Kelvatek – response to Ofgem consultation ' Key enablers for DSO programme of work and the Long Term Development Statement'

Question 1) We consider that improvement is required in the visibility of DG and LCTs connected to the distribution network. It addition to DG and LCT connections, can you identify areas for improvement in the current data that is shared in the LTDS?

It is not easy to relate the data to geographical locations; easy geographical context is essential to these data sets and is currently lacking. The accessibility of the data in general is not easy, and very much reserved for specialists . If markets are to be enabled in the future then they need to be facilitated by easily accessible, context rich data.

Question 2) Can you identify areas for improvement in the presentation of network information in the current FoS?

Considering the projected impact of LCT technology, such as EV's, Electrification of heat on the low voltage network we think it is a necessity that the FoS put any information that could lead to more visibility and ability to forward plan within the scope of the LTDS. 11 kV data and below will be essential to enable new markets and facilitate the transition to net zero

Question 3) The EDTF and others have identified the need to collate and share 11kV and lower voltage network data. Is there value in creating a sharing mechanism for 11kV and LV network data ahead of the expected roll out of network monitoring and telemetry in RIIO-ED2 and the limited data availability in RIIO-ED1?

The standardisation, collation and sharing of 11kV and lower data, the creation of a mechanism to facilitate this, and easy presentation and access to this data should be embarked upon as soon as possible. It is important to highlight that this should be a collective effort by the DNO's and other industry bodies that are associated to them. The EDTF report is unequivocal in its recommendations for an open, standardised, and fair data sharing framework to enable competitive markets, a recommendation we fully support.

It is also important to consider the ability to use the data and it's quality as a comparator to further inform network monitoring solutions, the level and resolution of monitoring and telemetry needed and it's potential use and value in the ED2 period.

Question 4) Given the complexity of future distribution networks, static data alone may not satisfy user needs. Should the FoS be enhanced to mandate the development of a common network model to allow power system simulation, that each licensee must make available for exchange to users and interested parties? If so, what do you consider to be an appropriate standard?

- Yes
- Exposed connectivity for LV 11kv and below, as impact of future growth scenarios are significant at this level The development of a common network model would be challenging but valuable. Requirements for such a model would need to be tightly controlled across license areas to ensure that consumers are assured of receiving an equivalent service. It may be that a modelling tool could form the basis for a number of future power system scenarios and could be iteratively developed to add further useful functionality.

Exposed connectivity and the ability to create power system simulation at the 11kV and below are particularly important given the challenges that electrification of heat and transport may pose in next funding period and beyond.

Question 5) From a review of industry publications we consider that interoperable standards will underpin future DSO activities. Should the FoS mandate the adoption of a IEC 61970 CIM and IEC 61968 CIM for Distribution Management, such that data is collated and constructed in a manner similar to WPDs CIM innovation project model? Are these standards mature and what are the likely benefits and costs?

Interoperable standards are essential in any market. The ensure that multiple solutions can co-exist within the same market and stop the rise of potentially expensive and more importantly proprietary interfaces and business rules that govern them. We are relaxed about the particular adoption of any particular standard, although we do note that IEC61968 is still under development at this time. It is difficult to perform a meaningful cost benefit analysis but it is generally accepted that when referencing other sectors of the energy system and other industries that the benefits of interoperable standards are as follows.

- Improved data quality;
- Improved data sharing
- Reduced software adoption costs
- Improved reporting
- Supporting a fair and competitive market

Question 6) Should the FoS also be retained in its current Excel form? Is there value in this format?

The benefit of the current format is that it resides in a format that almost everyone understands and has access to. However, there are severe limitations

- Understanding of the data
- Presentation
- Security
- Context & interactions with other software solutions

Question 7) Ensuring network information remains accessible is a priority. At present there is no formal requirement for the production of heatmaps. In order to ensure future customer can access the required data should the scope of the LTDS and FoS be extended to mandate the production of heatmaps?

LV heatmaps should be a requirement for every license area, it is technically possible to achieve and help inform the decisions of industry participants, consumers and DNO's

Question 8) Would there be benefit to adopting common guidance or formats on information presentation within heatmaps, including the presentation of technical information and cost information? What are the barriers to its adoption?

Yes, standardisation of formatting would aid interoperability meaning that products and services would be more easily developed and supported. Local authority segmentation as well as electrical connectivity should also be considered. The barriers to adoption would be around accessibility,

security around certain portions of the network and promoting the existence of such tools to the consumer.

Question 9) The core focus of the LTDS is to assist users to enter into arrangements with the licensee and evaluate the opportunities for doing so. Should the scope of the heatmaps include other network needs, such as flexibility requirements? What is the best mechanism to notify network users of opportunities to enter arrangements with the licensees?

Yes, the data platform should be common, and feed other specific platforms that address each use case. An example would be a common data platform feeding flexibility markets. This would ensure a level playing field in terms of market competition and prevent platforms with better access to information or proprietary information from gaining an advantage.

The LTDS seems to heavily focused on those wishing to connect and not those who wish to provide flexibility, local services, those that are not deeply familiar with the workings of the electricity distribution network. If the recommendations of the EDTF are to be embraced this emphasis must change.

Question 10) On what frequency should these maps be updated? Should they be updated as there are changes to the underlying data or periodically?

Both approaches have positives and negatives, periodic updates would work if the space between periods was sufficiently short. The advantage with a periodic update mechanism is that it would be undoubtedly cheaper, and simpler to design in terms of interface as well as allowing an offline validation mechanism to take place to ensure the integrity and quality of the data. A live approach would offer the maximum data resolution in terms of changes occurring at the network level, which would allow faster on demand access to the data. In order to ensure data integrity and quality a live validation mechanism would need to be introduced with a feedback mechanism to the sender in order to correct structural or contextual issues with the data. A periodic approach would be cheaper, easier to maintain and may provide the level of service required, a live approach would require a much greater investment and probably involve data interaction systems and middleware that are present in the energy supply side of the business. This kind of investment may not provide a value for money return for consumers.

Question 11) Is there a need for a common methodology or principles for estimating load growth? What potential role could the D-FES play in informing the load growth forecasts on the LTDS?

Yes, there should be a common methodology established, the mechanisms that drive load growth are common across the LV network. Electrification of heat, electrification of transport and aging LV assets are common problems across all GB distribution areas. It therefore follows that a common methodology should be established to ensure alignment, and avoid duplication of cost. The D-FES reports for each distributor should be normalised and fed into establishing a centralised methodology to provide load growth forecast for the LTDS.

Question 12) Are there any lessons that can be learned from other industry documents such as the ETYS and the NG FES?

The ETYS could help inform load growth patterns although with the rapid adoption and emergence of new technology, with the subsequent impact on policy, such a long-term view may only be useful

in broad strokes to inform long term investment decisions on infrastructure. Addressing the NG FES, lessons can also be learned from the way the data is presented and summarised along with the presentation of the spatial modelling tool used to formulate many of the regional predictions. Importantly there is no registration required to gain access to these documents while some DNO's encrypt the data and only allow access after a request email.

Question 13) Do you agree that the LTDS should be enhanced to present the key assumptions for network requirements forecasting and the uptake in LCTs or is this a role better served by the D-FES or other documents?

The LTDS should be enhanced to include this analysis. Key assumptions for network requirements and forecasting are especially important In the context of the LTDS which is supposed to inform third party decisions and investments on the distribution network

Question 14) Forecasting tools have been a focus of a number of innovation projects. Are there any mature tools or techniques that could be adopted to enhance the transparency or robustness of the load growth forecasts?

There are a multitude of forecasting solutions available on the market but it is essential to understand the role of data maturity. When viewed in this context the forecasting solutions can only provide answers in terms of the accuracy, resolution and quality of the data that they are provided with. The tools that are utilised in forecasting are far less important than the data used to feed them.

Question 15) Do you agree that IDNOs should be issued with a direction to produce a LTDS?

Above a certain size and for all residential networks so that consumers are offered a fair service.

Question 16) What summary information should IDNOs publish? This is currently found in section one of the LTDS FoS, such as information relating to the design and operation of all voltage levels of the distribution network. Please explain your reasoning.

We believe that some of the generic (e.g. design and operation) information should be in a separate guide document so that it is easier to access pertinent information on each individual organisation.

Question 17) What information on network data should IDNOs publish? This is currently found in section two of the LTDS FoS. Please explain your reasoning.

They should be aligned to the DNO's as much as is practically possible in order to provide a fair service to consumers.

Question 18) Do you agree with our proposal on how the LTDS delivery body should be convened and governed?

Yes.

Question 19) Would you like to nominate an individual to take part in the LTDS working group? Please set out reasons for their inclusion and any qualifying experience the nominated person has to function as a strong contributor to the group.

Samir Alilat has worked in the data interaction and innovation space for many years. His current role sees him promoting data solutions to the energy industry to meet the challenges of net zero. He has worked on several working groups already including the Midata working group facilitated by BEIS. He also has experience of working on major transformation projects and data interoperability including the NEXUS project.

Question 20) What network monitoring parameters would you like to have access to? At what frequency?

We already have access to a lot of LV data types, the frequency is of course determined by the use case, this helps define the trigger for collecting the necessary information. In general terms we would like to have access to, where relevant

- current
- voltage
- location
- date of installation
- asset identifier
- asset type
- harmonics
- ratings
- fault level
- phase information
- feeder data

this is just a flavour there are many, many more data types that are available. The key question is the data availability, accessibility and the maturity of the regulation and communication mechanism that surround this data, as well as other meta data associated to each of the data types.

Question 21) What would enhanced 33kV network monitoring enable that cannot be undertaken today?

No response

Question 22) What would enhanced 11kV network monitoring enable that cannot be undertaken today?

No response

Question 23) What would enhanced LV network monitoring enable that cannot be undertaken today?

Connectivity maps, phase mapping, phase imbalance identification, accurate load growth modelling, predictive fault identification, asset health monitoring to inform investment decisions

Question 24) What constraints in data systems architecture do you perceive are limiting network monitoring and visibility?

A common interface standard should be adopted as well as industry standard rules around data exchange and validation. This would ensure that all data analysis solutions could exploit data being collected by the DNO's and design products and services to provide proprietary information and monitoring solutions to the DNO's and other industry participants.

Question 25) What operational data is most important to prioritise opening up first and why?

Connectivity and heatmaps, these would form the foundation of any products and services that could be offered to DNO's

Question 26) How does a lack of access to this data impact the delivery of flexibility to the system?

If flexibility providers lack the understanding of the system, they by definition cannot understand the value of their offering.

Question 27) Are there any real or perceived conflicts of interest with DNOs owning and operating ANM platforms at scale? What additional protections could be required for ANM customers?

ANM could potentially reduce the need for flexibility markets and depress the price of flexibility services. However one of the DNO's primary duties is to provide value for money, if ANM is the cheapest solution to solving a powerflow issue or constraint then it should be utilised.

Question 28) In order to preserve optionality over ANM scheme operations, what technical and commercial protections, such as technical ring-fencing, may be are required?

No response

Question 29) Please provide real world examples where lacking timely access to usable network data, or regulatory barriers, have limited your ability to provide a DSO function or support service. Please submit any relevant evidence and documentation of any examples cited.

No response

Question 30) Are there any other issues related to enabling DSO that have not been considered that you think are important? Please provide details of your considerations.

No response