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MP160

‘Certificate Signing Request forecasting’

Modification Report

Version 0.5

9 May 2022



About this document

This document is a draft Modification Report. It currently sets out the background, issue, and progression timetable for this modification, along with any relevant discussions, views and conclusions. This document will be updated as this modification progresses.

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This document also has two annexes:

- **Annex A** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.
- **Annex B** contains the Data Communications Company (DCC) User Guidance document that accompanies the proposed legal text changes.

Contact

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1. Summary

This proposal has been raised by Graeme Liggett from the DCC.

SEC Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure' currently sets out the obligation whereby each Party which is an Authorised Subscriber shall provide the DCC each quarter with a forecast of the number of Certificate Signing Requests (CSRs) it expects to send in the following eight months. The forecasts contain a breakdown of the total number of CSRs for Device Certificates, including the issue of a single Device Certificate and ones that are batched together.

The DCC believes that the obligation on Users to provide these forecasts should be removed. There is sufficient capacity within the Smart Metering Key Infrastructure (SMKI) services to no longer require the CSR forecasting process except in the case when exceptional volumes of CSRs are to be sent in a given period by a SEC party.

The Proposed Solution is to amend SEC Section L to remove the requirement on Users to provide CSR forecasts except where exceptional volumes are expected. The new process is set out in a DCC Guidance Document. This modification will impact DCC Users and the DCC. There are no DCC costs to implement this modification. Implementation is targeted for the November 2022 SEC Release. This is a Self-Governance Modification.

2. Issue

What are the current arrangements?

SEC Parties utilise the SMKI and DCC Key Infrastructure (DCCKI) services described in SEC Section L in order to manage Organisational, Device and Infrastructure Key Infrastructure (IKI) Certificates. The SMKI service provides Certificates used for the means of establishing trusted and secured communications between Parties and smart metering Devices across the DCC network. The DCCKI service provides SEC Parties and Registration Data Providers with Certificates used to authenticate and secure access to DCC interfaces such as the DCC Gateway Connection, Self-Service Interface (SSI), the Registration Data Interface and the DCC User Interface.

SEC Parties that have completed the relevant SMKI and Repository Entry Process Tests and have access to the SMKI services are known as 'Authorised Subscribers'. SEC Sections L8.7-L8.12 currently set out the obligations for each Authorised Subscriber to the SMKI Services to provide the DCC with quarterly forecasts of the number of CSRs it expects to send in the following eight months.

The DCC provide a report to the SEC Panel setting out the aggregate number of CSRs by all Authorised Subscribers collectively during the month. This is also be compared with forecasted numbers.

What is the issue?

CSR forecasting is DCC User resource-intensive despite its low value to the DCC. This means that despite the effort each User puts in to complete each forecast, the benefit and value of the process is nugatory.

The DCC believes that the obligation on Users to provide these forecasts should be removed, as actual CSR requests are relatively stable and are restricted by the volume of assets a Party can install. The DCC carries enough data for this to be largely predictable. The DCC has also stated that there is significant headroom within the SMKI services to facilitate increases in CSRs being sent.

What is the impact this is having?

If nothing is changed, Service Users will continue to expend resources to submit CSR forecasts despite the value of the forecasts being minimal. The SMKI services carry significant headroom, measured in many months of CSRs, and are replenished every few weeks. Furthermore, there is no cost incurred in maintaining the current levels of additional headroom.

The time and effort taken to complete a CSR forecast by an Authorised Subscriber consumes DCC User resource. By removing the obligation to submit CSR forecasts, the Service User will be able to reallocate resources accordingly.

Impact on consumers

The issue has no impact on Consumers.

3. Solution

Proposed Solution

The Proposed Solution will remove the obligation for Authorised Subscribers to have to provide quarterly eight-month CSR forecasts to the DCC. The DCC has advised there is sufficient capacity within the SMKI services and there is no requirement for the quarterly CSR forecasting process. Instead, the DCC will produce its own forecasts internally. The DCC however, do require DCC Users to notify it where the User expects exceptional demand. 'Exceptional demand' is considered when an Authorised Subscriber is aware future requests will be over 150% (50% above) of their average CSRs sent each month. In these instances, the DCC request information be sent in the relevant month by an Authorised Subscriber.

Producing forecasts and reporting

The DCC will produce a single CSR forecast (covering the following six months) and a single variance report each quarter (covering the previous three months) that will be issued to the SEC Panel or a delegated Sub-Committee for review and comment. This single CSR forecast will account for CSRs to be sent in the following six months by both Parties and Service Providers. Historically, these separate Party and Service Provider forecasts were produced independently and then aggregated, but for efficiency a single forecast will be produced.

These reports will include:

1. A six-month forecast of the number of CSRs that Parties and Service Providers will (collectively) send in each of the six months following the end of the month in which such forecast is provided. This forecast will also report on the number of available CSRs

through the forecast period. This forecast report will set out and comment on expected future CSR volumes and will be published on SharePoint as a Portable Document Format (PDF) document.

2. A CSR forecast accuracy report that sets out the number of CSRs that Parties and Service Providers (collectively) sent during each of the previous three months. This will evidence the accuracy of previous forecasts and identify steps to improve future forecast accuracy. This variance report will review and comment on the variance between actual and forecast CSR volumes and will be published on SharePoint as a PDF document.

User input

SEC Parties are asked to notify the DCC Service Desk where the number of Certificate Signing Requests sent in a month is expected to increase by 150% or more (50% above) compared to the average number of Certificate Signing Requests sent in each of the previous three months. Full details are set out in the DCC User Guidance document (Annex B).

4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

SEC Parties

SEC Party Categories impacted			
✓	Large Suppliers	✓	Small Suppliers
✓	Electricity Network Operators	✓	Gas Network Operators
✓	Other SEC Parties	✓	DCC

All DCC Users will be impacted as they will no longer have to provide quarterly eight-month CSR forecasts. This will result in resource requirements being reduced. SEC Parties will however have the option to provide input into the DCC forecasts in cases of exceptional demand.

DCC System

This modification has no impact on the DCC System.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure'

The changes to the SEC required to deliver the Proposed Solution can be found in Annex A.

Consumers

This modification will have no impact on Consumers.

Other industry Codes

This modification will have no impact on other industry Codes.

Greenhouse gas emissions

This modification will have no impact on greenhouse gas emissions.

5. Costs

DCC costs

There are no DCC System costs to implement this modification. Any costs associated with DCC providing resource will be accounted for through the DCC's price control.

SECAS costs

The estimated Smart Energy Code Administrator and Secretariat (SECAS) implementation costs to implement this modification is one day of effort, amounting to approximately £600. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the new version to the industry.

SEC Party costs

Details regarding SEC Party costs will be gathered during the Refinement Consultation.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **3 November 2022** (November 2022 SEC Release) if a decision to approve is received on or before 20 October 2022; or
- **23 February 2023** (February 2023 SEC Release) if a decision to approve is received after 20 October 2023 but on or before 9 February 2023.

The earliest Release this modification could be implemented in is the November 2022 SEC Release. This modification does not have any DCC System impacts so if a decision is received after the cut-off date, it could be implemented in the February 2023 SEC Release.

7. Assessment of the proposal

Observations on the issue

During the Development Stage, this proposal was presented to the Panel Sub-Committees. Each Sub-Committee agreed that the issue is clearly defined and were happy for the proposal to proceed to the Refinement Process. The Operations Group (OPSG) and the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) raised no initial concerns with the Proposed Solution.

Views of the Change Sub-Committee

SECAS presented the Proposal to the Change Sub-Committee (CSC) for initial comment in April 2021. CSC members commented that each quarterly forecast takes between 30 minutes to an hour to complete. It felt that there may be an issue regarding providing Users the desired level of accuracy as customers can now change Supplier easier and faster than before, and the volumes of customers changing Supplier could be difficult to forecast. This will be exacerbated when the Faster Switching Programme¹ goes live in 2022 which actively encourages customers to change Supplier.

A CSC member advised that, like [MP116 'Service Request Forecasting'](#), this modification will need to be supported by a DCC guidance document that sets out what is expected of Authorised Subscribers once the obligation to provide the forecasts has been removed. The member advised that this would need to be provided in advance of the modification proceeding to vote. This has been provided by the DCC and reviewed by the SEC Working Group.

The proposal was taken to the CSC in May 2021 for final comments and recommendation. The CSC reiterated that the DCC guidance document must be reviewed by the Working Group and on this basis, was happy for the proposal to proceed to the Refinement Process.

Legal Text

The proposed changes to the SEC can be found in Annex A.

Solution Development

Working Group

The modification was discussed by the Working Group. The legal text, DCC guidance document and the proposed solution were presented and the Working Group were asked if there was any feedback or additions which should be included.

¹ <https://www.ofgem.gov.uk/electricity/retail-market/market-review-and-reform/smarter-markets-programme/switching-programme>

The Working Group members wanted further clarification in the drafted legal text to state 150% of exceeding the CSRs for past 3 months instead of 50%, which was agreed and has been included in the Refinement Consultation. It was also queried if this would affect Anomaly Detection Thresholds (ADTs) to which the Proposer confirmed that this proposal is related to CSRs and not to do with ADTs, which was covered in a separate modification ([MP116 'Service Request Forecasting'](#)). The Working Group acknowledged and noted this.

The Working Group members noted that this was to remove the obligation to forecast CSRs, which does not necessarily mean less work for Authorised Subscribers, but as it removes an obligation, they were agreeable to it.

The Working Group requested clarification to ensure the DCC will perform all the forecasting reporting and the subscriber only needs to provide notification of exceptional usage. The Proposer confirmed that this was correct.

Views against the General SEC Objectives

Proposer's views

The Proposer believes that MP160 better facilitates SEC Objectives (a)² and (b)³. This is due to the efficiencies the removal of the forecasting CSR process will deliver with only exceptional demand CSR volumes needing flagging to the DCC. This aids the efficient provision, installation, operation, and interoperability of smart metering systems at energy consumers' premises and allows the DCC to comply with the objectives of the DCC licence while optimising DCC System capacity.

Industry views

Industry views will be gathered during the Refinement Consultation.

Views against the consumer areas

Improved safety and reliability

This modification will have a neutral impact on safety and reliability of the smart metering systems.

Lower bills than would otherwise be the case

This modification will have a neutral impact on the cost of energy bills.

Reduced environmental damage

This modification will have a neutral impact on environmental damage.

² Facilitate the efficient provision, installation, operation and interoperability of smart metering systems at energy consumers' premises within Great Britain.

³ Enable the DCC to comply at all times with the objectives of the DCC licence and to discharge the other obligations imposed upon it by the DCC licence.

Improved quality of service

This modification will free up time for the Authorised Subscribers, as the DCC has enough head room to handle the current load of CSRs, and only in exceptional demand periods will there be a need to report their quantity of CSRs to the DCC.

Benefits for society as a whole

This modification will have a neutral impact on society.

Appendix 1: Progression timetable

SECAS has worked with the SEC Lawyer and the Proposer to draft the legal text and the DCC has produced a User Guidance Document. This was presented to the Working Group on the 4 May 2022 before going into Refinement Consultation. This proposal will then be presented to the CSC to progress to Report Phase.

Timetable	
Event/Action	Date
Draft Proposal raised	19 Apr 2021
Presented to CSC for initial comment	27 Apr 2021
Presented to SEC Sub-Committees for initial comment	25 May 2021
Presented to CSC for final comment and recommendations	25 May 2021
Panel converts Draft Proposal to Modification Proposal	18 Jun 2021
Legal text developed with the Proposer	Feb – Apr 2022
Guidance document produced by the DCC	Feb – Apr 2022
Proposed Solution developed with the Proposer	Feb – Apr 2022
Modification discussed with Working Group	4 May 2022
Refinement Consultation	11 May – 1 Jun 2022
Modification discussed with SMKI PMA	11 May 2022
Modification Report presented to CSC	21 Jun 2022
Modification Report Consultation	27 Jun – 15 Jul 2022
Change Board Vote	27 Jul 2022

Appendix 2: Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	Full term
ADT	Anomaly Detection Threshold
CSC	Change Sub-Committee
CSR	Certificate Signing Request
DCC	Data Communications Company
DCCKI	DCC Key Infrastructure
IKI	Infrastructure Key Infrastructure
OPSG	Operational Sub Group
PDF	Portable Document Format
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMKI	Smart Metering Key Infrastructure
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SSI	Self-Service Interface

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MP160 ‘Certificate Signing Request forecasting’

Annex A

Legal text – version 0.4

About this document

This document contains the redlined changes to the SEC that would be required to deliver this Modification Proposal.

Section L ‘Smart Metering Key Infrastructure and DCC Key Infrastructure’

These changes have been redlined against Section L version 14.0.

Amend Sections L8.7, L8.8, L8.9, L8.10, L8.11 and L8.12 as follows:

L8. SMKI PERFORMANCE STANDARDS AND DEMAND MANAGEMENT

SMKI Services: Managing Exceptional Demand

~~L8.7 An Authorised Subscriber will be considered to have exceptional demand if it is aware that the number of Certificate Signing Requests which it will send in a month will increase by 150% or more (50% above) compared to the average number of Certificate Signing Requests sent in each of the previous [3] months.~~

~~L8.8 Each Party which is an Authorised Subscriber in accordance with the Device Certificate Policy shall, if it becomes aware of exceptional demand, provide the DCC with a forecast of the number of Certificate Signing Requests which it will send in the relevant month.~~

~~L8.7 Each Party which is an Authorised Subscriber in accordance with the Device Certificate Policy shall:~~

~~(a)—as soon as reasonably practicable after becoming an Authorised Subscriber; and~~

~~(b)—subsequently by the 15th Working Day of the months of March, June, September and December in each year;~~

~~provide the DCC with a forecast of the number of Certificate Signing Requests that the Authorised Subscriber will send in each of the 8 months following the end of the month in which such forecast is provided. Such forecast shall contain a breakdown of the total number of Certificate Signing Requests in respect of Device Certificates between those which request the Issue of a single Device Certificate and those which are Batched Certificate Signing Requests.~~

~~L8.8 The DCC shall monitor and record the aggregate number of Certificate Signing Requests sent by each Authorised Subscriber in total.~~

~~L8.9 By no later than the 10th Working Day following the end of each month, the DCC shall provide:~~

~~(a)—each Authorised Subscriber with a report that sets out the number of Certificate Signing Requests sent by that Authorised Subscriber in respect of Device Certificates during that month (in total and broken down between those which request the Issue of a single Device Certificate and those which are Batched Certificate Signing Requests), and comparing the actual numbers sent against the numbers most recently forecast for the applicable month; and~~

~~(b)—(in so far as there were one or more Parties or RDPs which were Authorised Subscribers during the applicable month) a report to the Panel that sets out:~~

- (i) — the aggregate number of Certificate Signing Requests in respect of Device Certificates sent by all Authorised Subscribers collectively during that month (in total and broken down between those which request the Issue of a single Device Certificate and those which are Batched Certificate Signing Requests), and comparing the actual numbers for that month sent against the numbers most recently forecast for the applicable month; and
- (ii) — where the number of Certificate Signing Requests in respect of Device Certificates sent by any Authorised Subscriber during that month is greater than or equal to 110% of the Authorised Subscriber's most recent monthly forecast for the applicable month, the identity of each such Authorised Subscriber and the number of Certificate Signing Requests in respect of Device Certificates sent by each such Authorised Subscriber (in total and broken down between those which request the Issue of a single Device Certificate and those which are Batched Certificate Signing Requests)

- L8.10 — The Panel shall publish each report provided to it pursuant to Section L8.9(b) on the Website, save that the Panel may decide not to publish one or more parts of a report concerning under-forecasting as referred to in Section L8.9(b)(ii) where the Panel considers that the under-forecasting was reasonable in the circumstances (including where it arose as a result of matters beyond the Authorised Subscriber's reasonable control).
- L8.11 — The DCC shall, as soon as is reasonably practicable, submit a Draft Proposal containing rules that it considers appropriate to enable the prioritisation by the DCC of Certificate Signing Requests in respect of Device Certificates sent over the SMKI Service Interface in circumstances in which the aggregate demand for the Issue of Device Certificates cannot be satisfied within the applicable Target Response Times.
- L8.12 — The DCC shall not be considered to be in breach of this Code with regard to the obligation to achieve the Target Response Times set out at Section L8.1 if, during the month in question, the aggregate Certificate Signing Requests in respect of Device Certificates sent by all Authorised Subscribers exceeds 110% of the aggregate demand most recently forecast for that month by all Authorised Subscribers pursuant to Section L8.7 (provided that the DCC shall nevertheless in such circumstances take reasonable steps to achieve the Target Response Times).



User Guidance

Certificate Signing Request forecasting

Version: 1.1
Date: 05.05.22
Author: Graeme Liggett
Classification: DCC Public

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1. Background

1.1. Summary

Smart Energy Code (SEC) Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure' currently sets out the obligation whereby each Party which is an Authorised Subscriber shall provide the DCC each quarter with a forecast of the number of Certificate Signing Requests (CSRs) it expects to send in the following eight months. The forecasts contain a breakdown of the total number of CSRs for Device Certificates, including the issue of a single Device Certificate and ones that are batched together.

The value of these CSR forecasts to the DCC are offset by the;

- logistical constraints on the number of devices that Parties can physically install
- limited variation in the number of CSRs Parties send each month and;
- the pool of available CSR's are capable of being replenished within a matter of days.

Recognising the considerable resource that Parties dedicate to producing these CSR forecasts and the ability of the DCC to produce a single aggregate CSR forecast of comparable accuracy, the obligation on Parties to provide a CSR forecast should be removed.

This CSR forecast supports the TSP in their drive to meet the required service levels and enables them to match the number of available CSRs to the number of CSRs to be sent in the following months.

1.2. Introduction

This CSR Forecast guidance document makes provision for such matters as are described in Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure' of the Code, and provides further processes and detail required to facilitate those matters.

The DCC will produce a single CSR forecast (covering the following 6 months) and a single variance report each quarter (covering the previous three months) for Panel. This single CSR forecast will account for CSRs to be sent in the following six months by both Parties and Service Providers. Historically, these separate Party and Service Provider forecasts were produced independently and then aggregated, but for efficiency a single forecast will be produced.

In summary these publications will include

1. A six-month forecast of the number of CSRs that Parties and Service Providers will (collectively) send in each of the six months following the end of the month in which such forecast is provided. This forecast will also report on the number of available CSRs through the forecast period. This forecast report will set out and comment on expected future CSR volumes and will be published on SharePoint as a PDF document.
2. A CSR forecast accuracy report that sets out the number of CSRs that Parties and Service Providers (collectively) sent during each of the previous three months. This will evidence the accuracy of previous forecasts and identify steps to improve future forecast accuracy. This variance report will review and comment on the variance between actual and forecast CSR volumes and will be published on SharePoint as a PDF document.

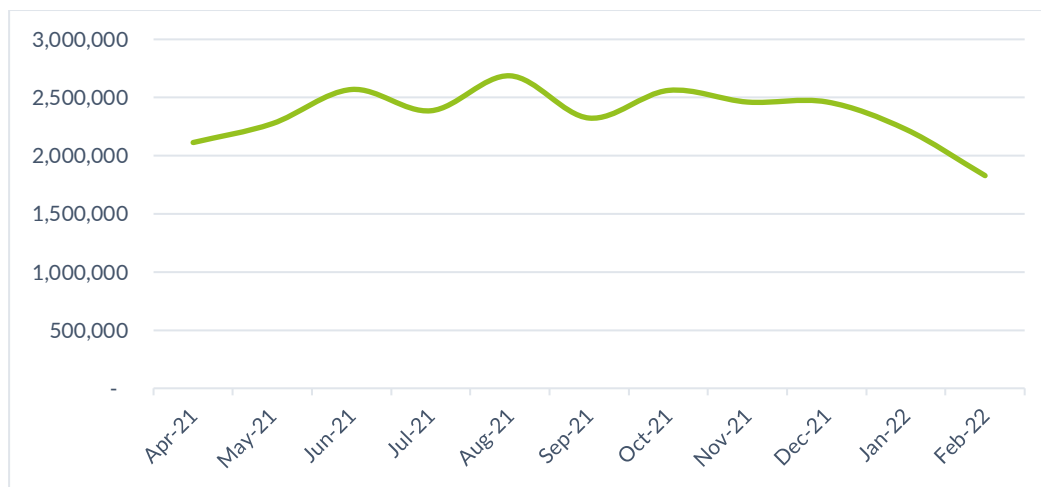
The DCC target monthly forecast accuracy is +/-20%, which compares to Party historic monthly forecast accuracy between +/- 20% to +/- 40%. Unlike other Service Providers, the TSP contract carries no obligated target forecast accuracy.

This document, which will be published on SharePoint, is intended to provide Users with guidance in meeting the mandatory requirements of the SEC. Please note that the DCC has supplied this guidance based on their knowledge at the time of writing. DCC would welcome ongoing feedback on how the contents can be improved.

1.3. Data Summary

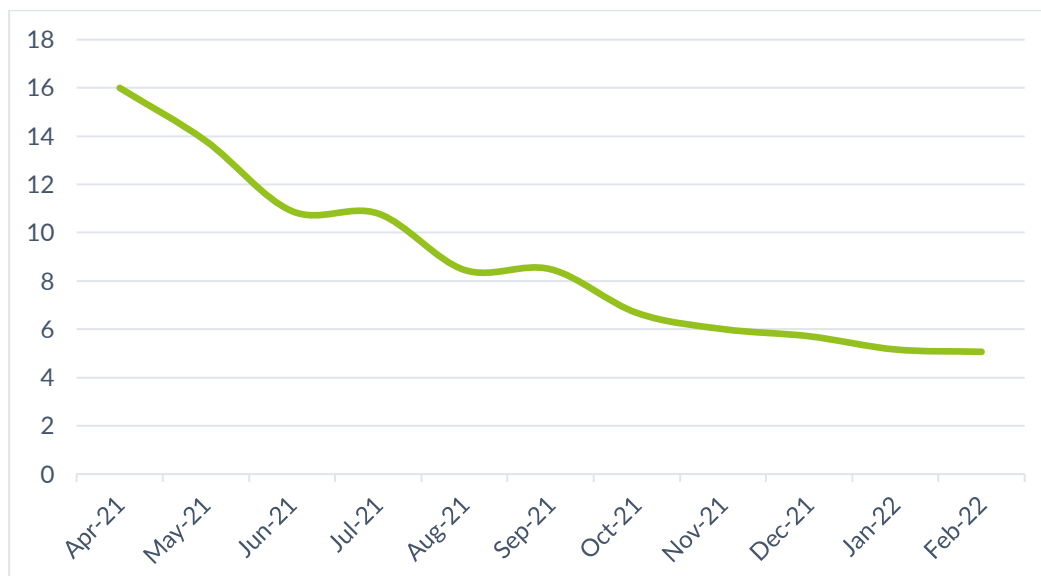
The volume of CSRs sent by Parties is relatively stable, varying between 2 million and 3 million each month. The exception to this is February, due to it being a shorter month.

Figure 1: Monthly CSR Volumes



This stability in monthly consumption of CSRs allows the TSP to manage its pool of available CSR's. As shown in Figure 2, available CSRs measured in months of consumption has fallen from 18 months in April 21 to 5 months in February 22. In March, the TSP replenished its pool of available CSRs, in April 2022, the equivalent of 21 months of consumption of CSR are now available.

Figure 2: Available CSRs (Measured in Number of Months of Consumption)



2. Document Control

2.1. Revision History

Revision Number	Revision Date	Summary of Changes	Name
1.0	08/04/2022	Version used as baseline for User Guidance document	Graeme Liggett
1.1	05/04/2022	Refined text	Elizabeth Woods

2.2. Related Documents

Document	Version	Author	Date
Smart Energy Code (SEC)	59	SECAS	24th March 2022

3. CSR Forecast User Guidance

3.1. Overview

The DCC will produce a single CSR forecast (covering the following 6 months) and a single variance report each quarter (covering the previous three months) for Panel. This single CSR forecast will account for CSRs to be sent in the following six months by both Parties and Service Providers.

The DCC shall:

- a) by the 15th working day of January, April, July and October publish a CSR Forecast, covering the six months following the month of publication
- b) by the 10th working day of February, May, August, November publish a report on the accuracy of the six-month CSR Forecast covering the previous three months, before the month of publication

Each of these documents will be published on SharePoint and available to the Panel and all Users; [CSR Variance - All Documents \(sharepoint.com\)](#)

3.2. User and DCC Responsibilities

The input Parties may provide into the process is documented in Section L 8 - SMKI Services: Managing Exceptional Demand, this input will help the DCC in reducing uncertainties in future demand and improve forecast accuracy. Forecast accuracy is dependent on an understanding of Parties expectations and changes in behaviour.

Section L 8 - SMKI Services: Managing Exceptional Demand

- L8.7 An Authorised Subscriber will be considered to have exceptional demand if it is aware that the number of Certificate Signing Requests which it will send in a month will increase by 150% or more (50% above) compared to the average number of Certificate Signing Requests sent in each of the previous [3] months.
- L8.8 Each Party which is an Authorised Subscriber in accordance with the Device Certificate Policy shall, if it becomes aware of exceptional demand, provide the DCC with a forecast of the number of Certificate Signing Requests which it will send in the relevant month.

The DCC will monitor CSR volumes for indicators of changing behaviours. Clarification through Party or Service Provider reviews or directly through Service Management contacts may be sought where the number of Certificate Signing Requests sent in a month increases by 150% or more (50% above) compared to the average number of Certificate Signing Requests sent in each of the previous 3 months.

Parties are asked to notify the DCC Service Desk where the number of Certificate Signing Requests sent in a month is expected to increase by 150% or more (50% above) compared to the average number of Certificate Signing Requests sent in each of the previous 3 months.

4. Guidance Governance

Any proposed changes to this CSR Forecast Guidance document must first adhere to the following governance requirements prior to publishing.

Where Panel, its delegated authority or a SEC Party ask for an amendment to the Guidance document, that change should be workshopped at SEC Panel or its delegated authority.

- DCC are responsible for drafting changes to the CSR Forecast Guidance document
- The drafted changes should be presented to the SEC Panel or its delegated authority for review and approval. At the guidance of the Panel these changes can be shared with all Users for consultation
- DCC are responsible for publishing the updated CSR Forecast guidance to SharePoint and removing superseded versions
- DCC will act as an intermediary to resolve any issues.