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ElectraLink's response to the ENA Open Networks Project Consultation on Phase 2 Work Programme.



ElectraLink

Q1:

Which specific areas of 2018 work or “Products” are most important to you and why?

As a central body in the energy market, ElectraLink are interested in the products that deliver the transition from trial to BAU delivery and develop small-scale DNO-specific products into system-wide products. ElectraLink believe that visibility for planning and operations is the most important enabler for transitioning the DSO trials into BAU operations on a system-wide level. The DNO is used to planning 20-30 years ahead and dealing with large scale, somewhat predictable generation plants, but that is no longer the case. The rise of intermittent, nuanced generation sources increases the need for more short-term planning (based on weather forecasts, for example) and creates a risk to grid/networks as visibility of these generation types is not always readily available, when combined these issues erode the opportunity for operators to plan.

As it stands, network operator planning is getting outpaced by technology, operating model and consumer changes, because operators do not know what they have available to use, where or what it can do and, in some instances, what they need. We believe the products that increase visibility of consumer changes (e.g. PV and EV uptake), load changes (e.g. the growth in embedded generation) and new business models (e.g. aggregators) should bridge the gap between industry change and network requirements to enable network operators to understand what products are available to them, allowing them to plan daily operations and understand whether there is the potential to use Non-Wire Alternatives (NWAs) to avoid network reinforcement in the face of growing constraints.

The need for information is ever increasing and we believe the products that makes the DER visible and accessible to planners and actors in the market will help smooth this transition and below is the list of the products that are most important to this part of the transition.

TABLE KEY

Workstream
Product

Phase 2 product description

ElectraLink's view of the importance of the product

WS1:2

DER Service Procurement

Developing a structure to store and communicate contract information, schedule/dispatch services and provide pre/post-event details will ensure that there is the correct revenue allocation and, provided that this is provided on a system level, this should facilitate reduce conflicts between DNOs or the SO.

WS1:8

System Wide Resource Register

To understand network needs requires an understanding of the energy mix and visibility of all resources in a network. We believe this can be facilitated by a Resource Register. A resource register would address the lack of visibility and aid business planning and investment decisions, simply by making the resources in the system visible. Being able to accurately plan DER resources will fundamentally shift the DSOs ability to plan their networks.

To make this practicable, at a minimum, ElectraLink believe the Resource Register must track the key information required to understand the impact on these

resources. An example of the key data requirements includes: The location (down to meter point); generation type; and maximum load of the resource. Consideration should also be given as to whether this register should include EV resources and other domestic resources that can be used to control load – we believe that any increase in visibility will ultimately improve the DSO transition and, therefore, we would recommend the introduction of tracking EV resources at the very least. This data could be used by operators to identify 'hot spots', where there could be a need for reinforcement and, therefore, present opportunities for different retail or flexibility models to resolve DSO issues.



Fig 1: Data from the DTN on embedded generation

Making this information visible to the DSO and the market would allow for market actors to understand the DSO requirements and look for investment opportunities. ElectraLink have developed an example of a hot spot graph (see Fig 1), using the embedded generation from HH export meters:

WS1:12

TSO/DSO and DER Data requirements

As we discussed, visibility and information are key enablers to the DSO transition. Understanding what is available, where and what has happened (post-event) are essential to the operations of the market.

Market actors that are central to the DNO model (suppliers, SOs and generators) have many data transfer obligations, underpinned by code or license requirements, to support the functioning of the market. To respond to the movement away from the DNO model and the increasing role of decentralised/non-supplier actors in the market, the industry will require clear and structured data transfer to underpin and govern the new processes and actors in the energy market, ensuring all actors have the same obligations to support the continued operation of the market. This will include an understanding of new ways the DER services can operate in the market (the art of the possible) to understand what new data requirements might be desirable to look into new operating models. actors in the market will help smooth this transition and below is the list of the products that are most important to this part of the transition.

WS1:13

Operational Data and Control Architectures

At a minimum, there needs to be a mechanism for the DSO and its customers to understand what is available (whether that is a domestic consumer's DSR or a generators capabilities), the producers to understand what is required (for DSO operations) and then all actors to understand what happened (post-event analysis). The establishment of clear, structured data exchanges for all business actors is essential to facilitate the success of the DSO transition.

A data lake that stores and makes visible key industry processes and data to any participant in the market will enable market actors to make better informed decisions (using historical data or modelling) and ensure that planning and operations is based on evidence-base decision making. ElectraLink is currently re-procuring the DTS to create the UK Energy Datahub (see Case Study 1 in Appendix A), which can support this role in the energy market.

WS2:6

Key enablers for the DSO

The identified requirements listed will all enable the DSO transition. Without the contractual, regulatory and funding requirements defined, it is difficult for new actors to navigate the market and understand their position. Simplicity and visibility of these requirements will be a fundamental enabler of change, as it will ensure that the key requirements are understood.

As we have explained above, we agree that the establishment of communication infrastructure between the DSO and their market participants (new and old) is essential to facilitate the DSO transition and the operational interactions between the market actors.

WS2:7

Further trials to address gaps in DSO functionality

ElectraLink would welcome the opportunity to support DSO trials. Definition of these data and communication requirements will be a priority requirement for the next five years and, therefore, we believe trials on different operational and commercial models should include data sharing as a key component. ElectraLink would be keen to participate in such trials and facilitate the use of the existing, low cost Data Transfer Service as a 'no regret' option for transferring data between trial participants. Moreover, as central provider for the DNOs, ElectraLink can ensure that there is consistency across different DSO areas, even if service providers' interaction between DSOs differ, and ElectraLink can ensure there is standardisation between market participants in data transfer technology and data transfer format.

WS2:8

Preferred DSO models and proposed implementation plan

We believe an understanding of the proposed implementation plan will give market participants the visibility of the transition that they need to enable them to look at the key enablers in WS2:6 to prepare for the transition.

Q2:

Are there any other areas of work or “Products” you would like to see included in the Open Networks Phase 2 workplan and if yes, why and how should they be prioritised compared with other work?

The Open Networks Phase 2 workplan does not include any tracking on the uptake of Electric Vehicles. Charging one EV uses the same amount of energy as a “typical home uses in three days”, which for a DNO could “damage networks without costly reinforcements”¹. The problem with EV is that there is no log or tracker for DNOs to know when an EV is connected to their network; therefore, ElectraLink would suggest a product to introduce an EV registration service that tracks and records the uptake of EV, or the inclusion of EV in the Resource Register is required to understand the future and existing demand on the networks. Once the DSO has a better understanding of the demand on their network, they can begin to enact projects to minimise the impact of EV on the grid.

These types of records, when coupled with the Resource Register, should then be used to develop modelling to understand consumer uptake (as has been performed in the US) to support further network planning and enable more advance system modelling².

¹ <https://www.theguardian.com/business/2017/apr/20/uk-unprepared-for-surge-in-electric-car-use-thinktank-warns>

² <https://www.utilitydive.com/news/how-leading-utilities-are-planning-for-distributed-energy-resources/516260/>

Q3:

Should any areas of work or “Products” be removed or deferred and if yes, why?

Due to the importance of the DSO transition to developing a cost-effective network and, as network planning is being outpaced by technology change, we do not believe any products should be deferred or removed. We believe that the enablers of the DSO transition into BAU should be prioritised to ensure that there is a framework for DNOs to deal with the existing challenges of the growth of DER.

We would recommend that the decisions made in the ENA Open Networks Project are finalised before the market decides the plans for market-wide half-hourly settlement (HHS) to ensure that this programme drives the decision-making on HHS, as smart technologies and HHS are key enablers to the DSO transition.

Due to the importance and scale of the project, we believe that the ENA should engage with a wide stakeholder group to ensure that all the products can be effectively resourced with subject matter experts or potentially new market actors. We would support the inclusion of existing service providers, such as ElectraLink, to help inform discussions around areas of their expertise (data transfer, data analytics and code governance).

Q4:

Q4: Do you agree with the proposed “Products” for wider consultation and what other work should be consulted on and why?

We agree with the products for consultation. We would like to see a consultation on the Data landscape and data requirements for the DSO transition as it is tantamount that the market understands the data requirements and constraints of the transitioning DSO landscape.

This consultation should outline the DSO data requirements for operational and planning purposes and detail the level of granularity and frequency of data requirements. This consultation would then enable the actors in the DSO model (including service providers) to establish how this could be done, if at all, and any constraints these requirements could place on the development of new business models.

Q5:

Have you any feedback on the proposed timescales for delivery and consultation through Phase 2?

With the volume of work, the timeframes are aggressive; therefore, we believe that the ENA needs to accept help and feedback from a wide set of stakeholders as possible. This programme also dovetails into other programmes, so we believe that the ENA Open Networks Project must engage with the timelines of key industry programmes, such as HHS and CFF projects, to ensure that the DSO requirements are met before the details of these transitions are finalised.

Understanding the data and data transfer requirements of the DSO transition is key to ElectraLink and a core part of the development of the Energy Market Datahub (EMDH - more details in Appendix A), where we are evolving the DTN into a datahub that’s support the future market, in particular the DNO to DSO transition. ElectraLink expects the data transfer requirements in the UK retail electricity market to change with the DNO to DSO transition and we would like to support the DNOs with this change with the development of the EMDH. We are developing the initial requirements for the EMDH in 2018; therefore, the Phase 2 timelines and products are in line with the procurement timelines and requirements for the development of the DTS into the UK EMDH.

Q6:

How would you like to provide input to the Open Networks Project and be kept informed of developments?

ElectraLink have been disappointed that we have been unable to access ENA meetings so far, despite multiple requests. As a central body managing the data transfer requirements for the DNOs, we believe that ElectraLink's access to meetings and input into processes is required to ensure that we can provide the continued support of DNO data requirements and use our expertise to provide the level of input that is required to successfully transition to the DSO.

APPENDIX A

: The UK Energy Market Data Hub

Case Study 1: The UK Energy Market Data Hub

In response to the requirements of a fast evolving energy market ElectraLink is procuring a replacement for the Data Transfer Service (DTS) called the UK Energy Market Data Hub (EMDH). The EMDH will build on the solid foundation of the DTS, which currently transfers all electricity settlements, supplier hub, gas retail and renewable generation flows, to add new services to improve market data transparency.

ElectraLink will continue to provide cost-effective data transfer, with improved interface capabilities, reporting, storage and more flexible ways of interacting with the service. In addition, ElectraLink will provide new central services to cost-effectively support suppliers, network operators, metering operators and emerging parties with access to market processes and data.

The EMDH is a natural evolution of the DTS, opening up transparency of industry data and processes to inform business process improvement for new and legacy market participants.

ElectraLink will be conducting a number of Proof Of Concepts (POCs) in Q1 2018 to demonstrate how some of the industry's pain points can be addressed through providing access industry data and processes in more efficient and transparent ways. These POCs will inform a set of requirements which will feed into the procurement of the EMDH.

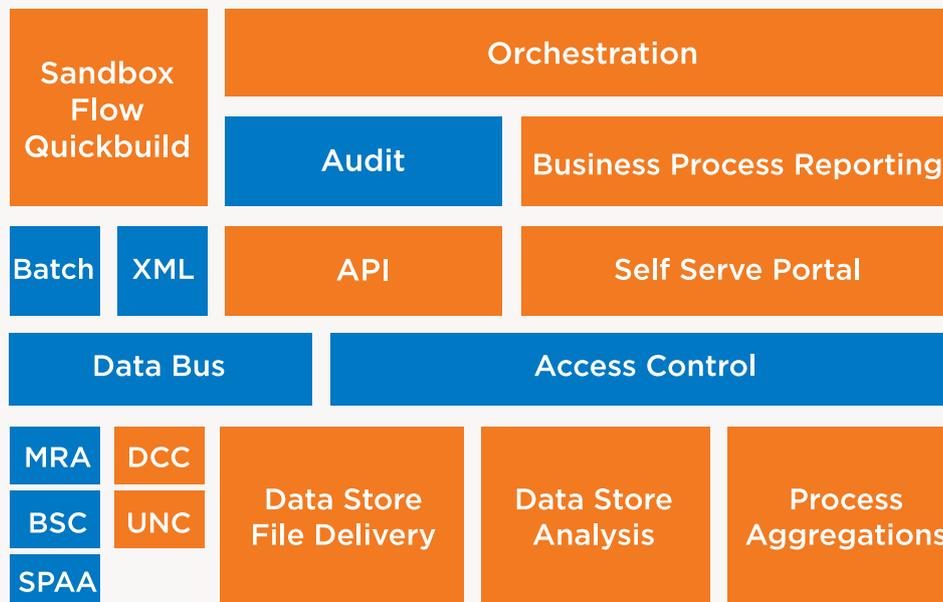


Fig 1: A high level view of the EMDH. Innovations (in orange) include a sandbox environment to quickly build and test new data flows using a GUI design engine, and APIs to transfer data and access market information via a self-service, secure hub, facilitating business process visibility and industry process benchmarking.