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Service Request Forecasting

Problem statement – version 0.1

About this document

This document provides a summary of this Draft Proposal, including the issue or problem identified, the impacts this is having, and the context of this issue within the Smart Energy Code (SEC).

Proposer

This Draft Proposal has been raised by Graeme Liggett from DCC.

What is the issue or problem identified?

Service Request Forecasting

Background

SEC section H3.21 requires that Users by the 15th Working Day of the months of January, April, July and October, each User provide the DCC with a forecast of the number of Service Requests that the User will send in each of the 8 months following the end of the month in which such forecast is provided. This forecast was intended to assist in managing demand for DCC User Interface Services.

As service usage scales, insight from actual Service User behaviour is a richer indicator of future usage than aggregate monthly customer forecasts. Recognising this, the DCC is proposing to submit a modification leading to the removal of the current obligation on Service Users to provide quarterly SRV forecasts. The refinement stage of the Modification will be informed by a trial of the new process.

The proposed approach was supported by the Operations Group on Tuesday 7th January. As the trial involves no changes to the SEC, it is presented to the Panel for Information.

Detail

The increasing breadth and depth of high frequency data captured today by the Smart Metering Programme, can be leveraged to provide both short-term load forecasts (STLF) and long-term load forecasts (LTLF) for load and system performance prediction. These modelled predictions carry the promise of allowing better control and balance of capacity, through continuous visibility into detailed service usage and consumption patterns, compared to Service User service request forecasts. This in turn enables better designs and triggers of demand response actions and provides input to the planning for growth and changes. Service Users should also gain better awareness of their own consumption patterns.

In this context, short-term load forecasting (STLF) handles prediction horizons of 24 hours (next-day predictions) to 168 hours (next-week predictions) and typically relies on time series analysis and modelling. These methods consider variables such as the date (e.g., day of week and minute of the day), weather events and most importantly, historical load. Medium-term load forecasting (MTLF), handling horizons of one week up to one year, and long-term load forecasting (LTLF), with predictions at horizons of multiple years are typically produced by the regression on input variables, which in addition to historic load, typically incorporate installation and commission projections and industry events (e.g. the energy price cap).

Proposal

Preparation of the Mod is already underway. The trial will start February 2020. Whilst it is recognised that there is some risk that nugatory work will have been carried out should the Mod not be approved; this risk is assessed as low as User support is strong. Until the Mod is approved, Users will continue to submit SR Forecasts and the SR Variance reports will be produced.

The Mod Proposal will be raised to remove the obligation on Service Users submitting quarterly service request forecasts, the DCC reporting on their variance to actual usage and replacing these with a series of User profiles (UP) that represent patterns of Service User behaviour that are persistent and correlated with actual service usage. This ensures a systematic approach to understanding and managing demand from Service Users and provides Service Providers with the information necessary to optimise designs to suit demand patterns.

The current Service Metric Threshold of 10% will be reviewed as part of the proposal.

DCC will share these User Profiles (UP) with Service Users for review and guidance, which will help Service Users better understand their own activities and impact on the service. Regular reviews with Service Users will highlight any expected deviations from their historic behaviour. The DCC can then better validate and plan for changes to the service.

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What is the impact this is having?

What are the impacts of doing nothing?

The production of service request forecasts is reported by Service Users to be a considerable overhead. Despite this investment in resource, these forecasts continue to over represent the aggregate volume of requests sent by a factor of 3 to 1.

In addition to this level of accuracy, the provision of aggregate monthly service request forecasts does little to support capacity planning, which requires an understanding of per second traffic volumes.

What are the views of the industry?

Views of the DCC

The views of the DCC will be gathered during the Development Stage.

Views of SEC Parties

The views of Parties will be gathered during the Development Stage.

Views of Panel Sub-Committees

The views of Panel Sub-Committees will be gathered during the Development Stage.

Views of the Change Sub-Committee

The views of the Change Sub-Committee will be gathered during the Development Stage.