



## Smart Energy Code

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### Stage 01: Modification Proposal

# SECMCP0025: Electricity Network Party Access to Load Switching Information

This proposal seeks to enable Electricity Network Parties to have access to information from the Smart Metering System relating to load switching carried out by Smart Meters or Smart Meter connected Devices. It also proposes that the Smart Metering System informs Electricity Network Parties when changes are made to existing load switching regimes.

The Proposer recommends that this Modification Proposal should be:



- progressed as a Path 2: Authority Determined

This Modification Proposal should:

- be assessed by a Work Group



**Medium Impact:**

***Electricity Distributors (Network Parties);***

***The DCC will be impacted, with changes required to the DCC User Interface Specification (DUIS).***

What stage is this document in the process?

|    |                             |
|----|-----------------------------|
| 01 | Modification Proposal       |
| 02 | Initial Modification Report |
| 03 | Draft Modification Report   |
| 04 | Final Modification Report   |

SECMCP0025

Modification Proposal

16<sup>th</sup> November 2016

Version 1.3

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## MODIFICATION PROPOSAL FORM V1.0

### 1. Proposer's Contact Details

#### Details of Proposer

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
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|                 |                                                                          |
|-----------------|--------------------------------------------------------------------------|
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### 2. Modification Proposal Details

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mod Submission Date:                                | 16 <sup>th</sup> November 2016                                                                                                                                                                                                                                                                                                                                                             |
| Title of Mod Proposal:                              | Electricity Network Party Access to Load Switching Information                                                                                                                                                                                                                                                                                                                             |
| Description in Detail of the Proposed Modification: | <p><b><u>Background</u></b></p> <p>Electricity Network Parties (referred to as Distribution Network Operators (DNOs) under other electricity focused industry codes), currently understand how customer load switching impacts their distribution networks. Over time they have developed an in depth knowledge of where and when load is switched and the magnitude of the load being</p> |

switched, particularly where it is critical in designated Load Managed Areas<sup>1</sup> and in areas dominated by off peak / Economy 7 load. This understanding has enabled DNOs to develop their distribution systems in an economic way, investing in network reinforcement or using alternative solutions to manage load on their networks as deemed appropriate.

DNOs are now facing new challenges associated with changes to loading on their distribution networks brought about by a number of technology changes including: new types of heating systems including heat pumps; charging of electric vehicles and major increases in customer connected micro generation. A further level of uncertainty is brought about by DNOs not knowing how individual suppliers will develop their customer offerings, e.g. new time-of-use (TOU) tariffs facilitated by the new smart metering infrastructure.

As well as having to facilitate the connection of new low carbon technologies to their networks, DNOs are required to maintain provision for existing customers who switch load for more traditional purposes, typically space and water heating systems. As smart meters are installed at locations where load is controlled directly through the metering system, suppliers will be able to change load switching regimes without reference to DNOs. Whilst this may be appropriate in most instances, there are some locations where additional controls are required. Recent changes to DCUSA schedule 8 have updated the rules associated with demand control and the avoidance of coincidence of load (see section 6 – additional information).

Scottish and Southern Electricity Networks (SSEN) has over time successfully operated Load Managed Areas across large parts of its Scottish Hydro Electric Power Distribution (SHEPD) area. This has enabled successful management of load across its network and delivered the required level of service to its customers whilst ensuring that the impact of costly network reinforcement has been minimised.

However, for DNOs to continue to have visibility of customer load switching to enable prudent and informed management and development of their networks, they need to be able to obtain information relating to load switching regimes that are managed via smart metering systems. Under current arrangements, DNOs are not advised when changes to smart meter-controlled load switching regimes are made by suppliers and current SEC governance does not permit DNOs to read the ALCS/ HCALCS event log or read auxiliary load control switch data. Having information relating to the operation of ALCS/ HCALCS and their associated switching regimes will enable DNOs to both maintain the benefits of established network management arrangements and develop new innovative solutions to assist with the planning, operation and management of their distribution networks, for example by identifying opportunities where demand side response could be an economic alternative to traditional reinforcement.

### **Proposal**

SSEN, supported by the other Electricity Distributors, are proposing that:

1. SEC parties with Electricity Distributor role are granted access to SR 6.13 in order to read ALCS/ HCALCS event logs, and so the existing ECS35f is replaced with an equivalent Use Case that adds such Electricity Distributor access.
2. SEC parties with Electricity Distributor role are granted access to SR 7.7 in order to read Auxiliary Load Control Switch Data. From a Device perspective, this would be treated as a 'Supplementary Party' read and so not require changes to the ECS61a Use Case
3. Creation of a new alert (either DCC generated (Nxx) or device generated) to be sent to the Electricity Distributor following an update to the ALCS/ HCALCS calendar on the ESME, This Alert would either come from the ESME triggered by such a change, or it would be triggered within the DCC, based on the DCC receiving a successful Response from the ESME to Use Case ECS46c.

To implement this proposal:

If the Alert were ESME generated, this would require a corresponding SMETS change.

The following changes would be required to GBCS:

<sup>1</sup> [DCUSA SCHEDULE 8 – DEMAND CONTROL](#)

1. Changes to the Chapter 20 Mapping Table i.e. to the SMETS required objects to allow Network Operator access to the ECS35f related objects
2. Replacement of GBCS Use Case ECS35f Read ALCS Event Log with an equivalent one to additionally allow Network Operator access
3. Additions to Table 16.2 to reflect the additional Device Alert, should a Device Alert be used

The following changes will be required to DUIS:

1. Service Request 6.13 to allow Network Operator access, and a corresponding change to use the replacement ECS35f Use Case. Note this would entail removal of error code E061304, which applies in this SR where 'LogToRead' = 'ALCSevent'.
2. Service Request 7.7 to allow Network Operator access
3. If a DCC Alert is to be used, addition of that Alert to DUIS

Changes may also be required to the MMC to reflect the replacement Use Case and, if used, the Device Alert

### 3. Path Type and Urgency Recommendation

Proposer's recommendations on Path Type (delete as appropriate)

Path 2

Statement for recommended Path Type:

The proposal satisfies one or more of the criteria for a Path 2 Modification and Path 2 is therefore recommended. The changes are likely to have a material impact on DNOs and their ability to manage load on their networks.

Statement of whether Proposal is intended to be Fast-Track Modification (only Panel may raise this type of modification):

N/A – Not a Fast-Track Modification.

Is the Proposal Urgent? (delete as appropriate)

No

Statement of whether Proposal should be treated as an Urgent Proposal:

N/A. This is not an Urgent Proposal.

## 4. Modification Impact Assessment

### 4.1 SEC Objectives

| Facilitation of SEC Objectives                                                                                                                                                                                                                                                                                                                                                                                                  | Tick                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>General SEC Objectives (C1.1)</b>                                                                                                                                                                                                                                                                                                                                                                                            |                                     |
| (a) the first General SEC Objective is to facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain;                                                                                                                                                                                                           | <input type="checkbox"/>            |
| (b) the second General SEC Objective is to enable the DCC to comply at all times with the General Objectives of the DCC (as defined in the DCC Licence), and to efficiently discharge the other obligations imposed upon it by the DCC Licence;                                                                                                                                                                                 | <input type="checkbox"/>            |
| (c) the third General SEC Objective is to facilitate Energy Consumers' management of their use of electricity and gas through the provision to them of appropriate information by means of Smart Metering Systems;                                                                                                                                                                                                              | <input type="checkbox"/>            |
| (d) the fourth General SEC Objective is to facilitate effective competition between persons engaged in, or in Commercial Activities connected with, the Supply of Energy;                                                                                                                                                                                                                                                       | <input type="checkbox"/>            |
| (e) the fifth General SEC Objective is to facilitate such innovation in the design and operation of Energy Networks (as defined in the DCC Licence) as will best contribute to the delivery of a secure and sustainable Supply of Energy;                                                                                                                                                                                       | <input checked="" type="checkbox"/> |
| (f) the sixth General SEC Objective is to ensure the protection of Data and the security of Data and Systems in the operation of this Code;                                                                                                                                                                                                                                                                                     | <input type="checkbox"/>            |
| (g) the seventh General SEC Objective is to facilitate the efficient and transparent administration and implementation of this Code.                                                                                                                                                                                                                                                                                            | <input type="checkbox"/>            |
| <b>Transition Objective (X1.2)</b>                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
| X1.2 The objective to be achieved pursuant to Section X: Transition is the efficient, economical, co-ordinated, timely, and secure process of transition to the Completion of Implementation.                                                                                                                                                                                                                                   | <input type="checkbox"/>            |
| <b>Charging Objectives (C1.3) (in respect of the Charging Methodology)</b>                                                                                                                                                                                                                                                                                                                                                      |                                     |
| C1.4 The First Relevant Policy Objective:                                                                                                                                                                                                                                                                                                                                                                                       | <input type="checkbox"/>            |
| <p>(a) applies in relation to Smart Metering Systems installed (or to be installed) at Domestic Premises; and</p> <p>(b) requires the Charging Methodology to ensure that Charges (other than Charges for Elective Communication Services) in respect of such Smart Metering Systems do not distinguish (whether directly or indirectly) between Energy Consumers at Domestic Premises in different parts of Great Britain.</p> |                                     |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <p>C1.5 The Second Relevant Policy Objective is that, subject to compliance with the First Relevant Policy Objective, the Charging Methodology must result in Charges that:</p> <ul style="list-style-type: none"> <li>(c) facilitate effective competition in the Supply of Energy (or its use) under the Electricity Act and the Gas Act;</li> <li>(d) do not restrict, distort, or prevent competition in Commercial Activities that are connected with the Supply of Energy under the Electricity Act and the Gas Act;</li> <li>(e) do not deter the full and timely installation by Energy Suppliers of Smart Metering Systems at Energy Consumers' premises in accordance with their obligations under the Energy Supply Licence; and</li> <li>(f) do not unduly discriminate in their application and are reflective of the costs incurred by the DCC, as far as is reasonably practicable in all of the circumstances of the case, having regard to the costs of implementing the Charging Methodology.</li> </ul>                | <input type="checkbox"/> |
| <p>C1.6 The Third Relevant Policy Objective is that, subject to the Compliance with the First and Second Relevant Policy Objectives, the Charging Methodology must result in Charges that:</p> <ul style="list-style-type: none"> <li>a) facilitate effective competition in the Supply of Energy (or its use) under the Electricity Act and the Gas Act;</li> <li>b) do not restrict, distort, or prevent competition in Commercial Activities that are connected with the Supply of Energy under the Electricity Act and the Gas Act;</li> <li>c) do not deter the full and timely installation by Energy Suppliers of Smart Metering Systems at Energy Consumers' premises in accordance with their obligations under the Energy Supply Licence; and</li> <li>d) (d) do not unduly discriminate in their application and are reflective of the costs incurred by the DCC, as far as is reasonably practicable in all of the circumstances of the case, having regard to the costs of implementing the Charging Methodology.</li> </ul> | <input type="checkbox"/> |

Statement of how the proposed variation would better facilitate the achievement of the SEC Objectives:

This modification facilitates General SEC Objectives (C1.1) (e).

The modification facilitates SEC Objective (C1.1) (e) by facilitating innovation in the design and operation of Electricity Networks

Having access to smart meter data associated with the operation ALCS/ HCALCS will enable Electricity Distributors to develop innovative solutions to assist with the planning, operation and maintenance of their networks. This in turn will help them maintain and develop economical, efficient and co-ordinated systems of electricity distribution as required by their distribution licences.

## 4.2 Impacts

Statement of impact on Greenhouse Gas Emission:

The proposed variation would have no material impact on Greenhouse Gas Emissions.

Statement of impact on which parts of the SEC would need amending (e.g. proposed legal drafting):

As previously, the likely changes are to:

- SMETS (depending on solution option for the new Alert)
  - GBCS
  - DUIS
  - MMC

Potentially changes to testing related documents may also be required, to reflect the changes to Service Requests

Statement of impact on likely changes to other Energy Codes:

No other Energy Codes will be impacted

Statement of impact on likely Party Categories:

|                             |                                     |                        |                          |
|-----------------------------|-------------------------------------|------------------------|--------------------------|
| Large Supplier Parties      | <input type="checkbox"/>            | Small Supplier Parties | <input type="checkbox"/> |
| Electricity Network Parties | <input checked="" type="checkbox"/> | Gas Network Parties    | <input type="checkbox"/> |
| Other SEC Parties           | <input type="checkbox"/>            |                        |                          |

Only Electricity Network Parties need be affected by this change, since suppliers already have access to the SR's where Electricity Distributor access is requested. For the new alert this will only be sent to Electricity Distributors.

Statement of impact on Consumers:

There is no expected direct impact on Consumers although permitting Electricity Distributors to access this information will enable them to develop more economical distribution networks and Consumers will benefit from reduced Distribution System Use of System charges.

Statement of impact on Central Systems:

|                                                   |                                     |                                                                |                                     |
|---------------------------------------------------|-------------------------------------|----------------------------------------------------------------|-------------------------------------|
| DCC Systems                                       | <input checked="" type="checkbox"/> | User Systems                                                   | <input checked="" type="checkbox"/> |
| Smart Metering Systems and/or Communications Hubs | <input checked="" type="checkbox"/> | Other (i.e. on Smart Metering Key Infrastructure, or security) | <input type="checkbox"/>            |

This impacts DUIS so has a material impact on the DCC themselves and the Parties using the SRs in question. It also affects ESME.

## 5. Proposed Timetable

| Proposed Timetable for Modification Proposal: |                                |
|-----------------------------------------------|--------------------------------|
| Stage                                         | Dates                          |
| Modification Proposal Raised                  | 16 <sup>th</sup> November      |
| Panel reviews Initial Modification Report     | 23 <sup>rd</sup> December 2016 |
| Refinement Process                            | December 2016 – April 2017     |
| Modification Report to Panel                  | May 2017                       |
| Change Board vote                             | May 2017                       |
| Authority Decision                            | Early June 2017                |
| Implementation                                | Late June 2018                 |

## 6. Additional Information

### Additional information:

It has been recognised that the exchange of “traditional” metering systems, including those where load is controlled by the Radio Teleswitch System, with smart meters will remove any direct opportunity that DNO’s have to control customer load switching in order to minimise the net effect of customers load in the distribution system. As a consequence the management of the coincidence of load on electricity distribution networks has become a growing area of concern for DNO’s.

In addition the country’s transitions to a lower carbon economy where there is an increase in new low carbon technologies (heat pumps, electric vehicles and micro generation) may result in a significantly increased loading on electricity distribution networks. It is likely that some of this load, particularly electric vehicle load, will be managed by suppliers, tariffs linked to ALCS. If the DNO is able to better understand the load that is being switched on the network, they will be able to develop innovative alternatives to reinforcement e.g. DSM.

In order to manage growing concerns and to preserve some influence over network loading associated with customer load switching SHEPD proposed changes DCUSA schedule 8 in February 2014. The change proposal was assigned the reference DCP204. Further information from DCUSA relating to DCP204 can be found [here](#).

In February 2016 Ofgem made their determination in favour of the changes proposed by the DCP204 working group, their determination and the reasoning for their decision can be found [here](#).

Giving Electricity Distributors access to the functionality proposed in this modification will ensure that DNO’s are able to monitor supplier activity and assist in the managing the requirements of DCUSA schedule 8.

This proposal being made by SSEN is supported by other Electricity Network Parties. Support for the proposal was sought and received at the ENA Smart Meter Steering Group. A number of Electricity Network parties contributed to the drafting of this Modification Proposal.

## APPENDIX 1: Glossary of Terms

The table below illustrates useful definitions of the terms used in this form. If you require any further information please contact the [SECAS Helpdesk](#).

| Term                     | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCC Systems              | <p>Means the Systems used by the DCC and/or the DCC Service Providers in relation to the Services and/or this Code (Section A1, SEC Stage 3.0).</p> <p>The Proposer may wish to consider anticipated impacts on the DCC Licensee's enterprise systems (e.g. billing) or the Data Service Provider or Communications Service Providers.</p>                                                                                                                                                                                                                                                                                                                                              |
| Fast-Track Modifications | <p>Means Modification Proposals (Path 4 Modifications) to correct typographical or other minor errors or inconsistencies to the Code (Section D2.8, SEC Stage 3.0).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| General SEC Objectives   | <p>Has the meaning given to that expression in Section C1 (SEC Objectives) (Section C1, SEC Stage 3.0).</p> <p>The SEC Objectives are those objectives that the SEC has been designed to achieve.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Greenhouse Gas Emission  | <p>Means emissions of Greenhouse Gases, as defined in section 92 of the Climate Change Act 2008 (Section A1, SEC Stage 3.0).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Other Systems            | <p>Other systems identified in the section Statement of Impact on Central Systems.</p> <p>The Proposer may wish to consider Prepayment vendors, Electricity Central Online Enquire Service (ECOES), Single Centralised Online Gas Enquiry Service (SCOGES), BSC Settlement Systems, etc.</p>                                                                                                                                                                                                                                                                                                                                                                                            |
| Path Type                | <p>Means the Modification Path to be followed in respect of a Modification Proposal. The type of Path will depend upon the nature of the variation proposed in the Modification Proposal (D2.1, SEC Stage 3.0). The four Modification Paths under the SEC are:</p> <ul style="list-style-type: none"> <li>• <b>Path 1 Modifications: Authority-led</b> (Section D2.4/D2.5, SEC Stage 3.0)</li> <li>• <b>Path 2 Modifications: Authority Determination</b> (Section D2.6, SEC Stage 3.0)</li> <li>• <b>Path 3 Modifications: Self-Governance</b> (Section D2.7, SEC Stage 3.0)</li> <li>• <b>Path 4 Modifications: Fast-Track Modifications</b> (Section D2.8, SEC Stage 3.0)</li> </ul> |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Party Category         | <p>Means one of the following categories:</p> <ul style="list-style-type: none"> <li>(a) the Large Supplier Parties collectively;</li> <li>(b) the Small Supplier Parties collectively;</li> <li>(c) the Electricity Network Parties collectively;</li> <li>(d) the Gas Network Parties collectively; or</li> <li>(e) the Other Sec Parties collectively.</li> </ul> <p>(Section A1, SEC Stage 3.0).</p>                                                                                                                                                                                                                                                                                                                                                                                             |
| Smart Metering Systems | <p>Means a system installed at premises for the purposes of the Supply of Energy to the premises that, on the date it is installed, as a minimum;</p> <ul style="list-style-type: none"> <li>(a) consists of the apparatus identified in;</li> <li>(b) has the functional capability specified by; and</li> <li>(c) compiles with the other requirements of,</li> </ul> <p>the Smart Metering Equipment Technical Specification that is applicable at the date (Section A1, SEC Stage 3.0).</p> <p>In summary, this includes:</p> <ul style="list-style-type: none"> <li>• Gas Smart Metering Equipment;</li> <li>• Electricity Smart Metering Equipment;</li> <li>• In Home Display;</li> <li>• Prepayment Interface Device; and</li> <li>• HAN Connected Auxiliary Load Control Switch.</li> </ul> |
| Urgent Proposal        | <p>Means a Modification Proposal deemed an Urgent Proposal where the Authority directs the Panel to treat the Modification Proposal as an urgent Proposal (whether following a referral by the Panel pursuant to Section D4.5, or at the Authority's own initiation) (Section D4.5/D4.6, SEC Stage 3.0).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| User Systems           | <p>Means, in respect of each User (DCC User), the Systems of that User (including, where relevant, those of its Supplier Nominated Agent) used in relation to the Services and/or Smart Metering Systems (Section A1, SEC Stage 3.0).</p> <p>The Proposer may wish to consider Suppliers; Network Operators; Registration Data Providers; Other DCC Users (e.g. Authorised Third Parties / Switching Sites); Supplier Nominated Agents.</p>                                                                                                                                                                                                                                                                                                                                                          |