

**The Voice of the Networks**



# **Energy Networks Association**

## **Open Networks Project**

### **Coordinated Regional Data Gathering**

**WS4 P5**

**Final Report**

**May 2020**

## Document Control

### Version Control

Version	Issue Date	Author	Comments
1.0	5 <sup>th</sup> May 2020	OS	Released for comment to P5 and WS4
2.0	18 <sup>th</sup> May 2020	OS	Collated comments from WS4, released for Steering Group/Gas Futures Group

## Table of Contents

<b>1</b>	<b>Background .....</b>	<b>1</b>
1.1	Introduction .....	1
1.2	Scope.....	1
1.3	Team members.....	1
1.4	How regional data is used by networks .....	2
1.5	Interaction with other related work.....	2
1.6	Outcome and benefits.....	2
<b>2</b>	<b>Data Scope .....</b>	<b>3</b>
2.1	General .....	3
2.2	Planned Developments .....	3
2.3	Infrastructure Planning.....	4
2.4	Distributed Generation Planning.....	5
2.5	Summary.....	5
<b>3</b>	<b>Delivery challenges .....</b>	<b>6</b>
3.1	Timescales for Data Collection .....	6
3.2	Stakeholder engagement .....	6
3.3	Data checking .....	6
<b>4</b>	<b>Analysis of Data Gathering Mechanisms .....</b>	<b>7</b>
4.1	Option 1: Centrally Planned Approach .....	7
4.2	Option 2: Coordinated Regional Data Sharing .....	7
4.3	Option 3: Coordinated Local Plans.....	8
<b>5</b>	<b>Conclusions and recommendations .....</b>	<b>10</b>
5.1	Conclusions .....	10
5.2	Recommendations .....	10
<b>6</b>	<b>Next steps.....</b>	<b>11</b>
<b>7</b>	<b>Appendix.....</b>	<b>12</b>
7.1	A: Survey of network timescales for regional data delivery.....	12

## List of Tables

Table 1: WS4 P5 members.....	1
Table 2: Summary of data currently collected by networks on new planned developments .....	3

Table 3: Summary of data currently collected by networks for wider infrastructure planning .....	4
Table 4: Cost benefit analysis for a single service provider for regional data .....	7
Table 5: Cost benefit analysis for a coordinated data sharing approach between networks .....	8
Table 6: Summary of next steps .....	11
Table 7: Summary of indicative delivery requirements for regional data .....	12

# 1 Background

## 1.1 Introduction

Product 5 was recommended in the Workstream 4 (WS4) Final 2019 Report<sup>1</sup>, which identified the opportunity to take a consistent and co-ordinated approach to gathering regional data, particularly Local Authorities but also potentially other parties. Currently this data is gathered independently by all of the networks (and probably in different ways requesting different data) so consistency 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.

## 1.2 Scope

This Product aimed to define a process to acquire, update, and share the critical data from regional bodies required for planning medium and long term incremental network capacity. The process taken by the Product team is outlined below:

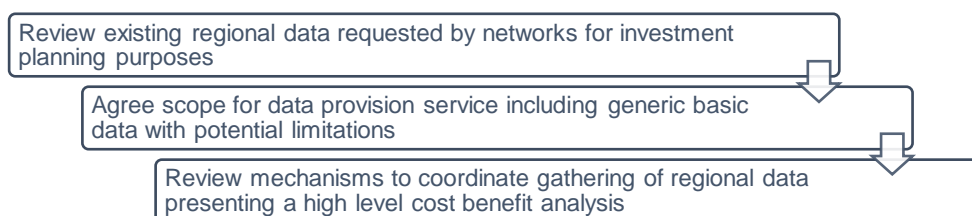


Figure 1: Outline of process followed by Product 5 team

## 1.3 Team members

Product 5 was supported by a range of network participants:

Table 1: WS4 P5 members

Name	Company
Colin Thompson	SGN
Phil Halsey	Cadent
Stuart Easterbrook	Cadent
Ian Coates	NGN
Bethan Winter	WWU
Michael Rieley	SSEN Transmission
Paul Sullivan	NGET
Nick Harvey	NGESO
Christos Kaloudas	ENWL
Maciej Fila	SSEN Distribution
Matt White	UKPN
Oli Spink	WPD

<sup>1</sup> Energy Networks Association: Open Networks project Workstream 4 Whole Energy System Final 2019 Report <https://www.energynetworks.org/assets/files/ONP-WS4-Final%20Report-PUBLISHED.pdf>

## 1.4 How regional data is used by networks

Regional data is used by networks as an input to internal forecasting processes. For electricity networks, regional data forms an input to the Distribution Future Energy Scenarios (DFES) planning processes, which in turn inform the forecast demand growths used in regulatory submissions such as the Long Term Development Statement and for RII0-ED2 business planning. For gas distribution networks regional data is also used as an input to forecasting processes (in some cases a DFES study), but also for ensuring that short term planning aligns with Local Authority plans. Note that this impact of this product primarily focuses on electricity distribution and transmission networks and gas distribution networks; there is limited influence and impact on the system operator as regional data is not collected from Local Authorities.

The exercise of collecting regional data is often done by external agencies on behalf of networks, however there are some internal stakeholder engagement departments within networks who collect this data. The data collection process usually involves contacting all of the Local Authorities (and other parties such as local regional government where appropriate) in a given area to obtain the most up to date information for planned developments and local energy strategies.

The scope of Product 5 is to investigate and reduce duplication of the regional data gathering processes that networks use as an input into business planning processes, by considering a Whole Systems approach to collecting and sharing this data.

## 1.5 Interaction with other related work

Below is a list of other related work in this area, and how Product 5 relates to the work undertaken:

- **Open Networks Workstream 1B Product 2 (Whole System FES):** this Product aims to complete the detailed process development for coordination of national and regional FES. Part of the work done by this Product in 2019 was determining Building Blocks, different technology types which all electricity networks would share and report on in DFES publications. Whilst closely related to Product 5, this does not investigate how networks collect data for each of these building blocks to form the scenario projections and if there are efficiencies to be made. This also applies to **Open Networks Workstream 4 Product 3 (Gas input to Whole System FES)**, which aims to look to bring further alignment to the FES process by expanding processes developed in WS1B P2 in 2019 to gas networks.
- **Local Area Energy Planning (LAEP):** this project by Energy Systems Catapult developed and tested a Whole Systems concept of planning, where electricity and gas networks can help to shape a local energy strategy on a particular area. This approach can be used to develop unique strategies for each local area which networks are well placed to engage in. However; networks are still required to undertake long term business planning across their licence areas which requires regional data.

## 1.6 Outcome and benefits

Consistency in data gathering delivers benefits to stakeholders (in particular Local Authorities and regional government) by removing duplicate requests for similar data from electricity and gas networks. A coordinated approach to data gathering should encourage greater consistency in the data to be used by energy networks for business planning purposes. Coordination can demonstrate the benefit of a Whole Energy Systems approach for gathering data used in long term planning if inefficiencies in current processes are removed.

## 2 Data Scope

A strawman of the scope of data that networks currently request from Local Authorities and regional bodies was circulated in January 2020 for comment and to define a general regional data scope, which broadly covers all of the data required by networks for existing processes. The comments were incorporated and a regional data scope outlined below.

### 2.1 General

This data scope can be broken down into three subcomponents; planned developments, infrastructure planning and distributed generation planning. The regional data scope was presented and discussed at a meeting on 3<sup>rd</sup> April 2020. 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.

### 2.2 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 2: Summary of data currently collected by networks on new planned developments

	Domestic	Industrial & Commercial
<b>Unique reference</b>	The regional data gathering will be reviewed annually, therefore a unique development reference would be beneficial to compare different data submissions between years.	
<b>Location</b>	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"> <li>• Geographic dataset (geo-package, shapefile etc.)</li> <li>• Site location coordinates (latitude/longitude)</li> <li>• Post code(s)</li> </ul>	
<b>Units</b>	Number of houses	Floor space of development. Note that Local Plans sometimes publish site area and floor space interchangeably.

<b>Subcategories</b>	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.
<b>Transport requirements</b>	Number of houses with EV chargers installed and off street parking	Number of spaces provided with EV chargers
<b>Heating requirements</b>	Proposed fuel source for heating, with district heating scheme potential	
<b>Phasing</b>	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.	
<b>Land source</b>	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.	

## 2.3 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 3: Summary of data currently collected by networks for wider infrastructure planning

Information currently collected by networks	
<b>Transport infrastructure planning</b>	<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"> <li>• 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.</li> <li>• Introduction of a clean air zone (or equivalent) to reduce emissions,</li> <li>• 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.</li> </ul>



<p><b>Heat infrastructure planning</b></p>	<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"> <li>• 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.</li> <li>• Area wide plans to increase domestic energy efficiency (such as improving thermal insulation in social housing)</li> </ul>
--	--

## 2.4 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

## 2.5 Summary

The outlined regional data scope has been agreed by all Product representatives. If all regional bodies were to provide the data outlined above, 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.

### 3 Delivery challenges

Whilst networks broadly agree with the principle of a standard to follow when gathering regional data, the following delivery challenges of a coordinated approach were highlighted.

#### 3.1 Timescales for Data Collection

Many of the networks currently hold contracts with external parties to collect this data, which is required to feed into other business procedures. Due to the large number of regional bodies that are involved in the data collection process, agreeing an implementation timescale to collect regional data which would suit all parties is a challenge. This is due to:

- a) Local Authorities and regional bodies do not follow a common timetable to refresh regional data outlined in the scope, and
- b) Networks use this data at different snapshots for use in business planning procedures. To demonstrate this point, the Product team members populated a table to demonstrate when all regional data must be collected to align with existing business processes. This table can be found in Appendix 1.

As there is no alignment for when regional data is updated by Local Authorities or used by networks, it is challenging to standardise a process such that the same regional data is used by networks without the risk of updated information being available.

#### 3.2 Stakeholder engagement

The existing processes used by networks to obtain regional establishes engagement between networks and regional bodies and provides a point of contact to discuss future energy planning, an aspect of scenario planning which is highly valued among networks and stakeholders. By coordinating the approach to regional data gathering between existing gas and electricity networks, this could potentially reduce the level of stakeholder engagement between networks and regional bodies.

#### 3.3 Data checking

It was noted by networks that after the data outlined in the scope is collected this is not normally the end of the engagement process between networks and regional bodies. Often, networks will be required to clarify data and continually engage throughout the strategic planning process. This activity may be more difficult if the lines of communication between networks and regional bodies are not well established through the data gathering process. It is noted that a coordinated approach to regional data gathering is considered a first step to collect initial data, it is recognised that follow up queries will be required by networks.

Data inconsistencies are often because there is no standard template for Local Plans, which can result in confusion for networks when using this data. As an example, new industrial and commercial developments are commonly provided as an area in m<sup>2</sup> or hectares; however this can refer to the floor space of a development or the site area.

## 4 Analysis of Data Gathering Mechanisms

This section reviews three different mechanisms to procure regional data and share between networks. The analysis considers the practicalities of implementation and whether any of the aforementioned delivery challenges can be alleviated.

### 4.1 Option 1: Centrally Planned Approach

Option 1 considers a centrally planned approach to collecting data on behalf of networks. This would be provided as a single service, which acts as a first point of contact to collect and curate the required data, and upload to a central repository for use by all networks.

Table 4: Cost benefit analysis for a single service provider for regional data

Option 1	Advantages	Disadvantages
<b>Delivery Implications</b>	<p>In time a single service provider could provide industry expertise in gathering and scrutinising Local Authority plans.</p> <p>Delivery requires a tendering process, which may impact existing processes for networks for gathering of regional data in 2020/21 with existing contractual arrangements.</p>	<p>Some networks use internal resource to collect regional data so would be unwilling to support the use of external services.</p> <p>Risk of unavailability of up to date regional data for a network to use is not within the direct control of the network, with potential implications on other business processes and forecasting.</p>
<b>Timescales</b>	<p>Single service provider responsible for ensuring that the most up to date regional data is available when published by Local Authorities.</p>	<p>Continual process to refresh regional data when updates are available, which may result in networks using data from different Local Plans if snapshots taken at different times.</p>
<b>Stakeholder Engagement</b>	<p>A single service provider would develop close links to regional stakeholders.</p>	<p>Removing networks from the stakeholder engagement process risks losing existing relationships which networks have with stakeholder in their regions.</p>
<b>Data Inconsistencies</b>	<p>A single service provider can encourage a common language to be used in future Local Plans with Local Authorities, in time this can reduce data inconsistencies.</p>	<p>A single provider for the UK may not capture the nuances between different regions in sufficient detail, without the detailed local knowledge that networks have.</p>

### 4.2 Option 2: Coordinated Regional Data Sharing

Option 2 considers an approach where networks take the responsibility to collect and share regional data in a coordinated approach. This could be achieved through a variety of options:

- Entering into bilateral agreements for all networks in a given area, such that regional data is jointly collected by all network operators.
- Dividing the UK into sections, where a serving network is responsible for collection of data on a periodic basis and share with other network operators in this region.

**Table 5: Cost benefit analysis for a coordinated data sharing approach between networks**

Option 2	Advantages	Disadvantages
<p><b>Delivery Implications</b></p>	<p>This could lighten the burden of data collection for networks if shared between the gas and electricity networks in a licence area.</p> <p>In some cases networks already employ this policy, where the same external agency is used for DFES studies (e.g. WPD, WWU and Cadent). The existing knowledge base is well established and existing data able to be shared.</p>	<p>Approach requires commitment from networks to work together and use each other’s regional data. Risk of unavailability of up to date regional data for a network to use is not within the direct control of the network, with potential implications on other business processes and forecasting.</p> <p>Robust framework required to ensure all user’s needs are satisfied.</p>
<p><b>Timescales</b></p>	<p>Networks would only collect data as and when it is required, removing inefficiencies by repeatedly collecting data that is not used.</p>	<p>If procured individually following internal timescales by networks, there is a risk that the most up to date regional data is unavailable when another network needs to use it.</p>
<p><b>Stakeholder Engagement</b></p>	<p>If using a collaborative approach between network operators to collect data within a region, the stakeholder engagement exercise is maintained and a Whole System approach clearly demonstrated to stakeholders.</p>	<p>If using an approach whereby the UK is divided into areas where a network is responsible to collecting data, the other networks in this area may lose a stakeholder engagement opportunity with Local Authorities which they are not nominated to collect data from.</p>
<p><b>Data Inconsistencies</b></p>	<p>Networks can use detailed local knowledge to account for regional difference in how Local Plans are produced.</p>	<p>Regional differences in Local Plans may be treated differently between network operators with no standard approach.</p>

### 4.3 Option 3: Coordinated Local Plans

Option 3 offers a different route to achieve more standardisation in regional data, by looking to encourage alignment in how and where regional data is published rather than aligning processes to gather data in the existing format. A key output of Product 5 is to demonstrate that energy networks use regional data as an important part of investment planning, that is collected on a periodic basis. As a result, Product 5 can make a recommendation that a standardised template is used as part of the Local Plan to capture the data required by energy networks. This could deliver benefit to networks that would simplify the data collection process by ensuring the publicly available data is up to date and easy to interpret.

This recommendation could be made to the National Planning Policy Framework for implementation in future Local Plans; however this could have lengthy timescales to deliver change. In the meantime, networks could work more collaboratively with regional bodies to demonstrate the benefits of a standardised template for regional data. The existing relationships between networks and the Local Area Energy Planning project is a suitable place for this discussion. This approach will reduce the risk of data inconsistencies in Local Plans when being used by networks and uses a common format for faster interrogation and implementation to existing processes

## 5 Conclusions and recommendations

### 5.1 Conclusions

The benefits of a coordinated approach to regional data gathering are twofold, an opportunity for gas and electricity networks to use the same regional data as inputs to business planning processes, also to remove duplicate requests from different networks for similar information from Local Authorities. Whilst networks support the principle of a coordinated approach and not sourcing data in parallel, it must be able to align with existing processes that networks use and have the support from all participants.

The key outputs from Product 5 are outlined below:

- A regional data scope was proposed and agreed amongst the Product team which can form a standard template which energy networks use to collect regional data from Local Authorities.
- Agreement in principle from networks that a coordinated approach could deliver benefits to regional stakeholders.
- Upon further investigation challenges were identified in the methods of data collection which need careful consideration when agreeing on a proposed methodology to collect regional data. These include agreeing on a timeline of data collection that allows both consistent regional data to be used between networks without removing the important stakeholder engagement activity.

### 5.2 Recommendations

A key recommendation that Product 5 can make is the increasing use of regional data by networks to inform strategic planning. It is recommended that Workstream 4 outlines how regional data is relied upon by energy networks and benefits could be delivered by aligning how and where regional data is published by Local Authorities.

As any changes in Local Plan templates are likely to have long delivery timescales, there is still a need to consider which of options 1 and 2 would be preferable to demonstrate a coordinated approach to gathering regional data between networks. In order to agree on a preferred mechanism further discussion is required to find a suitable approach which would suit participants. This approach is outlined in the steps for Phase 2 below:

- Examination of each option between networks and find common approach which can be progressed for 2021 data gathering. This acknowledges that networks may have existing contracts in place with service providers, therefore a 2021 approach may be a trial period to test the proposed mechanism before formal approval.
- Coordination with external stakeholders to identify if coordinated approach can also benefit other utilities (water, communications etc.) and liaise with regional bodies to determine best practice.
- Formal data exchange process drafted for agreement by network, and where applicable tendering processes started.

## 6 Next steps

A summary of the next steps is given below.

Table 6: Summary of next steps

Date	Stakeholder	Purpose
May 2020	Steering Group and Gas Futures Group	Sign-off. Undertake further phases if a Go decision is made

## 7 Appendix

### 7.1 A: Survey of network timescales for regional data delivery

The survey below was completed by the Product 5 team to outline how often they take a snapshot of regional data for use in long term planning, and when this is required to align with internal timescales.

**Table 7: Summary of indicative delivery requirements for regional data**

Network	Refresh frequency	Indicative date of delivery
WPD	Annual	May (for delivery of November DFES and associated processes)
SSEN	Annual	May-June
Northern Gas	Annual	N/A