DNO and IDNO data exchange consultation

Our plan for data sharing

Contents

1 The purpose of this document

This document intends to lay out our plans for data sharing between ourselves and Independent Network Operators (IDNOs) and explain our reasons for requesting information more frequently. As valued stakeholders, this document seeks to gather feedback from the IDNOs operating within our area on these plans.

1.1 Responding to this consultation

We welcome all feedback to our plan for data sharing with IDNOs, however, throughout this document we pose questions which we'd like to encourage IDNOs in particular to respond to. Answers to the questions can be submitted via SurveyMonkey here, please note the closing date for responses to this consultation is Friday 13th March 2020.

We want to make our plan for data sharing as easy as possible for IDNOs and would value their feedback and input so that we can work together on this. We want this exercise to be equally as beneficial to IDNOs and are keen to understand if there is anything we can do to help.

2 Introduction

In preparation for the implementation of our new Network Management System (NMS) we recently undertook a significant data cleanse exercise to validate the data and information we held and ensure that it is consistent across all our systems. The new NMS system is a vital component which will act to facilitate system operator functions as the role of the Distribution Network Operator (DNO) adapts for the future; it will allow us to implement a range of applications needed to allow our network to respond to the changing needs of our customers, whilst continuing to deliver a safe and reliable supply of electricity.

As part of the data cleanse we've contacted the IDNOs connected to our network to confirm the data we held about

their embedded networks was correct. We know first-hand that electricity distribution networks change over time, and yet the current IDNO-DNO relationship can be strained due to the competitive environment for the provision of new connections, which means that both parties are potentially blind to these changes.

As the UK transitions to a carbon neutral future, a greater importance is being put on the requirement for good quality data within the industry. We expect that, in order for the UK to meet its decarbonisation targets, changes on electricity distribution networks will increase in both quantity and regularity.
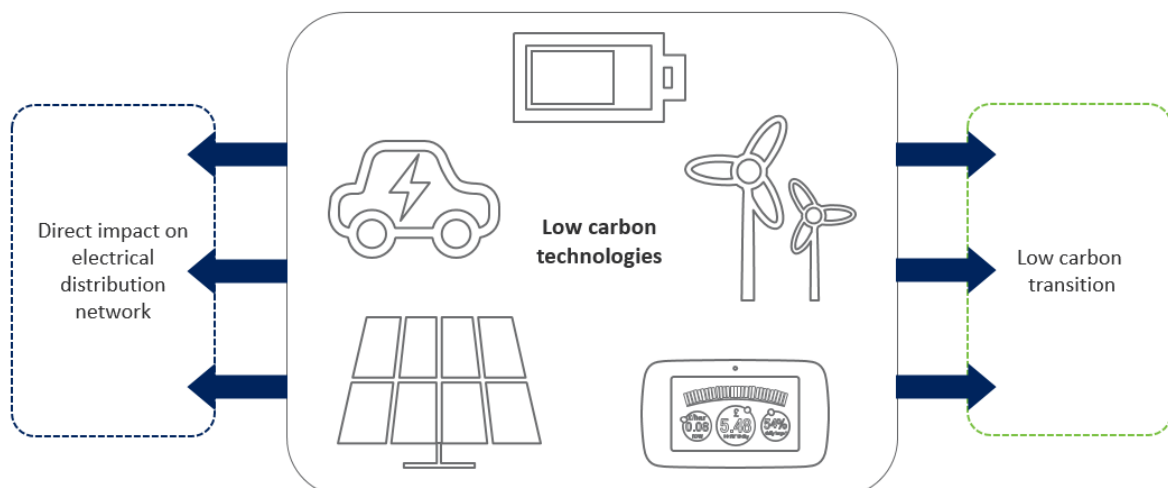
More low carbon technologies such as electric vehicles and solar panels will be connected which have the potential to significantly impact the demand and operation of distribution networks. Being blind to any of these connections, and by extension holding incomplete data, means that we are unable to take a whole system planning approach when understanding how to manage our network to deliver best value for money for our customers.

In addition, it also presents the risk that we aren't closely monitoring areas which require further scrutiny to ensure security of supply.

The energy sector in the UK is changing, and our processes must change with it. It is widely recognised within the industry that data is integral to building a smart energy system, a system capable of supporting decarbonisation objectives whilst remaining good value for money for our customers.

This is the biggest challenge the sector has faced to date, and we all need to work together to tackle it. As part of this, we want to introduce a regular data sharing exercise between ourselves and the IDNOs operating in our area.
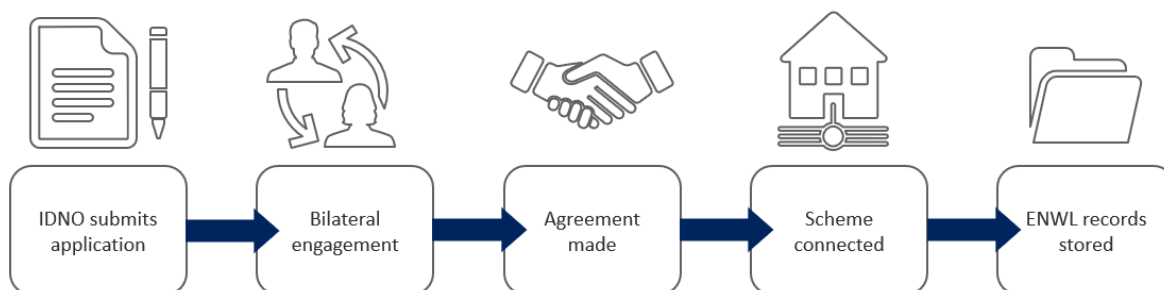
The traditional 'get connected' focussed relationship between DNOs and IDNOs must evolve if we are to continue to develop a safe, reliable and economically efficient network. Although IDNOs and DNOs are competitors, ultimately we share common interests, including the prime responsibility to maintain a reliant and efficient distribution system for all of our customers.

3   Historic engagement

Historically, the relationship between IDNOs and DNOs has been centred around connection only, with little or no ongoing engagement. Communication has mainly taken place only during the connection process where information is exchanged, and as laid drawings are provided allowing us to update our geographical records. After an embedded IDNO network has connected to our network however, we rarely exchange any updates relating either to the embedded network itself or the wider associated network. This means our geographical and contractual records only show the state of an IDNO's network at one point in time, and thus presents a risk that the data could be out of date and inaccurate. Historically this hasn't been problematic for us as a DNO, as demand profiles were, until recently, not expected to change much over the lifetime of a connection. However, the UK's transition to a carbon neutral future challenges this.

Fig 3.1 Historical engagement process

| IDNO submits application | → | Bilateral engagement | → | Agreement made | → | Scheme connected | → | ENWL records stored |

4 The need for change

4.1 The changing energy landscape

As we transition to carbon neutrality, the risk of out of date or inaccurate data regarding IDNOs' embedded networks only increases. In particular, the increased adoption of low carbon technologies poses an issue. Although we do get notified by IDNOs of some low carbon technologies connected to their networks, comparisons with external datasets suggest that we do not have a fully comprehensive view. Because of this, we are unable to understand the change in network loading associated with the adoption of these technologies, which leads to the incomplete modelling of our network and the potential for ineffective and uneconomic network reinforcement.

Not only does this mean that we are unable to take a whole system view of low carbon technologies connected to our network, but it also impacts how we run our network and ensure quality of supply for all our customers.

4.2 Maintaining a reliant network

In 2014 we completed our three-year Low Carbon Networks funded project 'Low Voltage Network Solutions'. This project confirmed that although we can safely allow micro-generation and low carbon technologies to follow the 'connect and notify' process as proposed by the Energy Networks Association's engineering policies and standards, we do need to be aware of where "clusters" form. The project proved that generally LV feeders can withstand the connection of up to 25 solar panel installations without seeing any adverse effects on the network, however once this number is exceeded voltage issues can emerge.

All distribution network operators have a responsibility to ensure the supply to the low voltage network stays within the permitted variation of +10% and -6% of 230 volts. The learning from the Low Voltage Network Solutions project led us to implement our 'connect & manage' policy, whereby we install a monitoring device on an LV feeder if it feeds a cluster of low carbon technologies. This allows us to monitor the voltage and demand on the network and intervene if necessary, ensuring quality of supply for our customers. We identify clusters through the information held in our databases, however we can only rely on the information made available to us, and the risk of incomplete or out of date information could ultimately have effect on the quality of supply given to all our customers, both customers connected to our network and an IDNO's customers connected to their embedded network.

Fig 4.2.1 Benefits of further engagement with IDNOs

Continual engagement + Data sharing → Verified records + Better informed decisions → Strong, reliable network + Value for money for customers

Question 1. Do you agree that there is an emerging need for further engagement and data sharing between IDNOs and DNOs?

5 Planning for the future

5.1 Forecasting changes

In addition to the short-term effects on our network, the information we receive from IDNOs can also influence how we plan and prepare for the future.

We have developed sophisticated ways of anticipating the range of changes likely to occur on our network in the future. The information we currently hold within our databases is used as a baseline and allows us to frame the assumptions that are used in our five distribution future electricity scenarios. These scenarios were developed as part of our NIA funded ATLAS project, and represent five different views of the future, by capturing the future uncertainties around different levels or prosperity and decarbonisation.

To produce our forecasts we consider customer numbers, demand types and generation connected to our network, and we forecast potential changes to these values up to 2050 by using our ATLAS methodologies and associated modelling assumptions. Although the forecasts do use a set of assumptions, the more detailed information we can use to create these set of assumptions, the greater the potential for accuracy. In turn, this allows us to better understand how our network is likely to be impacted on a local level, and identify where we may need to target investment to meet the challenge of the North West's transition to carbon neutrality.

Figure 5.1.1 The components of forecasting
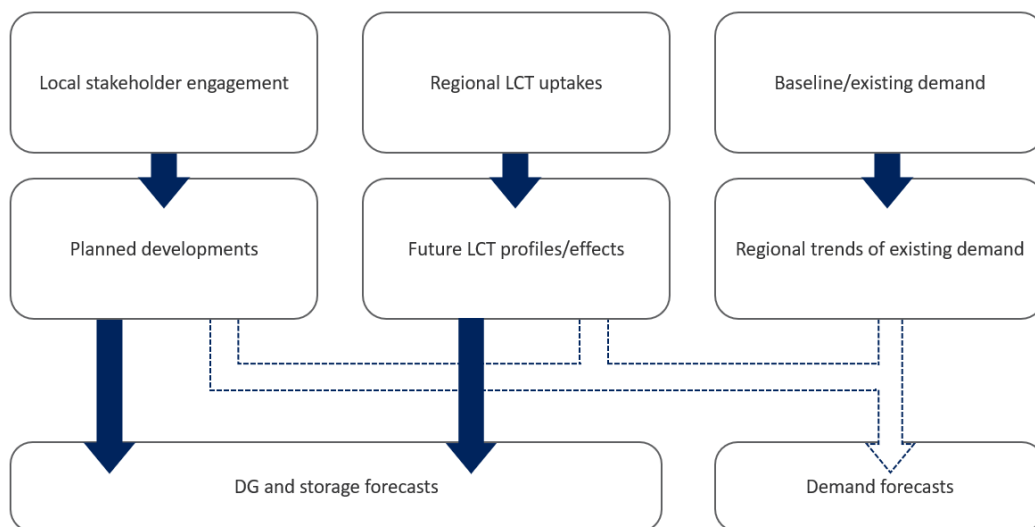
5.2 A change in culture

The challenge that this transition has presented to distribution networks has also brought with it new opportunities for customers. New revenue streams are emerging such as Flexible Services, and customers can now benefit from reduced connection costs if they are able to be more flexible with how they respond to network events. The government and our regulator Ofgem recognise that data is fundamental to help facilitate these new opportunities, as evidenced by the establishment of the 'Energy Data Task Force' in October 2018. Greater emphasis is being put on the transparency, visibility and accessibility of data to allow customers recognise possibilities and make informed decisions.

We have worked hard during this regulatory period to increase the amount of data we make available to our customers. We've introduced our Heatmap tool, which is updated on a monthly basis and provides an immediate snapshot of the available capacity on our network, to assist our customers before they make a connection application and encourage better informed business decisions.

We also now publish our Distribution Future Electricity Scenarios (DFES) report on an annual basis, which includes a detailed explanation of our demand and generation forecasts and allows our stakeholders to anticipate network needs and identify opportunities in advance. It also allows our customers and stakeholders, including IDNOs, to understand what actions are required to facilitate a carbon neutral future.

We see the introduction of both the Heatmap tool and DFES as positive steps towards an increased culture in data sharing for the UK's energy system, but we also recognise that any improvement in the accuracy of the data that feeds into these publications will improve the user experiences of our customers, IDNOs included.

5.3 Stakeholder engagement

In addition to our work surrounding data sharing, we have also been committed to building on our engagement with our stakeholders - such as local authorities - to gain additional insights into their future aspirations and understand where we may need to strategically invest in our network due to an anticipated increase in developments. We've already begun to include information we receive from local authorities within our demand forecasts to help further inform our investment making decisions.

By understanding their policies and, for example, how they plan on encouraging the adoption of electric vehicles alongside knowing their targets for providing dwellings and development land, we can join the dots and better anticipate where the demand on our network is set to increase.

We'd now like to extend that engagement to the IDNOs connected to our network, with the notion that informing us of their plans for the future could be just as beneficial to them

> **Question 2.** Have you used any of the new datasets and tools we've introduced? Have you found them useful?
>
> **Question 3.** Is there any other data you think we could provide which would be useful to yourselves?

6 Proposed data exchange

6.1 Verifying existing information

The information we have requested from IDNOs as part of our data cleanse exercise relates to the current embedded network connections, the table represented in Figure 6.1.1 on the following page was sent via email to the relevant IDNO containing the information we currently hold within our systems for them to validate. Going forward, we'd like to ask IDNOs to validate the data represented in Figure 6.1.1 periodically. Our initial thoughts are to seek verification twice a year, in December and June in line with our internal forecasting and review processes.

Figure 6.1.1 Data to validate

Site Name	Site Address	Site post code	Existing connection agreement number	Maximum Import Capacity	Maximum Export Capacity	Number of customers connected	Number of customers with solar panels	Number of customers with electric vehicles	Number of customers with heat pumps

6.2 Accounting for future growth

Our original intention within this data exchange exercise was to also request information surrounding future growth aspirations from IDNOs. It's important for us as a DNO to have a robust understanding of any future plans which could likely impact our network, so that we can verify our forecasting methodology, ensure our network is capable to provide the capacity for the future and also identify opportunities for our customers such as Flexible Services.

However, wider discussions within the industry are currently covering what information IDNOs make publicly available. Ofgem recently published their 'Key enablers for DSO programme of work and the Long Term Development Statement' consultation; part of the consultation examines the viability of IDNOs producing and publishing a Long Term Development Statement (LTDS), which they currently are not obligated to do. Depending on the result of this consultation we may be able to obtain the data we require from the published Long Term Development Statements, and therefore at present we do not think it sensible to request this information at the risk of conflicting with any wider initiatives concerning data sharing.

Question 4. Does the format in which we have and are planning to request this information work for you? If not, is there an alternative that would work better?

Question 5. We'd like to ask IDNOs to validate the data represented in Figure 6.1.1 twice a year. Do you think it is necessary to provide data validation twice yearly, or do you believe once a year would be sufficient?

Question 6. Is the proposed schedule of these information requests convenient in relation to your internal processes? Would there be another time of year which may be more beneficial and provide a more up to date view of your network?

Question 7. Is there anything we can do to assist in you providing us with the information we've requested?

Thank you for taking the time to read our DNO and IDNO data exchange consultation. If you would like to provide any feedback separate to the questions asked within this document please email flexible.contracts@enwl.co.uk.

7 Glossary

Abbreviation	Definition
DFES	Distribution Future Electricity Scenarios
DNO	Distribution Network Operator
DSO	Distribution System Operator
IDNO	Independent Distribution Network Operator
LTDS	Long Term Development Statement
LV	Low Voltage
NMS	Network Management System
Ofgem	Office for Gas and Electricity Markets
UK	United Kingdom