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MP277 ‘Virtual Gateway Connection’

Modification Report

Version 0.3

18 December 2024



About this document

This document is a Modification Report. It currently sets out the background, issue, solution, impacts, implementation approach 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 business requirements for the solution.
- **Annex B** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.

Contact

If you have any questions on this modification, please contact:

Simon Grimwood

020 3923 9758

simon.grimwood@gemserv.com

1. Summary

This proposal has been raised by Chris Barlow from the Data Communications Company (DCC).

The SEC currently requires a physical DCC Gateway Connection to be established at the premises of a DCC User to allow secure data transfers to and from the DCC. This is the case for all DCC Users excluding Registered Data Providers (RDPs). [MP248 'Requirements for DCC Gateway Connection'](#), implemented as part of the November 2024 SEC Release, updated the SEC to allow the DCC to share data with RDPs, and in turn allow RDPs to share acknowledgement messages without the need for a physical DCC Gateway Connection.

All other DCC Users are currently required to establish a physical DCC Gateway Connection to access the DCC network. Once a connection is established, a DCC User can then be considered a DCC Gateway Party. The DCC has fielded approximately 130 queries from prospective, new and existing DCC Users expressing an interest in obtaining a virtual DCC Gateway Connection, with some raising concerns about the misalignment of having a physical DCC Gateway Connection with their cloud-based IT infrastructure.

The impact of the current arrangements presents a challenge for prospective, new and existing DCC Users due to the potential costs and time associated in establishing a physical DCC Gateway Connection.

The Proposed Solution would provide the option for prospective, new and existing DCC Users to connect to the DCC through a virtual DCC Gateway Connection. In addition to this, the option for virtual DCC Gateway Connections will be added to the Data Service Provider (DSP) catalogue.

The Smart Energy Code Administrator and Secretariat (SECAS) is targeting this modification for implementation in the February 2025 SEC Release. This modification will be a Self-Governance modification. Costs for the Proposed Solution include an initial DCC setup and implementation fee of up to £135,000 dependant on the number of DCC Users, annual DCC running costs of up to £74,000 dependant on the number of DCC Users, and SECAS implementation costs.

2. Issue

What are the current arrangements?

What is a DCC Gateway Connection?

A DCC Gateway Connection is designed to ensure a secure and reliable connection for Data communication between DCC Users and the DCC. The ordering of DCC Gateway Connections is provisioned for by the following sections of the SEC:

- SEC Section E 'Registration Data'
- SEC Section H 'DCC Services'
- SEC Appendix G 'DCC Gateway Connection Code of Connection'

Prospective, new and existing DCC Users (excluding RDPs following the implementation of MP248) that want to connect to the DCC network must use a physical DCC Gateway Connection. This means that the organisation's IT system needs a direct physical connection to the DCC network through specific infrastructure. The SEC identifies this as a DCC Gateway Connection. In order for a DCC User to obtain a DCC Gateway Connection the following steps must be completed:

- DCC receives completed connection form
- Gateway Party receives initial quote (five Working Days)
- Gateway Party provides authority to proceed (up to thirty calendar days)
- DCC Carries out a physical site survey (thirty calendar days)
- Gateway Party receives revised quote (ten Working Days)
- Gateway Party accepts revised quote (up to thirty calendar days)
- Connection and equipment are installed (within 90 Working Days for high volume connection or, 25 Working Days for a low volume connection)

SEC Section H 'DCC Services' covers the requirement for DCC Users on how to interact with the DCC. It currently states that to interact with the DCC, a DCC User 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 90 days or longer to set up. This is to enable Data being sent from the DCC to the DCC User to be transferred securely. Once a connection is established, a DCC User can then be considered a DCC Gateway Party.

The DCC have two types of connection available. These are high volume connections and low volume connections.

High volume connections

When a high-volume connection is installed, the DCC state there it is likely to be ten or 20 megabits per second available for the DCC User. If more bandwidth is required, high volume connections can usually be upgraded up to a maximum of 100 megabits per second. This upgrade is a chargeable request.

Low volume connections

When a low volume connection is installed, the DCC state there is likely to be up to 40 megabits per second download speed and a ten megabits per second upload speed providing there is superfast broadband connection available at the Party's Data centre. If this is not available, then a standard broadband connection will be provided which the DCC state there is likely to be up to 20 megabits per second download speed and a 2.5 megabits per second upload speed. If the Party needs to move to a high-volume connection, then it will need to apply for a new high volume connection. The Party may then choose to cancel the low volume connection.

DCC Gateway Connection charges

There are two types of applicable charges in relation to a physical DCC Gateway Connection: the connection charge and the annual charge.

Connection charge

The connection charge recovers the cost of installing the physical DCC Gateway Connection and will be payable to the DCC following installation. The connection charges will depend on the specific requirements of each individual connection, as outlined in SEC Section H15 and Appendix G: DCC Gateway Connection Code of Connection.

The variables that will influence the level of this charge include:

- Physical distance from the premises of the physical DCC Gateway Connection to the local exchange
- Configuration of the premises of the DCC Systems i.e. whether there are existing connections that can be used or whether new lines will be required
- Type of connection determined e.g. ethernet, Fibre to the Cabinet (FTTC), Asymmetric Digital Subscriber Line (ADSL) and/or copper
- The amount of further work required as determined by a physical site inspection; and
- The bandwidth requested by the Connecting Party.

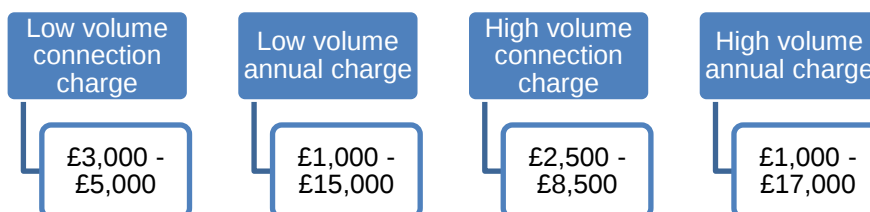
Annual charge

The annual charge recovers the annual rental cost associated with the connection and will be payable to the DCC at the start of each contractual year. The charge will be dependent on the specific requirements on each individual connection, as outlined in Section H15 and Appendix G: DCC Gateway Connection Code of Connection.

The variables that will influence the level of this charge include:

- The length of the contract i.e. one year or three years;
- Type of connection determined e.g. ethernet, FTTC, ADSL and/or copper; and
- The bandwidth requested by the Party

The figures below show the indicative explicit charges for a physical DCC Gateway Connection. More around the charges can be found in the [DCC Charging Statement](#).



What is the issue?

SEC Section H 'DCC Services' specifies that organisations connecting to the DCC must use a physical DCC Gateway Connection to ensure a secure link between their system and the DCC's services. While this was appropriate when the SEC was first implemented, it has now become a barrier for many prospective, new and existing DCC Users.

The DCC have fielded approximately 130 queries in relation to establishing virtual DCC Gateway Connections from prospective, new and existing DCC Users. Due to technological advancements, organisations are moving their IT systems to cloud-based systems. The current physical DCC Gateway Connection requirement has become increasingly outdated and incompatible with a large number of businesses operate today. The current arrangements do not cater to many prospective DCC Users who want to connect to the DCC.

What is the impact this is having?

The current physical DCC Gateway Connection requirements represent potential impracticalities for these cloud-based organisations. A large number of organisations want cloud-based options to align with their current IT models, but the existing SEC requirements for a physical DCC Gateway Connection are not as operably efficient as possible when paired with these cloud-based systems. This mismatch creates additional lead times and costs to spend on physical premises they otherwise would not require if the option to have a virtual DCC Gateway Connection existed during the process of becoming a DCC User.

The SEC obligation of having a physical DCC Gateway Connection can be obstructive to potential cost savings a DCC User could make by utilising a virtual DCC Gateway Connection. Additionally, potential and expected benefits of becoming a DCC User may be delayed, as establishing a physical DCC Gateway connection is a longer process than that of establishing a virtual DCC Gateway Connection.

Organisations that are currently operating with a physical DCC Gateway Connection but are looking to migrate to the cloud-based systems are still required in line with current SEC obligations to maintain a physical DCC Gateway Connection.

Users are unable to take advantage of the potential benefits virtual DCC Gateway Connections would offer in terms of additional functionality such as higher throughput and built in resilience and redundancy.

Costs for DCC Users

The DCC Charging Statement indicates costs associated with physical DCC Gateway Connections which include the initial connection set up fees and annual maintenance fees. It is thought that establishing a virtual DCC Gateway Connection could significantly lower these costs for some DCC Users. This potentially creates a challenge under the SEC which aims to facilitate fair and efficient access to the DCC network, potentially limiting equitable cost benefits across the energy sector.

Impact on consumers

Without a virtual alternative to the physical DCC Gateway Connection, there is a potential unnecessary time delay in the adoption of smart technologies. The DCC have noted that prospective

DCC Users have walked away from the process of becoming a DCC User as a virtual DCC Gateway Connection was not available. Consequently, consumers may be unable to take advantage of new and emerging advances in energy saving.

3. Solution

Proposed Solution

The Proposed Solution will implement a Virtual Routing & Forwarding (VRF) component and new virtual Firewall for each cloud connected DCC Gateway Party. The Firewall will route traffic between each DCC Gateway Party's VRF and the associated Smart Metering Equipment Technical Specifications (SMETS)2 VRF. The Firewall would only allow a DCC Gateway Party to access the DSP, Trusted Service Provider (TSP), testing environments and Service Now (SNOW).

DCC Gateway Parties can request both a physical and virtual DCC Gateway Connection, however this is not recommended practice by the DCC.

The SEC mandates a DCC Gateway Party must operate their virtual DCC Gateway Connection and digital signatures from within the UK. Changes to this affect will also be reflected within SEC Appendix G 'DCC Gateway Connection Code of Connections'.

An existing DCC Gateway Party holding a physical DCC Gateway Connection at the time of this modification's proposed implementation can request a change to a virtual DCC Gateway Connection without charge or contractual penalties.

The Proposed Solution will also provide the option for prospective, new and existing DCC Users to connect to the DCC through a virtual DCC Gateway Connection by selecting a virtual connection from the DSP Service Catalogue. In addition, the DCC will likely need to make changes to the DCC Charging Statement to reflect costs associated with a virtual DCC Gateway Connection.

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

Breakdown of Other SEC Party types impacted			
✓	Shared Resource Providers	✓	Meter Installers
✓	Device Manufacturers	✓	Flexibility Providers

Breakdown of Other SEC Party types impacted			
✓	DCC Other Users	✓	MAPs/ MAMs

DCC

The DCC will be required to facilitate a change to the DSP service Catalogue, enabling the selection of a virtual DCC Gateway Connection option. The Proposed Solution does not impact the DCC Total System. This modification will involve changes to the SEC but could enhance DCC's service flexibility and improve User satisfaction.

Large Suppliers

Large Suppliers could be directly and positively affected as they are significant Users of the DCC network for accessing Smart Meter Data. Virtual connectivity could reduce their connection costs and streamline their operations, especially if they plan to transition to, or already host their IT in, cloud-based systems. This option may also lower ongoing infrastructure maintenance costs and offer improve flexibility and functionality.

Small Suppliers

The Proposed Solution could offer potential cost and time savings to Small Suppliers as this could reduce the expenses tied to physical DCC Gateway Connections. A virtual DCC Gateway Connection could alleviate some operational pressures and make access to the DCC network more accessible and manageable.

Electricity and Gas Network Operators

Network Operators could see improved Data flow and coordination with other DCC Users, which may support grid flexibility and management. There is also a potential for cost savings by eliminating physical connections within physical premises.

Shared Resource Providers

Shared Resource Providers, who may serve multiple SEC Parties with IT and network services, are directly impacted as they will need to support virtual DCC Gateway Connections for their clients.

Meter Installers

Meter installers are indirectly impacted. While they do not connect directly to the DCC network, the flexibility in DCC access could benefit meter Data handling and streamline processes for their clients. Indirectly, it may lead to smoother installation procedures and data access for completed installations.

DCC Other Users

DCC Other Users, who may consist of new energy Service Providers, are directly impacted by this solution. For them, a virtual DCC Gateway Connection provides a more time efficient entry point to

DCC services, reducing the potential operational efficiencies of maintaining a physical DCC Gateway Connection.

DCC Systems

DCC System changes

This modification will not require DCC System changes. However, the DCC will be required to establish VRFs and Firewalls as part of the set up process.

DCC System traffic

This modification will not have an impact on DCC System traffic.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section A 'Definitions and Interpretation'
- Section E 'Registration Data'
- Section G 'Security'
- Section H 'DCC Services'
- Appendix G 'DCC Gateway Connection Code of Connection'

Devices

There will be no impact to Devices from this modification.

Consumers

There are expected positive impacts to consumers from the implementation of this modification. The Proposed Solution may have a positive impact on consumers as organisations will have another method of connecting to DCC services, potentially expanding offerings to consumers in the energy market.

Other industry Codes

There are no expected impacts on other industry Codes from this modification.

Greenhouse gas emissions

There are expected positive impacts to greenhouse gas emissions from this modification. The Proposed Solution could support decarbonisation goals by accelerating onboarding for DCC Users. Faster access to DCC services could facilitate cleaner energy management practices, thereby reducing the energy sectors carbon footprint overtime. The Proposed Solution could have a positive

impact to greenhouse gas emissions by introducing a method of connecting to the DCC without the need for a physical premises, reducing site visits and physical equipment to be present at the SEC Parties premise.

5. Costs

DCC costs

DCC costs are comprised of the addition of the VRF, configuration, changes to the Gamma network, and the design, build, and test of the updated DSP Service Catalogue. There is also a need to amend and write up contracts for impacted Service Providers of £17,285. To provide a maximum figure for costs, the setup and implementation cost for up to 28 Users is £135,000 with running costs of £74,000 for the first year, and contract amendment costs, giving a total of £226,285.

SECAS costs

The estimated Smart Energy Code Administrator and Secretariat SECAS implementation cost to implement this as a stand-alone modification is one day of effort, amounting to approximately £600. 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

Any potential SEC Party costs associated with this modification will be determined in the Refinement Consultation.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **27 February 2025** (February 2025 SEC Release) if a decision to approve is received on or before 26 February 2025; or
- **An Ad hoc SEC Release** which would take place 1 Working Days if a decision to approve is received after the 26 February 2025.

This modification will become an Ad hoc SEC Release if the February 2025 SEC Release becomes an unattainable implementation target. This modification could have immediate cost and time saving

benefits for some prospective, new and existing DCC Users, henceforth the urgency of implementing the Proposed Solution as quickly as possible.

7. Assessment of the proposal

Areas for assessment

Would the introduction of cloud-based connections impact existing DCC Gateway Parties with a physical DCC Gateway Connection?

The DCC has stated that both physical and virtual connections would be supported and there would be no changes associated with physical connections should DCC Users choose not to move to a virtual connection.

What additional security measures would be necessary to protect cloud-based connections to the DCC network?

Continued monitoring in line with existing processes would also be critical to ensure that any unusual or unauthorised behaviour is detected promptly. As part of MP248, the Security Sub-Committee (SSC) and the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) provided input into the virtual DCC Gateway Connection framework and did not identify any risks with virtual DCC Gateway Connections.

What alternatives do organisations have if a virtual DCC Gateway Connection is not implemented?

Organisations will still be able to establish a physical DCC Gateway Connection. However, an organisation may choose to delay accessing DCC services until a more flexible virtual DCC Gateway Connection option is available. This could have the potential to slow their integration into the smart energy ecosystem and delay their contribution to decarbonisation efforts.

Sub-Committee input

SECAS has engaged with the Chairs from the Operations Group (OPSG), Technical Architecture & Business Architecture Sub-Committee (TABASC), SSC, SMKI PMA, Testing Advisory Group (TAG) and the Privacy Sub-Committee (PSC) to confirm what input is required from these forums. The following Sub-Committees provided the below input to this modification:

Sub-Committee input	
Sub-Committee	Input sought
OPSG	A review of operational feasibility and implications of the Proposed Solution
TABASC	A review of technical feasibility and implications of the Proposed Solution
SSC	A review of security measures and security architecture

Sub-Committee input	
SMKI PMA	A review of technical feasibility and implications
TAG	No input required
PSC	No input required

Solution development

Previous SEC modification for cloud connectivity

A modification implemented in the November 2024 SEC Release, [MP248 'Requirements for DCC Gateway Connection'](#), was raised to allow the DCC to share data with RDPs without the need for a physical DCC Gateway Connection.

MP248 addressed the RDPs need for a virtual DCC Gateway Connection option that aligned with their cloud-based infrastructure, rather than relying on the traditional physical DCC Gateway Connection. This initial focus on RDPs has subsequently served as a test case for a more adaptable connectivity model within the DCC framework.

While MP248 was being discussed, the DCC recognised the need to explore a broader solution applicable to all DCC Users. This wider effort aims to expand on the framework of the MP248 solution, offering similar cloud-based connectivity options for prospective, new and existing DCC Users that are also moving towards a cloud infrastructure. Essentially, the solution framework and design principles established under MP248 formed the foundation for all DCC Users who select a virtual DCC Gateway Connection, ensuring consistency in approach, security, and reliability.

MP248 solution design background

To ensure a robust solution design, the SSC, SMKI PMA and the TABASC provided input on the security, technical and architectural aspects of MP248. The feedback received ensured that any cloud-based connectivity aligns with DCC security requirements and standards. The scope of MP248 only catered to RDPs.

When MP248 was initially discussed with the TABASC, concerns were raised regarding the wording of the business requirements which aimed at offering virtual connectivity to RDPs only. It was suggested that the requirements should explicitly extend to encompass all DCC Users, ensuring consistency in implementation. However, the DCC highlighted that the solution was aimed at RDPs only. The TABASC were satisfied with the rationale. The TABASC emphasised that it would be beneficial to include a transition process within the modification to facilitate existing DCC Gateway Parties wishing to migrate from physical to virtual DCC Gateway Connections to ensure a smooth transition for all involved. This was facilitated for RDPs as part of MP248.

The SSC and SMKI PMA were satisfied with the security architecture associated with virtual DCC Gateway Connections and recommended that a User Competent Independent Organisation (CIO) Assessment to be completed. The DCC have confirmed the CIO assessment will take place following the outcome of MP277.

Views from the Issues Group

A member questioned if virtual DCC Gateway Connections would make it easier for Manufacturers to connect to the DCC for live testing. They queried whether User Integration Testing (UIT) aspects are

being investigated in line with the issue. The DCC stated that testing environments and other connections supported by the current gamma connection method utilised for physical DCC Gateway Connections would be utilised to allow for connection to test environments when using a virtual DCC Gateway Connection. The issue was presented to the Issues Group as part of the November 2024 Working Group meeting. Members agreed that the Proposed Solution addresses the issue.

Views from the TABASC

During the November 2024 TABASC meeting, a member acknowledged that a previous modification, MP248, included a solution for RDPs only and that they anticipated this modification to be a larger piece of work due to the complexities of all DCC Users sending and receiving larger volumes of Data rather than the daily delta file which RDPs receive from the DCC.

The TABASC Chair queried whether or not virtual DCC Gateway Connections will be implemented as part of the DSP re-procurement. The DCC confirmed that this will be the case.

The DCC highlighted that when MP248 had been discussed with the SSC, the discussions applied to all DCC Users rather than RDPs only, therefore the solution to MP248 had paved the way for all Users to access virtual DCC Gateway Connections.

The DCC advised that it would include a table of costs for virtual DCC Gateway Connections in the Preliminary Assessment so that it can be compared to the physical DCC Gateway Connection costs. This information has been provided and has been scoped out as part of the Proposed Solution.

The TABASC Chair stated that they are interested with the progression of this modification and would like to review the Preliminary Assessment. As a result of this comment, SECAS returned to the TABASC during December 2024. SECAS presented a more detailed breakdown of what the Proposed Solution is comprised of, as well as outlining a cost of the modification.

During the discussion, the TABASC Chair advised that as part of the upcoming DSP re-procurement process, virtual DCC Gateway Connections would be included and potentially available during 2025. TABASC members challenged the business case for MP277 if the Proposed Solution was then likely to only be in place for approximately one year at most. The DCC took an action from the TABASC to reach out to the prospective DSP elect and discuss timescales of their implementation to ascertain if the modification should proceed.

The TABASC Chair also queried the level of interest from DCC Users, as the DCC had noted they had fielded 130 queries from prospective, new or existing DCC Users in relation to obtaining a virtual DCC Gateway Connection. The TABASC Chair was concerned by the number of queries noted, as no members of the TABASC were reflected in this number. The DCC took another action to reach out to Parties who had requested a virtual DCC Gateway Connection to compile intentions of support for the modification. Following the TABASC meeting, the DCC have confirmed multiple DCC Users from various parts of the industry have made contact with the DCC to show support and offer themselves for initial testing.

Views from the SSC

SECAS presented MP277 to the November 2024 SSC meeting, providing an overview of the issue, impacts and Proposed Solution. The SSC Chair noted their support for the intention of the modification, as they had expressed a desire for MP248 to have originally represented all DCC Users. Whilst supportive of the modification, the SSC asked SECAS and the DCC to return to the SSC to define whether DCC Users can have both physical and virtual DCC Gateway Connections, whether

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the DCC can facilitate UK only connections, and the implications if an existing DCC Gateway Party wanted to move from physical to virtual Gateway Connections.

SECAS and the DCC returned to the SSC in December 2024 and provided an update to the SSC on the requested criteria. It was confirmed that DCC Users can hold both physical and virtual DCC Gateway Connections if they so wish, however this is not a DCC recommended practice. The DCC confirmed they will verify that a DCC Users virtual DCC Gateway Connection is routed through a UK only connection, however noted a DCC User could technically endpoint their connection via a non-UK data centre, so confirmed a need for additional governance in SEC Appendix G 'DCC Gateway Connections Code of Connection' to negate this.

Finally, the DCC confirmed that an existing DCC Gateway Party can switch from a physical to a virtual DCC Gateway Connection without any contractual penalties, and the DCC would be responsible for the new virtual DCC Gateway Connection.

During the meeting, several DCC Users asked the DCC if they would be able to act as test subjects when implementing virtual DCC Gateway Connections. The DCC asked them to reach out following the meeting to discuss their support for MP277's Proposed Solution.

Views from the TAG

SECAS presented MP277 to the December 2024 TAG meeting, providing an overview of the issue, impacts and Proposed Solution. The TAG approved of the modifications intent and were interested in the Proposed Solution. A TAG member queried whether the DCC would provide access to test environments as part of the virtual DCC Gateway Connection, in line with that of the gamma connections utilised within physical DCC Gateway Connections. The DCC took an action to confirm if test environments would be accessible in a virtual connection format. The DCC subsequently confirmed that test environments would be accessible in the same way that physical DCC Gateway Connections are.

Views from the OPSG

SECAS provided a paper outlining MP277 and the Proposed Solution to the December 2024 OPSG with the intention of gathering any potential feedback from OPSG members. SECAS have not received any feedback from the OPSG to date, however SECAS discussed this issue with the OPSG Chair prior to the meeting, and they believed there are no operational impacts as a result of MP277.

8. Case for change

Business case

Approval of the modification

The Proposed Solution is directed by the need to modernise connectivity between the DCC and DCC Users. The current reliance on physical DCC Gateway Connections imposes setup and maintenance costs. A virtual DCC Gateway Connection would reduce these costs, streamlining the new DCC User process, and encourage more organisations to access DCC services. As more DCC Users join through a virtual DCC Gateway Connection, the DCC can better support the decarbonisation efforts,

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enhancing Data sharing and system flexibility crucial to renewable energy integration and energy management.

Costs associated with taking up a virtual DCC Gateway Connection demonstrate potentially significant cost savings for medium to high traffic DCC Gateway Parties. Table 1 below outlines the costs of setting up and maintaining virtual and physical DCC Gateway Connections for new and existing DCC Users who oversee both medium and high traffic volumes.

Traffic Volume	Costs	New Users		Existing Users	
		Virtual Gateway	Physical Gateway	Virtual Gateway	Physical Gateway
Medium	1st Year Setup	£1,600	£5,500	N/A	
	1st Year Running Costs	£6,500	£9,000		
	Ongoing Running Costs	£6,500	£9,000		
High	1st Year Setup	£1,700	£6,500	£1,700	£6,500
	1st Year Running Costs	£7,000	£15,000	£7,000	£15,000
	Ongoing Running Costs	£7,000	£15,000	£7,000	£15,000

Table 1: Provisional setup and maintenance costs for new & existing DCC Users with medium & high traffic-loads.

The above table demonstrates significant potential cost savings for medium to high traffic DCC Users. Savings would be unique per user dependent on traffic workload and current contractual DCC costs. A breakdown of potential savings is shown below:

- New DCC Users with a medium traffic-load could save circa. £6,000 in the first year, and circa. £2,500 per year in subsequent years if they were to opt for a virtual DCC Gateway Connection.
- New DCC Users with a high traffic-load could save circa. £12,000 in the first year, and circa. £8,000 per year in subsequent years if they were to opt for a virtual DCC Gateway Connection.
- Existing DCC Users with a high traffic-load could save circa. £6000 in the first year, and circa. £8,000 per year in subsequent years if they were to opt for a virtual DCC Gateway Connection.

Views against the General SEC Objectives

Proposer's views

The Proposer believes that this modification will better facilitate SEC Objectives (a)¹, (d)² and (e)³ by enabling a more efficient new DCC User process and enduring operation of existing DCC Users. This flexibility ensures improved functionality and potentially lower costs for some DCC Users making it easier and faster to connect. The costs and setup time associated with a virtual DCC Gateway Connection may help lower entry barriers for new organisations and reduce ongoing operational costs. The flexibility and scalability of a virtual DCC Gateway Connection promotes innovation in energy network operations, potentially enabling a DCC User to adopt advanced energy management technologies.

Industry views

SECAS will gain industry views throughout the Refinement Process and Working Group discussions.

Views against the consumer areas

Improved safety and reliability

This modification would have a positive impact against improved reliability. This would be demonstrated in the introduction of flexibility across the market and by lowering operational costs.

Lower bills than would otherwise be the case

This modification would have a positive impact against lowering bills. This would be demonstrated in by lowering operational costs for DCC Users in turn, this could lower bills for end consumers.

Reduced environmental damage

This modification would have a positive impact in relation to environmental damage. This would be demonstrated in the journey towards statutory net-zero targets by allowing DCC Users to communicate with the DCC without the need for a physical DCC Gateway Connection.

Improved quality of service

This modification would have a positive impact on the quality of service. Offering a virtual alternative to that of a physical DCC Gateway Connection may increase the reliability of services offered.

Benefits for society as a whole

This modification would have a neutral impact to society as a whole.

¹ Facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers premises within Great Britain

² Facilitate effective competition between persons engaged in, or in Commercial Activities connected with, the Supply of Energy

³ Facilitate such innovation in the design and operation of Energy Networks (as defined in the Data Communications Company Licence) as will best contribute to the delivery of a secure and sustainable Supply of Energy

Appendix 1: Progression timetable

Timetable	
Event/Action	Date
Business requirements developed with the DCC	28 Oct 2024 – 30 Oct 2024
Issue discussed at Issues Group	6 Nov 2024
Modification discussed with TABASC	7 Nov 2024
Draft Proposal raised	8 Nov 2024
Preliminary Assessment requested	8 Nov 2024
Presented to CSC for initial comment	19 Nov 2024
CSC converts Draft Proposal to Modification Proposal	19 Nov 2024
Modification discussed with SSC	27 Nov 2024
Preliminary Assessment returned	6 Dec 2024
Modification discussed with TAG	10 Dec 2024
Modification discussed with TABASC	10 Dec 2024
Modification discussed with OPSG	10 Dec 2024
Refinement Consultation	18 Dec 2024 – 15 Jan 2025
<i>Modification discussed with Working Group</i>	<i>15 Jan 2025</i>
<i>Modification approved by CSC</i>	<i>21 Jan 2025</i>
<i>Modification Report Consultation</i>	<i>22 Jan 2025 – 13 Feb 2025</i>
<i>Change Board Vote</i>	<i>26 Feb 2025</i>

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
ADSL	Asymmetric Digital Subscriber Line
CIO	Competent Independent Organisation
CSC	Change Sub-Committee
DCC	Data Communications Company
DSP	Data Service Provider
FTTC	Fibre To The Cabinet
MAM	Meter Asset Manager
MAP	Meter Asset Provider

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Glossary	
Acronym	Full term
OPSG	Operations Group
PSC	Privacy Sub-Committee
RDP	Registered Data Provider
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specification
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SNOW	Service Now
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TAG	Testing Advisory Group
TSP	Trusted Service Provider
UIT	User Integrated Testing
VRF	Virtual Routing & Forwarding

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MP277 ‘Virtual Gateway Connection’

Annex A

Business requirements – version 0.3

About this document

This document contains the business requirements that support the solution for this Modification Proposal. It sets out the requirements along with any assumptions and considerations. The Data Communications Company (DCC) will use this information to provide an assessment of the requirements that help shape the complete solution.

1. Business requirements

This section contains the functional business requirements. Based on these requirements a full solution will be developed.

Business Requirements			
Ref.	Requirement	Responsible for delivery	MoSCoW
1	Virtual connection option available for new and existing DCC Users	DCC	M
2	DCC Users shall be able to select a virtual connection to the DSP from the DSP service catalogue	DCC	M
3	Virtual connection must be as secure as the current physical connection	DCC	M
4	Provision for onboarding and maintenance of virtual connections	DCC	M
5	Functionality and support are equivalent to a physical DCC Gateway Connection	DCC	M

Key

- M = Must have
- S = Should have
- C = Could have
- W = Won't have

2. Considerations and assumptions

This section contains the considerations and assumptions for each business requirement.

2.1 General

Excluding Registered Data Providers (RDPs) the Smart Energy Code (SEC) requires a physical DCC Gateway Connection at the SEC Parties' premises to allow secure Data transfer with the Data Communications Company (DCC). This requirement is preventing existing and cloud-based organisations wishing to become a DCC User being able to connect in a more cost effective method.

2.2 Requirement 1: Virtual connection option available for new and existing DCC Users

To modernise and streamline the connection process for all new and existing DCC Users, the DCC must provide a virtual gateway connectivity option. This allows all new and existing DCC Users a more flexible and potentially cost-effective method of communicating with the DCC.

2.3 Requirement 2: DCC Users shall be able to select a virtual connection to the DSP from the DSP service catalogue

This requirement allows DCC Users to choose a virtual connection to the Data Service Provider (DSP), making it easier for them to connect with DCC services in a flexible, cost-effective way. By providing this option in the DSP service catalogue, the DCC ensures that Users can access this alternative to physical connections, reducing setup costs and lead times, especially for those using cloud-based infrastructure.

2.4 Requirement 3: Virtual connection must be as secure as the current physical connection

To ensure that the proposed virtual DCC Gateway Connection can meet the security standards set by physical DCC Gateway Connection this modification should undergo a comprehensive assessment. DCC Users wishing to connect virtually must also take all reasonable steps to ensure that a virtual connection is secure as the physical connection from the DCC User side of the connection.

2.5 Requirement 4: Provision for onboarding and maintenance of virtual connections

The DCC must support the onboarding of virtual gateway Users, with defined maintenance and troubleshooting processes. Parties that wish to connect virtually should have support in maintaining their connection(s) through the DCC.

2.6 Requirement 5: Functionality and support are equivalent to a physical DCC Gateway Connection

This requirement will ensure that any virtual DCC Gateway Connections are robust alternatives, aligning with the DCC's goals of a flexible, accessible network.

3. Glossary

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

Glossary	
Acronym	Full term
DCC	Data Communications Company
DSP	Data Service Provider
SMETS	Smart Metering Equipment Technical Specifications
SEC	Smart Energy Code
RDP	Registered Data Provider

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MP277 ‘Virtual Gateway Connection’

Annex B

Legal text – version 0.1

About this document

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

Section A ‘Definitions and Interpretation’

These changes have been redlined against Section A version 43.0.

Amend Section A.1.1 as follows:

	means:
DCC Gateway Connection	(a) in respect of each RDP which has elected under Section E3 (DCC Gateway Connections for Registration Data Providers) to utilise a virtual (cloud-based) connection, that virtual connection; or (b) in all other cases, the physical <u>or virtual</u> infrastructure by which a connection is (or is to be) made between a premises and the DCC Systems (and each such DCC Gateway Connection shall form part of the DCC Systems).
DCC Gateway Equipment	means, for each premises and any <u>physical</u> DCC Gateway Connection provided at that premises, that part of the DCC Gateway Connection that is (or is to be) located within that premises.
DCC Gateway Party	means a Party that is seeking or has been provided with a DCC Gateway Connection at its premises , or to whom the right to use that connection has been transferred in accordance with Section H15.16 (Use of a DCC Gateway Connection).

Section E 'Registration Data'

These changes have been redlined against Section E version 12.0.

Add Section E6 as follows:

E6. Virtual DCC Gateway Connections

- E6.1 In addition to a DCC User having the ability to request a physical DCC Gateway Connection, a DCC User may also request a virtual DCC Gateway Connection, and the DCC shall offer to provide such virtual DCC Gateway Connections, in accordance with H15.4 and H15.6 to H15.12.
- E6.2 The DCC shall provide the requested virtual DCC Gateway Connections in accordance with Sections H15.13 to H15.15.
- E6.3 The DCC shall ensure that the virtual DCC Gateway Connection it provides is of a sufficient bandwidth to meet the purposes for which such connection will be used by the DCC user.
- E6.4 Once a virtual DCC Gateway Connection has been established:
 - (a) the DCC User that requested it and the DCC shall each comply with the provisions of the DCC Gateway Connection Code of Connection applicable to the DCC Gateway Bandwidth Option utilised at the connection; and
 - (b) the DCC shall make the connection available to such DCC User until:
 - (i) the DCC is notified by such DCC User that it wishes to cancel the connection; or
 - (ii) such DCC User ceases to be a DCC User.

Section G 'Registration Data'

These changes have been redlined against Section G version 25.0.

Amend Section G3 as follows¹:

User Systems: Physical Location

G3.23 Each User which is an Eligible User in relation to any Supply Sensitive Service Request shall ensure that:

- (a) any Cryptographic Module which constitutes a component of its User Systems and in which:
 - (i) any Private Key that is used to Digitally Sign Pre-Commands is held;
 - (ii) Pre-Commands are Digitally Signed; and
 - (iii) any SMETS1 Service Request that constitutes a Critical Service Request is Digitally Signed; and
- (b) any functionality of its User Systems which is used to apply Supply Sensitive Checks,
 - (i) is located, operated, configured, tested and maintained in the United Kingdom by User Personnel who are located in the United Kingdom.

G3.24 Each User to which Section G3.23 applies shall ensure that the components and the functionality of its User Systems to which that Section refers are operated from a sufficiently secure environment in accordance with the provisions of Section G5.17.

Supply Sensitive Check

G3.25 Each User which is an Eligible User in relation to any Supply Sensitive Service Request shall ensure that:

- (a) it applies a Supply Sensitive Check prior to Digitally Signing a Pre-Command or SMETS1 Service Request in respect of any Supply Sensitive Service Request;
- (b) it both applies that Supply Sensitive Check and Digitally Signs the relevant Pre-Command or SMETS1 Service Request in the United Kingdom; and
- (c) the relevant Pre-Command or SMETS1 Service Request has been processed only in the United Kingdom between the application of the Supply Sensitive Check and the Digital Signature.

¹ The SEC Lawyers, Gowling WLG, will review SEC Section G 'Security' Clause G3 to assess whether any changes are required in relation to virtual DCC Gateway Connections.

Section H 'DCC Services'

These changes have been redlined against Section H version 28.0.

Amend Section H15.6 as follows:

- H15.6 Within 5 Working Days following receipt of any request from a Party for a DCC Gateway Connection at a premises, the DCC shall:
- (a) where the request does not include all the information required in accordance with the DCC Gateway Connection Code of Connection, notify the Party that this is the case and provide reasonable assistance to the Party in re-submitting its request; or
 - (b) undertake a desk-based or online assessment as described in the DCC Gateway Connection Code of Connection, and provide a response to the Party, where a physical DCC Gateway Connection has been requested, in respect of that premises under Section H15.7, H15.8 or H15.9 (as applicable).

Amend Section H15.7 as follows:

- H15.7 In the case of a request for a DCC Gateway LV Connection, and where the DCC's desk-based or online assessment indicates that a physical site assessment is not required, the DCC shall provide an offer to the Party setting out:
- (a) the DCC's reasonable estimate of the likely bandwidth of the connection once made;
 - (b) the date from which the DCC will provide the connection;
 - (c) the connection Charges and annual Charges that will apply in respect of the connection; and
 - (d) the connection period for which the connection will be made available.

Amend Section H15.8 as follows:

- H15.8 In the case of a request for a DCC Gateway LV Connection, and where the DCC's desk-based or online assessment indicates that a physical site assessment is required, the DCC shall notify the requesting Party that this is the case, and (unless the DCC is not reasonably able to do so without undertaking a physical site assessment, and subject to further information which may become available as a result of the physical site assessment) notify the Party of:
- (a) the date from which the DCC will provide the connection;

- (b) the connection Charges and annual Charges that will apply in respect of the connection; and
- (c) the connection period for which the connection will be made available.

Amend Section H15.9 as follows:

H15.9 In the case of a request for a DCC Gateway HV Connection, and where the connection to be provided is a physical DCC Gateway Connection, the DCC shall notify the Party that a physical site assessment is required, and (unless the DCC is not reasonably able to do so without undertaking a physical site assessment, and subject to further information which may become available as a result of the physical site assessment) notify the Party of:

- (a) the date from which the DCC will provide the connection;
- (b) the connection Charges and annual Charges that will apply in respect of the connection; and
- (c) the connection period for which the connection will be made available.

Amend Section H15.14 as follows:

H15.14 Where a Party accepts an offer as described in Section H15.13, the DCC shall take all reasonable steps to provide the requested physical or virtual DCC Gateway LV Connection or DCC Gateway HV Connection by the date set out in the accepted offer (subject to payment of any applicable Charges).

Amend Section H15.16 as follows:

H15.16 Subject to Section H15.3, the Party that requested a DCC Gateway Connection ~~at a premises~~ shall be entitled to use that connection for as long as the DCC is obliged to make it available in accordance with Section H15.18 (provided that such Party may transfer its right in respect of that DCC Gateway Connection to another Party on both such Parties giving notice to the DCC referring to this Section H15.16).

Amend Section H15.18 as follows:

Ongoing Provision of a DCC Gateway Connection

H15.18 Once a DCC Gateway Connection has been established ~~at a premises~~ on behalf of a DCC Gateway Party:

- (a) the DCC shall make the connection available to the DCC Gateway Party in accordance with this Code until the DCC Gateway Party notifies the DCC that the Party wishes to cancel the connection (on not less than three months' prior notice);
- (b) the DCC shall give the DCC Gateway Party four months' advance notice of the date on which the period of connection referred to in the accepted connection offer is due to expire (or of the date on which any period of extension pursuant to paragraph (c) below is due to expire), and shall at the same time confirm the annual Charges that will apply if the connection is not cancelled;
- (c) on the expiry of a period referred to in paragraph (b) above, unless the DCC Gateway Party cancels the connection in accordance with paragraph (a) above, the period of connection shall be extended for a year (which will give rise to an additional annual Charge);
- (d) the DCC Gateway Party and the DCC shall comply with the provisions of the DCC Gateway Connection Code of Connection applicable to the DCC Gateway Bandwidth Option utilised at the connection (and the DCC may limit the use of the connection where the DCC Gateway Party fails to do so and where this is provided for in the DCC Gateway Connection Code of Connection);
- (e) the DCC shall, on request, provide the DCC Gateway Party with a report on the performance of its connection as further set out in the DCC Gateway Connection Code of Connection; and
- (f) in the case of DCC Gateway HV Connections, the DCC Gateway Party may increase or decrease the bandwidth of its connection in accordance with (and subject to the limitation provided in) the DCC Gateway Code of Connection (provided that, in the case of decreases, the applicable Charges may not alter as a result).

Amend Section H15.20 as follows:

H15.20 In first providing a DCC Gateway Connection ~~at a premises~~, where the connection to be provided is a physical DCC Gateway Connection, the DCC shall procure that the DCC Gateway Equipment is installed at the relevant premises, and that the DCC Gateway Equipment is installed in accordance with Good Industry Practice and all applicable Laws and Directives.

Appendix G ‘DCC Gateway Code of Connection’

These changes have been redlined against Appendix G version 3.0.

Amend Section 1.7 as follows:

- 1.7 Where a DCC Gateway Party intending to use a physical DCC Gateway Connection requests multiple physical DCC Gateway Connections for a single location at the same time, the DCC shall take all reasonable steps to conduct any Site Surveys in a single visit to that location.

Add Sections 1.32, 1.33, 1.34, 1.35 and 1.36 as follows:

Virtual DCC Gateway Connections

- 1.32 The DCC shall provide the option for cloud connectivity for DCC Users in the DSP.
- 1.33 The DCC shall give a DCC Gateway Party reasonable notice of the required online assessment to perform installation, maintenance or removal of any virtual connection and the DCC shall accommodate the DCC Gateway Party's reasonable requests regarding the timing of such visits.
- 1.34 A DCC Gateway Party can request both a virtual and physical DCC Gateway Connection if required.
- 1.35 A DCC Gateway Party can request a switch from a physical DCC Gateway Connection to a virtual DCC Gateway Connection, and vice-versa.
- 1.36 The DCC will verify that a virtual DCC Gateway Connections is only connected to a United Kingdom Availability Zone in line with that of physical DCC Gateway Connections. Data Centres utilised by a DCC Gateway Party must be hosted within a United Kingdom Availability Zone.