SEC
Smart Energy Code

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MP248

‘Requirements for DCC Gateway Connection’

Modification Report

Version 1.0

17 July 2024

Corporate member of Plain English Campaign
Committed to clearer communication
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About this document

This document is a Modification Report. It sets out the background, issue, solution, impacts, costs, implementation approach and progression timetable for this modification, along with any relevant discussions, views and conclusions.

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This document also has three annexes:

- **Annex A** contains the business requirements for the solution.
- **Annex B** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.
- **Annex C** contains the full responses received to the Refinement Consultation

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1. Summary

This proposal has been raised by Rahul Mudliar from EP Tech Solutions.

The Smart Energy Code (SEC) requires a physical Data Communications Company (DCC) Gateway Connection at the SEC Parties' premises to allow secure data transfer with the DCC. This is the case for all Registration Data Providers (RDPs) as well as all DCC Users. This may not be feasible for emerging market participants who operate on virtual cloud-based infrastructure. This is also preventing established RDPs from transitioning to operate on a cloud-based infrastructure, that would not require physical premises.

The scope of the modification is limited to RDPs due to the increased complexity to deliver a solution for DCC Users. Cloud-based connections for all DCC Users will be explored by the DCC under a separate piece of work. The Proposed Solution updates the definition of a DCC Gateway Connection, as well as other amendments and additions to sections and appendices of the SEC for alignment. This will allow the DCC to share the data flows without the need for a physical connection.

This modification impacts RDPs and the DCC. Costs are limited to Smart Energy Code Administrator and Secretariat (SECAS) implementation costs. This is a Self-Governance Modification, and if approved, will be implemented in the November 2024 release.

2. Issue

What are the current arrangements?

What is a DCC Gateway Connection?

SEC Section H 'DCC Services' covers the requirements for both RDPs, and DCC Users on how to interact with the DCC.

It currently states that this requires a DCC Gateway Connection, which by definition, is placed within the organisation's premises. This will require a site visit, equipment costs and can take approximately four months or greater to set up. This is to enable data being sent from the DCC to RDP to be transferred securely.

What is an RDP?

Originally, Gas and Electricity Network Parties were responsible for transferring registration data on their respective networks to the DCC. They had the option to fulfil this requirement themselves or delegate it to another entity to act as the RDP on their behalf. The DCC is also required to provide Smart Metering data to the RDP, for the relevant premises on their respective networks.

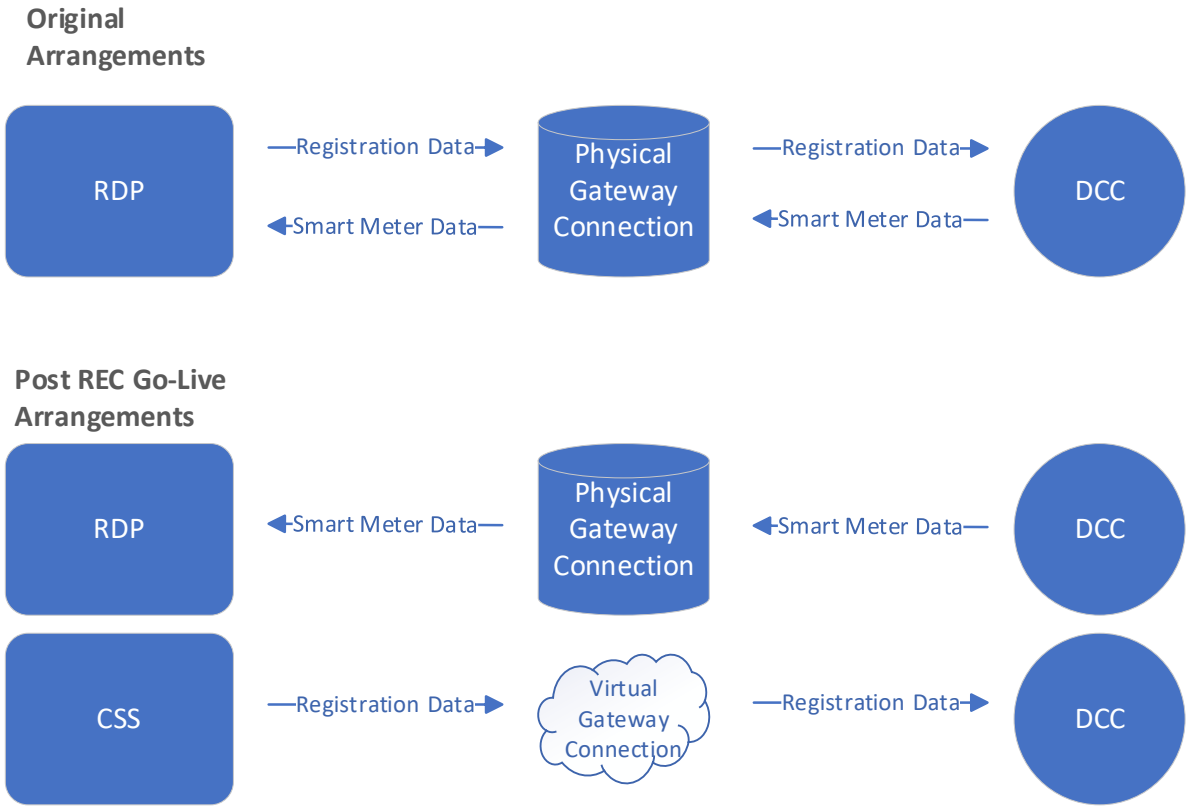
However, as part of the Switching Programme, the Central Switching Service (CSS) Provider has taken over the responsibility of providing registration data to the DCC. Thus, other than a RDP sending a acknowledgement of receipt, data now only flows from the DCC to the RDP.

What is the CSS, and how is it linked to the DCC?

The CSS is part of a larger system for managing switching services. The CSS itself consists of two main components, the Registration Service and the Address Management Service. These services work together with the Electricity Retail Data Service and the Gas Retail Data Service to facilitate the switching of services for customers.

The DCC currently hold the CSS licence however, the CSS part is cloud based and is managed by a CSS Provider on behalf of the DCC.

The below diagram shows the interactions between these entities.



What is a DCC User?

A DCC User is any Party who wishes to utilise the DCC system to communicate with smart metering equipment. To interact with the DCC, every User needs to access a DCC Gateway Connection. The SEC currently specifies that a DCC User must have a physical gateway connection.

What is the issue?

The existing code requirements may lead to a waste of resources if the same thing can be achieved via virtual cloud-based connections. When using a physical data centre, there are expenses associated with purchasing hardware, setting up infrastructure, maintaining equipment, providing cooling and power, and ensuring physical security. On the other hand, running a virtual data centre entails fewer upfront costs for hardware, as it relies on shared resources within a cloud provider's infrastructure. Operating costs may also be reduced since the cloud provider typically handles tasks

like hardware maintenance and security. Additionally, virtual data centres offer greater flexibility and scalability, allowing resources to be scaled up or down according to demand, thereby optimising cost-efficiency.

When the SEC first came into effect in September 2013, it did not cater for a virtual cloud-based infrastructure. However, technology has advanced, and the CSS is an example of a secure industry system that is cloud based. The current wording in the SEC creates an obstacle for new entrants who prefer a more cost-effective option rather than building a physical infrastructure to establish transfer of information via their DCC Gateway Connection.

As currently written, the SEC does not allow for direct virtual gateway connectivity between any Party and the DCC.

What is the impact this is having?

New entrants

New entrants to the Gas or Electricity Network markets must continue to act, or contract a third party to act, as the RDP. This requires a DCC Gateway Connection at their premises which can be costly. Their only reason for needing to become an RDP for this is to receive a monthly data file from the DCC of smart metering systems on their network.

New market entrants who wish to become DCC Users face similar issues, although they can benefit more from using the system. Prospective market participants will face challenges in establishing connections with the DCC via a gateway connection due to the impracticality of physical network infrastructure. This includes the amount of time and resources used to put the physical network infrastructure in place. Along with the dedicated floor space the physical infrastructure takes. The shelf life of having a physical infrastructure in comparison to that of a virtual cloud-based infrastructure is also noticeably large.

Existing RDPs

While existing Parties have these connections, the costs of maintaining physical infrastructure and not completely transitioning to a cloud-based gateway can also be great. However, some existing participants are transitioning their infrastructure to online cloud-based platforms. Unfortunately, they cannot fully achieve this while still requiring a DCC Gateway Connection to be physically established. This misalignment of code requirements with the industry trend toward virtual cloud infrastructure hampers innovation, efficiency, and cost-effectiveness for market participants.

Impact on consumers

There are no impacts on consumers from this modification.

3. Solution

The Proposed Solution updates the definition of a DCC Gateway Connection to highlight that a virtual cloud-based connection is permissible for RDPs. Along with other amendments to appendices and

sections within the SEC for alignment. This will allow the DCC to share the data flows with them without the need for a physical connection.

There is a separate DCC piece of work that will explore cloud-based connections for all DCC Users. This will progress outside of the modification.

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

Network Parties and Other SEC Parties, if acting as an RDP, would be directly impacted as they would benefit from the flexibility to receive RDP files via a cloud-based system. The DCC will deliver the RDP files to the RDP's cloud-based system, rather than through the existing physical connection.

DCC System

There are no DCC System impacts from this modification.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section A 'Definitions and interpretations'
- Section E 'Registration Data'
- Appendix X 'Registration Data Interface Specification'
- Appendix Y 'Registration Data Interface Code of Connection'

The changes to the SEC required to deliver the proposed solution can be found in Annex B.

Devices

There will be no impact to Devices from this modification.

Consumers

There will be no impact to consumers from this modification.

Other industry Codes

There will be no impact to other Codes from this modification.

Greenhouse gas emissions

There will be no impact to Greenhouse gas emissions from this modification.

5. Costs

DCC costs

There are no DCC costs associated with this modification.

SECAS costs

The estimated SECAS implementation cost to implement this as a stand-alone modification is half a day of effort, amounting to approximately £300. This cost will be reassessed when combining this modification in a scheduled SEC Release. The activities needed to be undertaken for this are:

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

SEC Party costs

Refinement Consultation respondents advised this modification is not anticipated to result in any costs for SEC Parties, and it is expected to generate cost savings for RDPs. A Network Party expressed that although there are no costs anticipated by the implementation of this modification, there may be a possibility of cost allocation when progressed to the implementation stage.

6. Implementation approach

Approved implementation approach

The Change Sub-Committee (CSC) has agreed an implementation date of:

- **7 November 2024** (November 2024 SEC Release) if a decision to approve is received on or before 24 October 2024; or
- **27 February 2025** (February 2025 SEC Release) if a decision to approve is received after 24 October 2024 but on or before 13 February 2025.

This is a document only modification and can be targeted at the next available SEC Release. The implementation approach aligns with the immediate needs for RDPs and supports their transition to a more cost-effective and efficient data exchange system.

7. Assessment of the proposal

Areas for assessment

Sub-Committee input

SECAS has engaged the Chairs from the Operations Group (OPSG), the Technical Architecture and Business Architecture Sub-Committee (TABASC), the SSC and the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) to confirm what input is required from these forums. SECAS believes the following Sub-Committees will need to provide the following input to this modification:

Sub-Committee input	
Sub-Committee	**Input sought**
OPSG	No input required
PSC	No input required
SMDASC	No input required
SMKI PMA	No input required
SSC	Approval of the security architecture
TABASC	Review the solution
TAG	No input required

Observations on the issue

Views from the Change Sub-Committee

A CSC member queried whether the concept of a virtual gateway connection had been considered previously. It was confirmed this was a new idea and would be discussed with Security experts to ensure it would provide a fit for purpose.

Another CSC member noted support for this concept, highlighting that new businesses often do not have a physical premises.

Another CSC member questioned whether the modification's scope encompasses all DCC Users or is limited to just RDPs. SECAS clarified that, based on the suggestion from TABASC, the intention is initially to explore a solution for all DCC Users. The DCC emphasised that including all DCC Users would make the change significantly more complex. Therefore the scope has been limited to only RDP connections.

Views from the TABASC

The TABASC were supportive of the concept and noted it should be explored further. They were keen to support a solution that encompassed all DCC Users. They highlighted that there should be a

transition process if the scope were to include all DCC Users. This process should facilitate Parties wishing to migrate from physical to virtual DCC Gateway Connections.

Solution development

Data stamps on messages

A TABASC member raised a question regarding the time stamping of the data packet reception in a virtual cloud-based environment, to ensure that Target Response Times (TRTs) or Round Trip Times (RTTs) could still be accurately reported. They noted physical connections had a very clear time stamp and queried whether this would be replicated. The DCC has confirmed that this is not an issue and would be time stamped in the same way.

Solution scope

The TABASC supported the overall concept and noted that the scope should include all DCC Users to ensure that all Parties received the same opportunities.

The DCC carried out an initial impact assessment on the potential for all DCC Users to use cloud-based connections. They noted that there would be a High impact to the DCC Systems if the scope encompassed all DCC Users, whereas a change specifically for RDPs could be delivered without system changes.

Therefore, the Proposer would like to proceed with a text only solution that delivers a change for RDPs only. The DCC noted that they would explore the possibility of cloud-based connections for DCC Users under a separate piece of work.

SECAS returned to the TABASC to confirm the scope of this modification is solely for RDPs. This is due to the complexity of file transfer capabilities for all DCC Users. TABASC members agreed this modification can proceed if there is SSC approval of the connection. The DCC have advised that a User Competent Independent Organisation (CIO) Assessment can be carried out after this modification has been approved.

Can cloud based connections provide the same level of security?

The SSC were engaged to discuss this approach for the wider discussions around virtual connectivity for all DCC Users. The SSC were satisfied with the security risks associated with cloud-based connections.

Drafted legal text

The initial drafting only included changes to the definition of the connection. Working Group members agreed with the draft legal text approach. However, they did recommend that the legal text be reviewed to ensure it delivered the intended purpose. SECAS lawyers have reviewed the solution and detailed:

- Section A - Add a subpoint to the definition of a DCC Gateway Connection.
- Section E Amended Clause E3 to state RDPs may elect to connect to a Registration Data Interface using a virtual cloud-based connection.

- Appendix X 'Registration Dats Interface Specification' has also been amended to clarify how the DCC will provide any DCC Status Files.
- Appendix Y 'Registration Data Interface Code of Connection' has also been amended to clarify restrictions on the use of DCC Gateway Connections.

8. Case for change

Business case

The Proposed Solution offers long-term cost savings to RDPs as the adoption of cloud-based connections reduces expenses associated with physical infrastructure. It also aligns with industry trends to move towards cloud-based services. There are no DCC costs, nor expected SEC Party costs.

Views against the General SEC Objectives

Proposer's views

The Proposer believes that this modification supports SEC Objective (d)[1] by removing a possible barrier to potential entrants into the market.

Industry views

All respondents agreed that the modification supports SEC Objective (d).

Views against the consumer areas

Improved safety and reliability

This modification would have neutral impact against improving safety and reliability.

Lower bills than would otherwise be the case

This modification would have neutral impact against lowering bills.

Reduced environmental damage

This modification would have a neutral impact against environmental damage.

Improved quality of service

This modification would have a neutral impact against improved quality of service.

[1] facilitate effective competition between persons engaged in, or in Commercial Activities connected with, the Supply of Energy

Benefits for society as a whole

This modification would have a neutral impact on benefits for society as a whole.

Final conclusions

Including the changes required to the SEC will allow the DCC to share the data flows with RDPs without the need for a physical connection. The Working Group members recommended the legal text is reviewed by SECAS lawyers which since has been reviewed and additional changes have been incorporated in the legal text. The SSC have approved the security architecture behind the solution. The TABASC approved the solution with a recommendation for a User CIO Assessment to be completed. The DCC have advised this will take progress once the modification has been approved.

Appendix 1: Progression timetable

Timetable	
Event/Action	**Date**
Draft Proposal raised	12 Sep 2023
Presented to CSC for initial comment	19 Sep 2023
Business requirements discussed with TABASC	4 Oct 2023
CSC converts Draft Proposal to Modification Proposal	17 Oct 2023
Modification discussed with Working Group	1 Nov 2023
Refinement Consultation	8 Nov 2023 – 29 Nov 2023
Modification discussed with SSC	8 May 2024
Modification discussed with TABASC	4 Jul 2024
Modification Report approved by CSC	*16 Jul 2024*
Modification Report Consultation	*17 Jul 2024 –7 Aug 2024*
Change Board Vote	*21 Aug 2024*

Italics denote planned events that could be subject to change

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**
CIO	Competent Independent Organisation
CSC	Change Sub-Committee
CSS	Central Switching Service

Glossary	
Acronym	**Full term**
DCC	Data Communication Company
DSP	Data Service Provider
OPSG	Operations Group
PSC	Privacy Sub-Committee
RDP	Registered Data Provider
REC	Retail Energy Code
RTT	Round Trip Time
SEC	Smart Energy Code
SECAS	The Smart Energy Code Administrator and Secretariat
SMDASC	Smart Meter Device Assurance Sub-Committee
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TAG	Testing Advisory Group
TRT	Target Response Time