/commercial developments which are published in Local Authority Development Plans. This data is normally provided for a list of developments, which networks typically spatially allocate on where the development would likely connect to on the electricity or gas network. The table below summarises the data currently collected by networks which would be required for a coordinated regional data gathering approach.

Table 1: Summary of data currently collected by networks on new planned developments

	Domestic	Industrial & Commercial
Unique reference	The regional data gathering will be reviewed annually, therefore a unique development reference would be beneficial to compare different data submissions between years.	
Location	Local Plans often differ in the level of information that is provided for development locations. In order of preference, the following location data is required: <ul style="list-style-type: none"> • Geographic dataset (geo-package, shapefile etc.) • Site location coordinates (latitude/longitude) • Post code(s) 	
Units	Number of houses	Floor space of development. Note that Local Plans sometimes publish site area and floor space interchangeably.
Subcategories	Description of housing type (terraced, flat etc.) and proposed Energy Performance Certificate (EPC) rating. Also, information on if new developments will have solar PV installed.	Description of land use (retail, warehouse etc.) and proposed Energy Performance Certificate (EPC) rating. Note that many Local Plans use planning use class to define I&C land use.
Transport requirements	Number of houses with EV chargers installed and off-street parking	Number of spaces provided with EV chargers
Heating requirements	Proposed fuel source for heating, with district heating scheme potential	
Phasing	Number of units expected to be built per year, also if the connection to the electricity and/or gas network is expected to be in different phases. If the proposed development holds an accepted connection offer to the electricity/gas network, this is useful information to cross reference and remove the risk of double counting new developments in future forecasts.	
Land source	Is the development proposed to be built on greenfield or brownfield land? Will there be any demand reduction as a result of the new development, such as an existing development closing.	

Infrastructure Planning

This covers any additional publications or forecasts which regional bodies have available which cover technologies which can have a significant impact on the local electricity or gas network. This data may be captured as part of a wider decarbonisation strategy. This data may be more qualitative in nature than the data collected for planned developments, nevertheless this can be useful to incorporate to longer term strategic planning. The table below is a non-exhaustive list of the type of data that networks normally collect, often in a survey or questionnaire.

Table 2: Summary of data currently collected by networks for wider infrastructure planning

Information currently collected by networks	
Transport infrastructure planning	<p>Does the regional body have a strategy in place to decarbonise transport in the local area? If so, what measures are being used to implement this plan and what fuel source(s) are proposed to be used? Typical options are summarised below (note that these options are not mutually exclusive):</p> <ul style="list-style-type: none"> • Decarbonisation of public transport and/or council owned vehicle fleet in local area. If possible, more details on the type of vehicles and fuel source/expected charging behaviour would be beneficial. • Introduction of a clean air zone (or equivalent) to reduce emissions, • Provision of a public Electric Vehicle charging network. If so, more information would be required such as the location, type of chargers, capacity and level of managed charging and phasing.
Heat infrastructure planning	<p>Does the regional body have a strategy in place to decarbonise heat in the local area? If so, what measures are being used to implement this plan and what fuel source(s) are proposed to be used? Typical options are summarised below (note that these options are not mutually exclusive):</p> <ul style="list-style-type: none"> • Plans to install/extend district heating or CHP schemes in the local area? If so, further details on the type, location, capacity, primary and backup energy source and the type of demand that is supplied (new or existing) would be required. • Area wide plans to increase domestic energy efficiency (such as improving thermal insulation in social housing)

Distributed Generation Planning

Information about a regional bodies historic approach to planning permission for distributed generation schemes connected in the area are often used to inform the regional uptake scenarios for different generation technology types. The following data is currently collected by networks:

- The number of energy projects which have applied for planning permission to connect a generator in the local area. In addition, the number of these applications that have been approved, rejected and also appealed following rejection, with a breakdown of:
 - Technology type
 - Location (as precise as possible)
 - Size (installed capacity)
 - Timetable to connect

Process Diagram

The Regional Data Repository is intended to be used to supplement, and not replace, existing data gathering processes used by networks. The process diagram in Figure 2 outlines the expected usage of the Regional Data Repository, with each of the steps explained in the following section.

Stage 1: Networks at the start of strategic planning process

At the start of each periodic cycle for long term network planning, the responsible network representative for the activity should be highlighted and the user list for the Regional Data Repository updated.

Stage 2: Check data repository

The network representative will be able to check the Regional Data Repository for the existence of regional data for the local authority areas which the network company supplies. This exercise would be from checking the folders of the gas/electricity network operators that share a common supply area.

Stage 3: Determine if existing data is suitable for use

The data that is held in the repository may be suitable for use by partner networks for their purposes. The update log in the Metadata folder contains a broad summary of the data collected by each company, which is to be populated when any new data is uploaded to the repository. There are a number of reasons for determining that the data collected by other network companies is unsuitable for use, for example:

- Regional data is outdated, due to the publication of new Local Plan information in the intervening time between
- Regional data does not fully cover the Data Scope outlined above, and extra data collection activities are required to make the data suitable for use.
- Regional data does not offer coverage of all local areas required for the network operator in question.

Stage 3a: Regional Data judged suitable for use

If the product representative determines that the data contained in the Regional Data Repository is suitable for use, this can be downloaded and processed using the existing processes for strategic planning for each company. It is worth noting that by using the data available in the Regional Data Repository, this does not limit any network company to undertake stakeholder engagement with local stakeholders for clarification and obtain additional information.

To demonstrate the benefit of the Regional Data Repository to networks and the efficiency saving made by not requesting duplicate from local stakeholders, it is proposed that the network company outlines the benefits, which could potentially be included as part of a Whole System Coordination Register.

Stage 3b: Regional Data judged unsuitable for use

If the product representative determines that the data contained in the Regional Data Repository is not suitable for use, this should be documented on the activity log contained in the metadata folder. This should contain justification for why the data is unsuitable, which can be reflected by changes to the Data Scope as part of a user forum for the Regional Data Repository. With ongoing usage and testing

of this process, it is expected that the Data Scope will converge on a standardised list of requirements with templates, which can then inform a more Local Authority led approach to making regional data available to networks.

Stage 4b: Regional data gathering undertaken by networks

If the product representative determines that the data contained in the Regional Data Repository is not suitable for use, it is necessary for the network company to undertake a regional data gathering exercise as would normally be conducted for strategic planning purposes. As part of this data collection exercise, regional stakeholders should be asked for their consent to share the data provided with other energy networks as part of the Regional Data Repository.

Stage 5b: Collected regional data uploaded to repository

Once the data gathering exercise has been completed by the network company, the data should be uploaded to the Regional Data Repository to the network company folder. The update log should also be updated with the following information:

- Version (if previous data collection uploads exist)
- Snapshot or period of data collection exercise
- Does data collection offer full coverage of network owner area?
- Does data collection offer full coverage of data outlined in Data Scope?
- Responsible person and contact information

Stage 6: Regional Data ready for use

At this stage, each network company should be in the position whereby regional data has been collected and can be processed for the purposes of strategic network planning. The data processing could include an estimated point of connection and expected demand/usage profiles for network capability analysis.

The Regional Data Repository has been designed in such a way to not add undue process and delay to the data collection activity currently undertaken by networks.

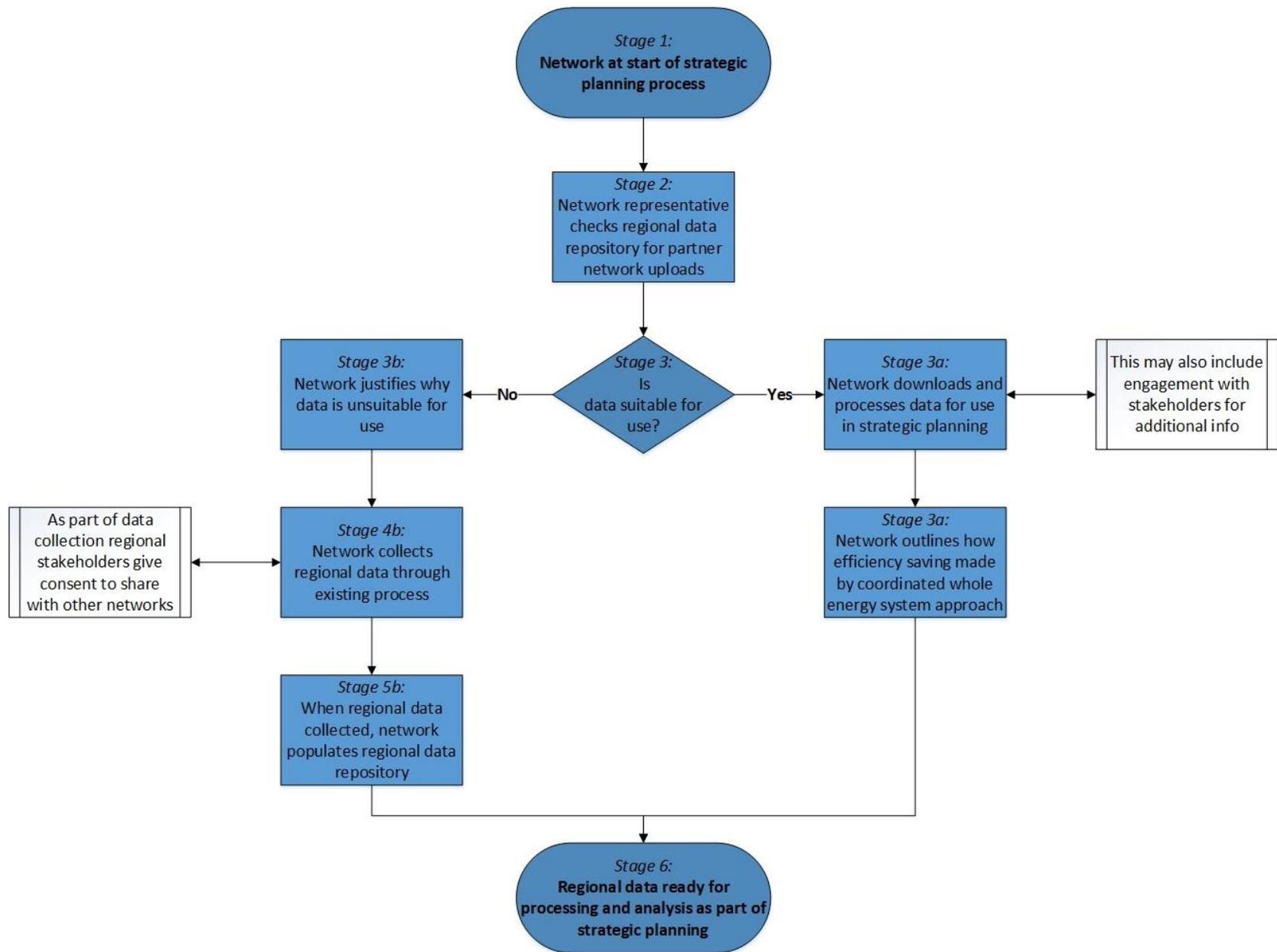


Figure 2: Outline process to follow when using the Regional Data Repository

Next Steps

The Regional Data Repository is set up and available for a period of testing and feedback by partner networks. As previously noted in this report, the Regional Data Repository is intended to be used to promote Whole Energy System collaboration for the activity of collecting data from local stakeholders for use in strategic network planning. Iterative improvements are expected to be made to the process and repository, whereby networks converge on a standardised set (and format) of data that is collected from regional stakeholders.

The Regional Data Repository follows the 'network led' approach to coordinating the regional data gathering exercise. In the longer term, further standardisation could be driven by a 'local authority led' approach, whereby a Regional Data Repository is updated by regional stakeholders on a continual basis in a common format for networks to freely access. The Regional Data Repository aims to demonstrate the suitability of a repository for networks to use and can inform future recommendations for the implementation of a 'local authority led' approach.



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