



Department for
Energy Security
& Net Zero

Department for Energy
Security & Net Zero
3-8 Whitehall Place
London SW1A 2AW
www.gov.uk/energysecurity

The Authority (Ofgem), the SEC Panel, SEC Parties
and other interested parties

12 December 2023

Dear Colleague,

**SMART METERING IMPLEMENTATION PROGRAMME: COMMUNICATION WITH SMART
METERING SYSTEMS INSTALLED IN PREMISES WITH NO WIDE AREA NETWORK
CONNECTION**

1. The Wide Area Network (WAN) provided by the DCC is required to cover 99.5% of premises in the North Region and 99.25% of premises in the Central and South Regions of Great Britain. The Department for Energy Security and Net Zero (DESNZ) estimates (based on DCC's SMWAN Coverage Checker) that there are currently approximately 328,000 premises at which it is not expected that an SMWAN connection would be available were a Smart Metering System to be installed, and hence where smart metering devices would not be able to communicate via the DCC.
2. The Department is increasingly receiving requests from members of the public to enable connectivity so that consumers can access smart metering services in areas where there currently is no SMWAN coverage, in particular from consumers with internet access.
3. Further to discussions between DESNZ and the DCC, DESNZ is of the view that it would be appropriate to progress the development of a solution that would enable such premises to have access to the benefits of smart metering. The proposed solution would allow smart metering devices installed in consumer premises to be communicated with by the DCC securely over the internet using the consumer's broadband connection. In areas where such premises are located, broadband coverage is sufficient to support the arrangements without inconvenience to the consumer (speeds of 2Mb/s or greater) to on average around 95% of those premises.
4. This consultation, which forms the Annex to this letter, invites views on a proposal to develop such a solution subject to an analysis of the costs and benefits, and further to approval of the solution by the Security Sub-Committee. We wish to make a decision on whether changes should be progressed from Q1 2024 that will facilitate this solution so that if a decision is taken to proceed, it can be delivered as soon as reasonably practicable.
5. In the consultation it is also recognised that, if the solution is to be progressed, in addition to understanding how it would be delivered technically, it will be necessary to understand how the solution fits into the existing arrangements, including consideration of how the regulatory framework should be adapted. It proposes that the decision on whether or not to progress with the solution can be separated from the detail of this policy, and proposes that such matters should be

addressed via a separate consultation in Q1 2024. Finally it goes on to set out the proposed next steps in the process.

6. Responses to the consultation are invited by 17:00 on 15 January 2024.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Jennie Tse', with a stylized flourish at the end.

Jennie Tse

Director

Smart Metering Implementation Programme

(An official of the Department for Energy Security & Net Zero authorised to act on behalf of the Secretary of State).

ANNEX: Consultation on the Proposal to Progress the Development of an Internet-based Smart Metering Communications Solution

1. Background

- 1.1. The Wide Area Network (WAN) provided by the DCC is required to reach 99.5% of premises in the North Region and 99.25% of premises in the Central and South Regions of GB. The Department for Energy Security and Net Zero (DESNZ) estimates (based on data from DCC's SMWAN Coverage Checker) that there are currently approximately 328,000 premises ("No-WAN" premises) at which it is not expected that an SMWAN connection would be available were a Smart Metering System to be installed, and hence where smart metering devices would not be able to communicate via the DCC.
- 1.2. Further to discussions between DESNZ and the DCC, DESNZ is of the view that, subject to a review of the costs and benefits and further to approval of the solution by the Security Sub-Committee, it would be appropriate to progress the development of a solution that would enable such premises to have access to the benefits of smart metering. The proposed solution would allow smart metering devices installed in consumer premises to be communicated with by the DCC securely over the internet using the consumer's broadband connection.
- 1.3. We understand that there are a number of existing IHDs/PPMIDs/CADs and other devices such as EV charge points that have been deployed within consumer premises and that are capable of connecting to the internet via the consumer's broadband. In general we believe that consumers have willingly accepted such connections. Hence, we believe that a solution that relies upon the use of the consumer's broadband internet connection is likely to be accepted by consumers, particularly where it is needed to provide a smart metering service to the benefit of the consumer.

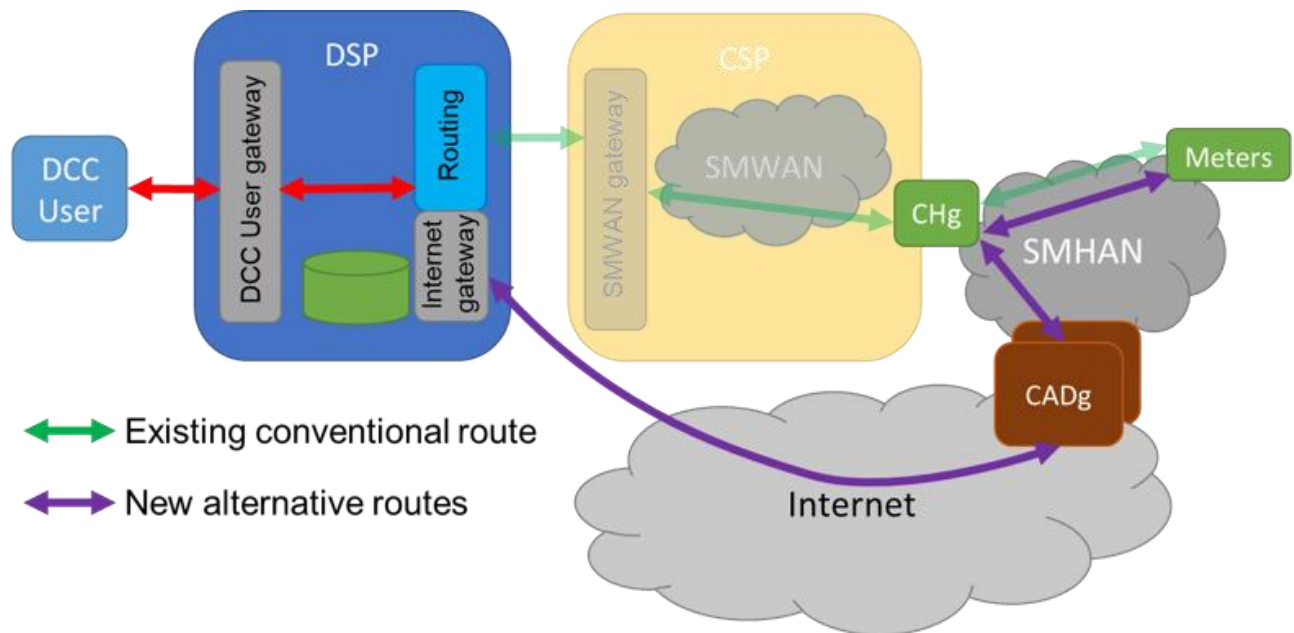
2. Proposed Solution

- 2.1. The proposed solution is that arrangements would be established such that an internet-connected Consumer Access Device (CAD)¹ could be connected to the Communications Hub of an installed Smart Metering System. Commands could be relayed to smart metering devices from DCC Users via: the DCC; the internet; the consumer's broadband connection; the CAD; and the Communications Hub. Service Responses and Device Alerts could be relayed from smart metering devices to DCC Users in the opposite direction.
- 2.2. The solution would be:
 - i. available to all DCC Users, using existing capability: in that any DCC User would be able to communicate with the Smart Metering System via their existing connection to the DCC. DCC would take care of routing the message, whether over the Internet or via the SMWAN; and

¹ A "Consumer Access Device" is a generic term used for a device that can connect to the Home Area Network established by a Communications Hub and which can access data from other smart metering devices. In practice, the CAD functionality could be incorporated into a stand alone device, or into an existing smart metering device type.

- ii. secure: in that the communications would be secured using a form of Virtual Private Networking (VPN) technology², and would not require any changes to the security approach already in use.

2.3. The proposed solution is depicted diagrammatically as follows³:



- 2.4. Changes within the DCC Systems would provide for the DCC to route messages either over the DCC SMWAN or securely over the internet depending on the nature of the connectivity of the premises.
- 2.5. The Consumer Access Device ("CADg"⁴ in the above diagram) would connect to the internet via the consumers broadband, and via the SM HAN to the Communications Hub ("CHg"⁵ in the above diagram). Messages routed via the CADg could then be relayed by the CHg to and from other Smart Metering Devices in the premises via the SM HAN.
- 2.6. The DCC would specify the interface details by which internet-enabled CAD Devices could communicate over the internet with the DCC via a secured connection. It should be noted that the CAD functionality could be incorporated into a stand-alone device or into the functionality of an existing Smart Metering Device type.
- 2.7. We believe that modest firmware changes would be needed to existing Communications Hub functionality to support these arrangements however, hardware changes will not be required. Changes would be needed to permit SEC Parties to order these internet connecting CHs.
- 2.8. It is expected that the solution would be capable of operating in premises in which AlHAN Equipment is installed to extend the range of the HAN.

² The Commands, Responses and Alerts themselves would be secured or encrypted as appropriate using SMKI as for existing smart meter messaging, and further secured by the VPN when being routed over the internet.

³ For a more detailed explanation of the DCC's technical architecture, please refer to the following: <https://smartenergycodecompany.co.uk/technical-architecture-and-business-architecture/>

⁴ CADg stands for Consumer Access Device with Smart Metering (g for GBCS) messaging support.

⁵ CHg stands for Communications Hub that supports connection by a CADg.

Question 1	Do you have any comments on the proposed high-level solution?
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3. Initial Views on Licence and SEC Changes

- 3.1. To implement these arrangements, our initial view is that changes would be needed to:
- The DCC licence, to set out that the new internet-based messaging route would be supported by the DCC and set out in the SEC;
 - Update the SEC provisions relating to ordering Communications Hubs to allow SEC Parties to order Communications Hubs with the new functionality;
 - Recognise the premises in respect of which Communications Hubs with the new functionality can be installed;
 - SEC subsidiary documents, as set out below.
- 3.2. The subsidiary documents we expect to have to change (or newly introduce) will include:
- The Communications Hub Technical Specifications: to set out the additional functionality of Communications Hubs that will support the arrangements;
 - The GB Companion Specification: to set out how the new Communications Hub functionality will work in detail;
 - A specification for the Virtual WAN Provider Interface: such that CADg manufacturers can understand the device requirements/configuration needed to connect to the DCC over the internet;
 - A change the DCC User Interface Services Schedule: to set out the target response times applicable to DCC Systems in relation to the services routed over the internet;
 - A new transition document: to control the staged switch-on of the new services; and
 - Possibly a specification for the CAD functionality (although it is currently thought that the interface specification will be sufficient and that this may not therefore be required).
- 3.3. We also recognise that changes would be needed to the wider regulatory framework for smart metering were this additional solution to be introduced. This is discussed further in Section 5 below.
- 3.4. We anticipate that if the proposed solution is progressed it would initially be developed using the 4G Communications Hub as the base platform with further enhancements. However, we wish to de-couple the implementation of the internet-based communications arrangements from the programme of work to deliver 4G Communications Hubs in the first instance. That would mean that initially at least, 4G Communications Hubs would not have the functionality, but it could be introduced at a later stage. Consideration would also be given to extending the requirement for this functionality in other types of Communications Hub.
- 3.5. If the proposed solution is progressed, we would propose to consult on the aforementioned high-level enabling changes to the DCC licence and the SEC in Q1 2024, with proposed changes to subsidiary documents (which would set out the technical detail) following thereafter.

Question 2	Do you have any comments on the initial scope of regulatory changes proposed?
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4. Costs and Benefits

- 4.1. Many deployed Prepayment Meter Interface Devices (PPMIDs) or In-Home Displays (IHDs) already have internet connection capability (e.g. they are Wi-Fi enabled or capable) as do dedicated CAD devices. We are of the view that devices of this type could be modified to support the new functionality and installed in No-WAN premises. The changes to DCC Systems needed would include changes to support message routing, the establishment of the Virtual WAN Provider and upgrades to Communications Hubs.
- 4.2. Conversely, the potential benefits are significant. Of the 328,000 No-WAN premises, we believe that broadband coverage is sufficient to support the arrangements without inconvenience to the consumer (speeds of 2Mb/s or greater) to on average around 95% of premises. This information has been derived from analysis undertaken by the Department using data from the DCC's SMWAN Coverage Database overlaid with broadband coverage data sourced from the fixed coverage postcode unit dataset from [Ofcom's 2022 Connected Nations Report](#).
- 4.3. In addition, we estimate, based on data supplied by EUK and DCC, that over 55,000 premises that currently operate under the radio-teleswitching (RTS) arrangements are No-WAN premises⁶, and that the proposed solution would allow such premises to have access to the benefits of multi-rate tariffs via an operating SMETS2 Smart Metering System rather than via the RTS service which is scheduled to be shut down.
- 4.4. DESNZ's high-level estimate of the costs of the proposed solution is such that the benefits, based on an assumed % uptake of the solution in No-WAN premises, would be likely to materially outweigh the costs.
- 4.5. As is discussed below, we propose to hold a workshop with industry in Q1 2024 to specifically discuss the costs and benefits of the proposed solution at which we hope to present cost information from the DCC as well as an estimate of other (non-DCC costs) and benefits information provided by DESNZ. We hope that following this, a decision on whether to proceed in delivering the underlying technical solution can be made so that it can be delivered as soon as reasonably practicable.

5. Further Questions

- 5.1. The Department recognises that a number of further questions would need to be answered if the internet-based route for communicating between the DCC and Smart Metering Systems in No-WAN premises is progressed. These questions include, amongst others:
 - i. how should the costs associated with providing the service be recovered?
 - ii. by whom would the additional CADg functionality be provided and in what circumstances?
 - iii. what agreements would the person establishing the arrangements with the consumer need to seek from them to permit use of the consumer's broadband?

⁶ The proportion of consumers who have tariffs that rely on RTS is higher in No-WAN areas than the national average.

- iv. whether there would be implications for Energy Suppliers' obligations to maintain WAN connections under their licence?
- 5.2. The Department's intention is to consult on proposals for how these and other associated matters should be resolved in Q1 2024. The Department considers that a decision on whether to progress the implementation of the underlying technical solution can be progressed separately from the resolution of these matters since the underlying cost-benefit of the solution and the security adequacy of the solution do not depend on their resolution.
- 5.3. We are not therefore specifically inviting views on these matters as part of this consultation, although should respondents wish to provide their initial views, we will take them into account when further developing our policy in these areas prior to our consultation in Q1 2024.

Question 3	Are there any initial views that respondents would like to bring to our attention on the above, or related matters?
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6. Views Invited

- 6.1. DESNZ proposes to request the DCC to complete an impact assessment of the costs of implementing the solution described above. Subject to consideration of the costs and benefits, DESNZ proposes to make changes to the DCC licence and the SEC to require the implementation of the solution. We also recognise that the solution will need to be approved by the Security Sub-Committee. We will also separately consider any wider changes that are needed to the regulatory framework in light of the solution.

Question 4	Do you have any comments on the proposal to implement the solution subject to an analysis of costs and benefits (and subject to Security Sub-Committee approval)?
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7. Next Steps

- 7.1. After taking into account the responses to this consultation, the results of the DCC impact assessment, and the views of the Security Sub-Committee, DESNZ intends to take a decision on whether to make changes to the legal framework for smart metering to require the DCC to implement its part of the proposed internet-based communications solution described above.
- 7.2. Prior to taking any such decision, we also plan to hold an industry workshop in early 2024 to discuss the costs and benefits of the solution and to hear directly industry views on the proposals.
- 7.3. If it is decided to proceed, we would consult on the high-level changes needed to the DCC licence and to the Smart Energy Code in Q1 2024. This consultation would also set out proposals for how the wider questions posed in section 5 should be progressed. A consultation on the changes to subsidiary documents would follow thereafter, with a view to trialling the arrangements towards the end of 2024.

8. Summary of Consultation Questions

Question 1	Do you have any comments on the proposed high-level solution?
Question 2	Do you have any comments on the initial scope of regulatory changes proposed?
Question 3	Are there any initial views that respondents would like to bring to our attention on the questions raised in Section 5, or related matters?
Question 4	Do you have any comments on the proposal to implement the solution subject to an analysis of costs and benefits (and subject to Security Sub-Committee approval)?

8.1. Respondents are invited to submit views, ideally giving reasons for their views, to smartmetering@energysecurity.gov.uk by 17:00 on Monday 15 January 2024.