

Governance related to last resort arrangements for Distributors to manage specific consumer connected devices

Criteria for use

The Smart Metering last resort solution will be only deployed in the event of emergency scenarios consisting of

- a) Failure of market-led solutions
- b) where the speed of LCT uptake has been considerably greater than anticipated

The emergency scenario is defined by the above criteria resulting in an outage on the electrical network.

Scenario a) Failure of market-led solutions

In this case, using the ENA's definition of market/service failure which is where either the market isn't mature enough to deliver what is needed, or where the incumbent provider fails to deliver when contracted to do so.

DNOs shall signal to the market (i.e. via flexibility platform such as PicloFlex) that a LV flexibility solution is required to manage a constraint on a network and following this competitive tender award a contract to a flexibility provider to provide the demand reduction services required to ensure network demand is kept within asset ratings.

Should an outage occur on a network where flexibility is being provided, the DNO will investigate the cause. This may be due to the failure of the flexibility provider to provide the contracted demand reduction, or an alternative cause such as machinery striking a network asset. Following an investigation to determine the cause, and if it is not found to be a one-off blip (as an example, it will actually depend upon the SLA in the contract) then the last resort solution utilising the smart metering network will be initiated.

Once the last resort solution is implemented, the DNO will either review its arrangements with the incumbent service provider to seek an increase in the level of flexibility being provided, or signal to the market once again that a replacement flexibility contract is required and seek another service provider.

Scenario b) Uptake of LCT demand has been significantly quicker than anticipated

The DNO will have by means of data provided via LV monitoring equipment and/or analytic projections recognised there is an increasing uptake of LCT's in particular networks.

However, there may be areas where uptake is faster or greater than anticipated and as DNO's are notified in arrears of equipment being connected are unable to signal to the market in time to prevent an outage occurring.

Should this situation arise the DNO will deploy the last resort solution utilising the smart metering network.

Deployment

Deployment of the last resort solution for either Scenario will require:

- engaging all customers connected to affected asset to ensure the DNO can interact with relevant LCTs on the affected network;
- Informing customer of situation, and the risk presented to security of supply as a result of LCT demand, and steps we would like to take with their consent to prevent it happening again;
- Gaining consent and contact details, providing an information pack with key details such as who and how to contact in event of any issues or queries;
- Notifying suppliers and Ofgem of the customers who have consented;
- Implementing the solution.

Determining who to constrain

Key elements of the solution:

- It will constrain customers whose LCT demand is operational when the asset they are connected to has reached the pre-determined threshold capacity, unless they have chosen to opt out for that particular period;
- Whilst the ability for customers to opt-out will be a part of the solution, we are not specifying how the ability to opt-out should be provided – it could be via an app or web portal for example – but we require it to offer customers the ability to opt out or disable LCT operation temporarily for the next 2 hours;
- It is anticipated in the short term EV charging will be the primary LCT impacting on LV network demand consequently the solution will principally target customers with dedicated EV charge points, however we are seeking its ability to also target those using 3 pin plug chargers (Mode 2 chargers).;
- The method of EV charge control shall be to vary the rate of charging. This is preferable to disconnecting the supply to the EVSE.
- It is essential that managing LCT demand has minimal impact on the customer experience and is applied in a non-discriminatory way. It is therefore important that any limitation on demand is shared equitably and transparently among participating customers, and it is expected that customers will be able to opt out. The algorithm of the chosen system will fairly spread load between the LCT's that are in use (we are not specifying the algorithm as several algorithms have been proven to be successful in UK trials, such as My Electric Avenue and Electric Nation, and others have been proven elsewhere in the world, but we will ensure its ability to share

charge fairly amongst connected LCT's. The sharing methodology will be explained to customers at the point of gaining consent.

- In order to ensure smart meter based LCT control can alleviate the risk of an outage and share demand fairly we will:
 - use network analysis to calculate the capacity that is available/likely to be remaining for the at-risk asset, and the number of LCT devices connected to it;
 - use a rules-based system which will calculate the minimum number of LCT's that would need to be managed to avoid an outage and how long they would likely need to be managed for;
 - use this to establish a critical mass of participation, i.e. the number of customers who could opt out before the system would delay the load demand of participating customers to an unacceptable amount (>2 hours per evening);
 - then attempt to sign up enough customers to meet this critical mass figure;
 - make the decision, if unable to sign up sufficient customers, that alternative traditional solutions should be deployed to maintain security of supply.

Data protection

DNOs will only utilise the solution with customer consent; any consent given i.e. by physical or digital signature would be stored in accordance with data protection laws under General Data Protection Regulation.

Consumer protections and governance

We believe the governance arrangements for the solution's use should be covered not through industry codes which run the risk of drastically slowing down any potential deployments, but instead through transparent and publicly reported parameters and KPIs, with a further review once the solution has actually been deployed.

The interim solution will have the following 'activity' parameters of use:

- **Maximum amount of demand management within 24 hours:** the system would not be used to limit demand for more than the equivalent of each LCT device being managed for two hours on any given day for any individual connected customer in a zone. Where the solution exceeds this limit, we will expediate an asset-based solution while utilising mobile generation or energy storage to maintain supply;
- **Maximum amount of demand management within a 30-day period:** the system would not be used to modulate demand for more than the equivalent of each LCT device being switched off for eight hours within a 30-day period. Where the solution exceeds this limit, we will expediate an asset-based solution while utilising mobile generation or energy storage to maintain supply;
- **Review stages:** The DNOs will be required to assess implementations of the solution every 30 days to review frequency and duration of instances of overload protection and use this to inform the seeking of flexibility services from the market;
- **Maximum period of operation:** once the solution is managing LCT on a local network, the DNO would have a maximum of 12 months from its first use to either source a suitable solution from the market or reinforce. This ensures the flexibility market and customers can have confidence DNOs will seek longer-term solutions.
- **Thresholds:** The overload protection solution will only activate when an asset has reached its capacity, within the limits of granularity of control.

- **Reporting:** DNOs will publicly report on the use of the solution every 6 months, as well as providing customers who consent to its use with updates every month providing detail of how often and long the system has been used on their network and how it has impacted them. We also seek to allow customers to access relevant information regarding the operation of the system via a convenient means such as a web portal.

Customer support and complaints

Customers will be provided with key information at the point of consenting.

We will provide customers with update communications every 3 months providing detail of how often and long the system has been used on their network and how it has impacted them. We also seek to allow customers to access relevant information regarding the operation of the system via a convenient means such as a web portal. Data to be reported to customers will include (but not limited to):

- Total managed duration (within week, within day)
- Number of operations (within week, within day)
- Current status (to include: if unit has power; if there is an error / operating normally; if demand management is operational)
- Current opt-in/opt-out status
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We will carry out a satisfaction survey every 3 months to assess any impact to customers, and determine if any changes are needed from a customer experience perspective (not just from an engineering perspective),

DNOs shall follow their existing complaints process and timescales, and where escalations are required, Ofgem shall be the route for customers to proceed with.

Compensation

It is our intention that the last resort demand turn down is to be a non-compensated event. We feel that we would increase competition amongst flexibility providers and provide better outcomes for customers by tendering for flexibility providers to provide a contracted service to the DNO. By pursuing a voluntary agreement with customers, we would only reduce LCT demand to those properties that agreed to the proposal. Furthermore, we feel that by offering compensation for last resort disconnection, as well as potentially limiting the development of flexibility markets, we would be undermining the 'neutral market facilitator' intention of the DSO model. However, we note that in Grid Code Modification GC0147 - Last resort disconnection of Embedded Generation – enduring solution, the ESO will consider compensation arrangements for last resort disconnection and we intend to review our position following the conclusion of this Code Mod.

Reporting requirements

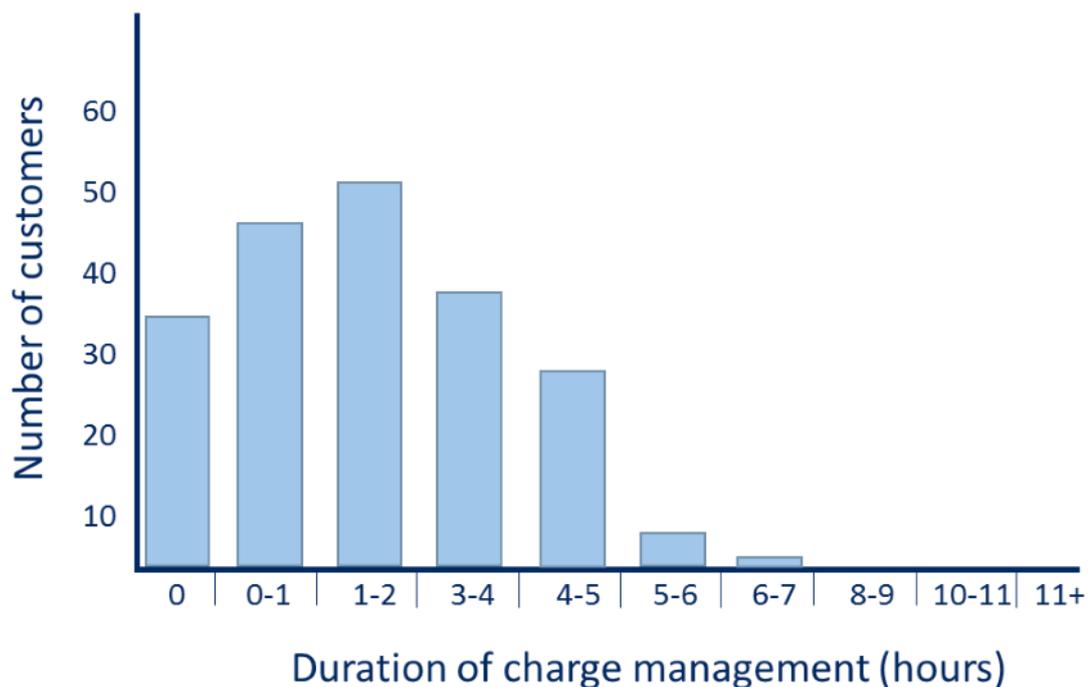
Every 6 months we will produce a publicly available report on the use of the system – with reporting on KPIs at a customer, feeder and licence area level.

- **KPIs**

The following KPIs will be used, reported both per month and cumulative/to date:

- Total number of deployments of overload protection equipment;
- Number of pre-fault deployments, number of post-fault deployments;
- Number of customers on affected networks;
- Number of customers signed up and with interim solution in place;
- Total number of requests for/incidents of overload protection;
- Number of opt-outs;
- Distribution of duration of overload protection; *see mock up below*

Monthly impact distribution chart – May 2020



- Length of time deployments have been in place since the first overload protection incident.