

**The Voice of the Networks**



# **Energy Networks Association**

## **Open Networks Project**

### **Current Network Resource Data Analysis**

**WS4 P6**

**Final Report**

**May 2020**

## Document Control

### Version Control

Version	Issue Date	Author	Comments
1.1	7 <sup>th</sup> May 2020	P Halsey	Final Document (comments added from meeting)

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# 1 Background

## 1.1 Introduction

**Current Network Resource Data Analysis**; This product will consider, identify and document what data currently exists for published network resources or other resources that already exist and could be published, as well as an initial view of priority data gaps.

The output of this analysis will feed into the ENA Data Working Group that is considering more widely how network data can be sourced and presented.

## 1.2 Scope

Consider, identify and document what data currently exists for published network resources or other resources that already exist and could be published, as well as an initial view of priority data gaps.

P6 – Current Network  
Resource Data  
Analysis

Report on existing network resource data

▲ Handover to  
Data Working  
Group

Potential further work based on ENA Data Working Group  
recommendations more generally

## 1.3 How capacity data could be utilised

Future growth of a town/network and specific housing sites are normally predicated by land availability and building permissions, they are not based on if the Gas and Electricity networks have the capacity to meet the energy demand required. The connections process for gas and electric is usually the first time the site/developer will be informed if there is spare capacity available, this will enable the developments to proceed with the necessary infrastructure already in place. It can in some cases lead to the site/developer being informed that reinforcement and potential delays could occur, if capacity maps or data were available in a region to all external parties', developers could get an insight into if their site could have potential investment requirements and or delays to their site progress and would add a layer of transparency to customers and any respective investors.

## 1.4 Outcome & benefits

If electric and gas companies had capacity availability for customers, it would allow developers choice over which sites to progress with potentially, which energy source to use for their developments/homes and which ones need further engagement to understand the scale of investment and potential delay incurred if no capacity was spare.

## 1.5 Potential risk

Capacity maps could drive up land values in some areas and weaken others due to this transparency.

## 2 Data Scope

A request was sent out to all Gas and Electricity network companies to ask what data is currently available and if a consistent approach could be used.

### 2.1 General

This scope can be broken down into 3 subcomponents; electricity capacity, gas capacity and if a consistent approach could be done.

- **Current processes for electricity networks** – understood to be more developed and available
- **Current processes for gas networks** – publication of data happens on an adhoc basis and not publicly available.
- **Benefits of a consistent approach** – Could electricity and gas be cohesive and create similar maps/data?

### 2.2 Current processes for electricity networks

The area of publication of available capacity on electricity networks has been explored in previous Products in the wider Open Networks project. In particular in Workstream 2 Product 1 in 2018 (Good Practice ahead of Connection Applications) proposed the use of heat maps to demonstrate current demand and generation capacity on distribution networks. In addition, Workstream 1B Product 5 (Signposting Future Network Capacity Constraints) builds on the common understanding of forecasting scenarios produced through Product 2 to consider how distribution network capacity is evaluated and reported. As part of this all electricity networks completed a survey which summarised the processes which networks use to publish and share data about available capacity on the network, currently and in future. Due to the overlap between WS1B Product 5 and a WS4 Product 6, it was agreed between the two products to share the survey responses between products.

Information currently created by networks
<ul style="list-style-type: none"><li>• <b>Survey was issued out to ask all Electric companies what capacity is available. Responses are attached.</b></li><li>• <b>Heat maps and spare capacity is available.</b></li><li>• <b>Demonstrates electric is more progressed than gas in this space.</b></li><li>• <b>Some updates are more frequent than others, monthly, quarterly, annually.</b></li></ul>

### 2.3 Current processes for gas networks

The survey completed by electricity networks was adapted and circulated with gas network representatives of Product 6 to understand the differences between how electricity and gas networks publish current capacity information.

Information currently created by networks
<ul style="list-style-type: none"><li>• <b>Survey was issued out to ask all Gas companies what capacity is available.</b></li></ul>

- **Gas does not have capacity mapping or data available currently**
- **Connection requests or Design Studies are the first indication of spare capacity on a network for a customer/developer.**
- **Adhoc requests from local authorities get sight of general capacity in an area with a caveat that the data is out of date that day (in the gas business it's first come first serve basis when it comes to capacity and acceptance)**

## 2.4 Benefits of a consistent approach

Due to gas not having readily available capacity maps/data working on a consistent approach would be ideal and something that will be identified as a benefit to have.

It would be beneficial to be able to view this information in a place that allows customers to overlay gas and electricity capacity on top of each other, so they get a choice.

## 2.5 Summary

Electricity networks are more progressed in this area of publishing capacity availability, if gas were to create capacity maps/data and overlap these with the electric maps, it would be advantageous for customers to see all this data in one area and give them choices when it comes to what energy source would suit their development best.

### 3 Delivery challenges

Whilst networks broadly agree with the benefit of capacity maps there are potential issues which would need to be addressed to enable this to happen: -

Questions sent out to Gas companies and responses to the creation of this data: -

Do you have capacity maps or intend to have any in the future? Do you have any examples of any capacity work done to date with local authorities?

*Capacity or heat maps are very difficult to create and require continual updating/support. Our models are dynamic and change every day so basically once they are created they are out of date.*

Do your systems allow for the data to be presented in the attached survey easily? Showing there is spare capacity of X scm/h in a town.

*It is possible to give some indication if we were given specific details of potential housing developments etc. If we are provided development data we can always give some indication but it must be specified before we analyse.*

Do you foresee any issues with creating these or any other comments to feedback regarding this project?

*We have experienced significant issues with creating these maps in the past, not least ongoing problems with out of date data but they are something we are regularly asked for so we're happy to hear from other networks.*

The capacity available can be taken at any moment and without live streaming the data models, there would be a level of uncertainty around what is being shown to customers/developers (getting their hopes up with a map that says capacity available) and it's been taken the day before by a large industrial user as an example. There could be a caveat that says potential capacity is X but this doesn't mean it's available. Is that value adding?

- The electricity capacity maps are a snapshot in time so there is a risk that the information is out of date as soon as it is published.
- Gas networks could publish snapshots of capacity at the same time electric companies generate theirs, so they are in sync and would add to the consistency that this product is looking to achieve.

#### 3.1 Stakeholder engagement

Ideally it would be best to work with those sites/developers/local authorities where they have an ambition to grow their towns and release land to show what capacity is available near by (this links to Product 4 where the Keresley SUE development achieves what has been described here) working with both Cadent and WPD the site costs have come down due to a site connection point being found near by with spare capacity. (The caveat being capacity could be taken from when we told the local authority till the day they submit a connections enquiry)

## 4 Conclusions and recommendations

### 4.1 Conclusions

The benefits of capacity mapping are evident in how many people are asking for them outside of our business' the electric companies are more progressed than gas, although some gas business' have tried to create these maps before, however they have quickly found how much effort and data is required to keep them relevant.

Feedback post this report from Electric Company:- About the granularity of the capacity information we are looking to publish/coordinate. At the moment we make capacity data available per Primary substation (big town level) but that is not necessarily suitable and also would not align with gas network.

The key outputs from Product 6 are outlined below:

- Understanding what is available from each business has shown a gap between electric and gas business' when it comes to capacity availability.
- All stakeholders agree capacity mapping/data is something our customers and communities would like to have (as this way they can manage investor expectations and make choices about their sites)
- A software solution must be created to have live up to date capacity maps (due to ones being created have to be constantly updated on a daily basis to reflect the true state)

### 4.2 Recommendations & Next Steps

- To agree on whether a software solution could be created to enable capacity mapping without much resource impact.
- To agree if a consistent approach could be created when it comes to data/mapping for Gas and Electricity networks.
- Product group to spend time with DWG (Data working group) to discuss this in more detail, with the ambition to pass this to the DWG to come up with potential solutions to the above recommendations.



## 5 Next steps

A summary of the next steps is given below.

Date	Stakeholder	Purpose
May 2020	Steering Group and Gas Futures	Sign-off and work with the Data Working Group