



## **DCUSA CONSULTATION**

### **DCP 204 - Smart Metering Related Amendments to Schedule 8**

## 1 Purpose

- 1.1 The Distribution Connection and Use of System Agreement (DCUSA) is a multi-party contract between electricity Distributors and electricity Suppliers and large Generators. Parties to the DCUSA can raise Change Proposals (CPs) to amend the Agreement with the consent of other Parties and (where applicable) the Authority.
- 1.2 This document is a Consultation issued to DNO, IDNO, Suppliers, Citizens Advice Bureau, ELEXON, any other interested Parties and the Authority in accordance with Clause 11.14 of the DCUSA seeking industry views on DCP 204 – ‘Smart Metering Related Amendments to Schedule 8’ Respondents are invited to consider the questions set out below and submit comments using the form provided as Attachment 1.
- 1.3 Responses should be submitted online or emailed to [DCUSA@electralink.co.uk](mailto:DCUSA@electralink.co.uk) by **Friday 5 September 2014**.

## 2 Background of DCP 204 - Smart Metering Related Amendments to Schedule 8

- 2.1 Schedule 8 relates to Demand Control measures which can be initiated by Distributors to preserve security of supply and integrity of their networks and/or to avoid or minimise network investment. For network operators, the ability to manage load switching arrangements is central to the effectiveness of this Schedule.
- 2.2 Discussions regarding the implications of the change of switching technology between Ofgem, DNOs and Suppliers, and other discussions at an Energy Networks Association (ENA) Working Group and the Smart Grids Forum Work stream 6 sub group have resulted in DCP 204 being raised by Scottish Hydro Electric Power Distribution plc. For example, it is possible during the Smart Metering roll out that customers may move to different time of use tariffs at the same time as receiving benefits of the new metering technology.
- 2.3 The intent of this Change Proposal (CP) is to amend DCUSA Schedule 8 to reflect the migration of load switching technologies deployed by Suppliers in customer premises from established devices, such as radio teleswitching via the Radio Teleswitch Service (RTS) and timeswitches, to smart metering technologies. The legacy switching devices will become redundant following the completion of the smart metering roll out.
- 2.4 The CP seeks to replicate the existing functionality afforded by existing metering systems (around tariff time switching and load switching) to network

operators in a Smart Metering regime and also seeks to clarify and/or simplify aspects of the Schedule.

- 2.5 All Parties should note that the original Schedule 8 was developed prior to the inclusion of Section 2b of DCUSA which caters for Distributor to Distributor relationships. Consideration should be given to the arrangements in Schedule 8 in relation to the expansion of the Licensed Distributor Network Operator market.

## 2.6 Replacing SSCs with Load Switching Regimes

References to Standard Settlement Configurations (SSCs) within Schedule 8 have been removed and replaced with Load Switching Regimes, and a definition of Load Switching Regime has also been provided in the revised legal text. These amendments have been made to reflect the additional load management functionality that smart meters provide, and which could be utilised to support the demand control processes set out in Schedule 8. This includes, but is not limited to, functions such as randomisation and load limiting that could be used to control demand in Load Managed Areas.

## 2.7 Simplification and clarification of process and notices

The current notices defined in Schedule 8 and the differences between each type of notice are not currently very clear. The proposed legal text has been revised to replace Provisional SRNs with an advisory notice and remove reference to a 'Firm' SRN. The revised proposed legal text for Schedule 8 is structured in way that describes an escalating process supported by the different types of notice.

The following table describes the notices that can be issued by DNOS and the associated obligations, which are reflected in the revised legal text:

Notice	Description	Obligations
Advisory notice	Issued (as per clause 4.2) as an early warning of potential operational constraints on an area of the network.	None specified
Load Managed Area Notice	Issued (as per clause 5.1) as a formal notification that changes in demand may affect the security of Supply.	<ul style="list-style-type: none"> <li>When replacing any metering equipment, Suppliers must ensure that the replacement equipment replicates the load switching times of the equipment being removed.</li> <li>Where the Supplier is not able to replicate the current switching times or where they wish to change those times they must get the permission of the DNO before doing so.</li> </ul>
Security Restriction Notice (SRN)	Issued (as per clause 6.1) as a formal notification that changes	As for Load Managed Area Notices, additionally;: <ul style="list-style-type: none"> <li>The DNO may request that</li> </ul>

	in demand will affect the security of Supply.	Suppliers make changes to Load Switching Regimes and/or the Randomised Offset Limit in the affected area to reduce the coincidence of demand in the specified area.
Emergency Security Restriction Notice <sup>1</sup> (Emergency SRN)	Issued (as per clause 7.1) as a formal notification that there is an immediate risk to the security of Supply.	As for SRNs, additionally: <ul style="list-style-type: none"> <li>The DNO may also issue a Compliance Notice.</li> </ul>
Compliance Notice	Issued (as per clause 6.6 & 7.6)	<ul style="list-style-type: none"> <li>DNO requests the supplier to change, at its own cost, Load Switching Regimes and/or the Randomised Offset Limit to another that shall not have a material effect on the security of supply,</li> <li>take such action that the DNO considers reasonable</li> <li>The DNO may, with no prior notice, de-energise metering points in order to maintain the security of supply.</li> </ul>

It should be noted that the issue of an Emergency Security Restriction Notice need not restricted to Load Managed Areas.

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<sup>1</sup> This notice can be served at any time i.e. it is not just restricted to Load Managed Areas.

## 2.8 Randomisation

The introduction of smart metering and the Data and Communications Company (DCC) will result in changes to how remote load control and switching instructions (for both static and dynamic arrangements) are issued. Static switching is currently achieved using a mixture of technologies, including; time switches, programmable meters and RTS. Dynamic switching is principally achieved by using the RTS. Across GB approximately 5.6 million customers rely on existing technologies to change tariff registers. Many of these devices also directly switch the customers load at the same time that the tariff rate changes thus ensuring that heating and water heating take advantage of cheaper rate energy. For approximately 1.8 million customers their electrical storage and immersion heating is controlled remotely via the RTS.

The RTS is operated by the ENA on behalf of Distribution Companies and typically used to control the switching of Non Half Hourly tariff registers and in many cases directly switch customer's load. Messages are sent via the BBC's 198 kHz long wave network to a teleswitch device within the customer's property which in turn switches metering registers and may directly control customers load.

Under proposed smart arrangements, the DCC will process requests from Suppliers to remotely switch registers and control load and will send commands to be applied by the relevant smart meter.

Existing load which is currently controlled by RTS equipment, time switches and programmable meters will effectively become synchronised as a result of the increased accuracy of smart meters. This will lead to a reduction in the diversity of load switching that the current arrangements deliver (+/- 3.5 minutes either side of the set switching time for RTS controlled devices, unknown for other equipment). Unless mitigating action is taken network operators (at distribution and grid level) are likely to see additional contributions to network loading around programmed load switching times.

There are also a range of other reasons why unnecessary load coincidence needs to be avoided and why clarity is required for timeswitching arrangements in smart. These reasons include:

- DNOs need to minimise voltage step change issues associated with simultaneous switching of material load;
- DNOs need to maximise network utilisation by staggering switching times to allow load switched on earlier to fall or drop off before switching on additional load;
- NGET and generators need a predictable load pick up without any material step changes;
- Customers need to know the times when the off peak load is switched and assurance that load switching coincides with tariff/ rate change (this is a requirement in SMETS);

- Suppliers and Elexon need to know the times when the off peak load is switched; and the total volume of load switched in each time period for supply volume allocation purposes. These aspects are being considered by the Profiling and Settlement Review Group (PSRG) including via its consultation on Settlement of Dynamically Switched Meters [http://www.elexon.co.uk/wp-content/uploads/2014/06/PSRG33\\_01-Dynamic-Switching-Consultation-Response-summary.pdf](http://www.elexon.co.uk/wp-content/uploads/2014/06/PSRG33_01-Dynamic-Switching-Consultation-Response-summary.pdf).
- Unnecessary load coincidence around timeswitching can be avoided through the application of timeswitching randomisation to smart metering systems. The working group considers that the key features of appropriate randomisation should include:
- Randomisation must not be over a period greater than the interval between defined settlement periods (i.e. 30 minutes);
- Hardcoded limits (in SMETS2 or the GBCS) shouldn't create future restriction in the functionality;
- DNOs should agree both the basic switching times and the Randomised Offset Limit with Suppliers via DCUSA;
- The applied Randomised Offset criteria must be capable of amendment as required to satisfy the future requirements of smart grids. The process for agreeing any changes should be via DCUSA;
- The Randomised Offset Limit applied should follow a generic consistent set of rules across the whole of GB. In Load Managed Areas, different rules may be required and these should be governed via DCUSA;
- Rules need to be applied to all switching regime types i.e. static, semi-static and dynamic regimes; and
- In future there may be a need to apply randomisation to "inferred" switching times, i.e. where load is affected by customer's response to a price signal via future time-of-use tariffs.

Attachment 5 to this consultation is a paper entitled Randomisation Offset Limit. This document was created by the ENA Smart Metering Steering Group and presented to the DECC SMIP Technical and Business Design Group, its purpose is to explore the requirements associated with the application of a randomised offset limit as applied to smart meters. The document explains why randomisation is required and provides options explaining how it could be applied. The recommendation contained within this paper is that the Randomised Offset Limit should be set in the range 600 seconds to 1799 seconds. The draft legal text refers to setting the randomised offset limit to a value of no less than 600 seconds (10 minutes). The working group feel that at this time this value is sufficient to ensure that coincidence of demand is adequately managed, however the opinions of the wider DCUSA community are sought on this issue.

### 3 Working Group Assessment of DCP 204

- 3.1 The DCUSA Panel established a Working Group to assess DCP 204. This Working Group consists of DNO, Suppliers and Ofgem representatives.

### 4 Assessment against the DCUSA Objectives

- 4.1 For a DCUSA Change Proposal to be approved it must be demonstrated that it better meets the DCUSA Objectives. There are five General DCUSA Objectives and five Charging Objectives. The full list of objectives is documented in the CP form provided as Attachment 2.
- 4.2 The Working Group has assessed the CP against the DCUSA objectives and the Working Group members agree that the following DCUSA Objective is better facilitated by DCP 204.
- **General Objective One** - The development, maintenance and operation by the DNO Parties and IDNO Parties of efficient, co-ordinated, and economical Distribution Network
- 4.3 This objective is better facilitated as it ensures that where Smart Meters are being rolled out specifically in Load Managed Areas Network Operators will maintain the ability to influence the timing of load switching.
- 4.4 The timing of load switching is an essential tool for network operators as a means of maintaining security of supply in certain circumstances. The potential for these capabilities to be used to avoid or defer network reinforcement can provide network operators with an economic and efficient alternative to network investment in some situations.

### 5 DCP 204 – Smart Metering Related Amendments to Schedule 8 – Legal Drafting

- 5.1 The DCP 204 legal text is provided as Attachment 3. This text amends DCUSA Schedule 8.
- 5.2 In order to achieve the intent of the CP, the main elements of the draft legal text proposes that:
- 1) Existing RTS and timeswitch switching times (and other switching characteristics) are replicated in a Smart Meter on installation, unless otherwise agreed between the Supplier and Distributor, within Load Managed Areas.
  - 2) Smart Meter installations are deployed in such a manner, through use of randomised offset capabilities and management of load switching times, that coincidence of load switching is minimised. The proposed legal drafting requires that a Randomised Offset Limit is applied to all smart meters that are installed. The proposed legal text mandates the setting of

a Randomised Offset Limit for all smart meters, and not just those that have directly switched load, as a smart meter can enable customers to automatically switch their own load in response to changes in price (for example on multi-rate tariffs). To mitigate the risk of coincidence of demand there is a need to randomise the switching times for tariffs as well as controlled load and the obligation of setting the Randomised Offset Limit for smart meters achieves this.

- 3) Smart Meter switching times are particularly managed in Load Managed Areas, including changes to existing load switching regimes and new installations.

5.3 The proposals are based on the existing structure of Schedule 8 but seek to specifically refer to the key features and characteristics of load switching devices which are of importance to network operators.

5.4 The text also aims to simplify the process of 'Security Restriction' notifications to Suppliers, by combining the current 'Provisional' and 'Firm' Security Restriction process into one.

5.5 The proposed drafting of the legal text does not yet consider distributor to distributor obligations, information is sought in this consultation regarding these requirements.

## 6 Implementation Date

6.1 The proposed implementation date for DCP 204 is 1 April 2015.

## 7 DCP 204 – Consultation Questions

7.1 The Working Group is seeking responses to the following questions.

Question Number	Party	Question
1	All	Do you understand the intent of the CP?
2	All	Are you supportive of the principles established by this proposal?
3	All	Are there any unintended consequences of this proposal?
4	All	Do you consider that the proposal better facilitates the DCUSA general objectives? Please provide your rationale.
5	All	This proposal requires that randomised offset rules are applied to all smart metering systems. Do you agree with this proposal? If not, please provide your rationale.



6	All	Which is the most appropriate Industry Code for the rules associated with randomised offset to be governed under?
7	All	What are your views regarding the value (in seconds) that should be defined in DCUSA as the minimum randomised offset limit?
8	All	Do you think there may be more Load Managed Areas in the future, potentially due to the increased connection of low carbon technologies? Are the proposed changes to the legal text sufficient to manage any associated issues that may arise?
9	All	Would you see value in creating a central register of Load Managed Areas e.g. on the DCUSA website?
10	All	Do you agree that Provisional SRNs should be replaced by an advisory notice as proposed by the Working Group? An alternative would be that no notice is issued at this stage, what is your preference?
11	All	Do specific considerations for new connections need to be included in Schedule 8? If yes, what additions are required?
12	All	Should the definition of Capacity Headroom remain as "a margin of 15% below the maximum capacity of the Distribution System supplying a group of Customers"? If not, what should it be and why?
13	All	Should there be a limit on the frequency at which network operators can request suppliers to change load switching times?
14	All	In paragraph 6.4 of the legal text is 20 working days an appropriate amount of time? If not, what should this period be?
15	All	Are you supportive of the proposed implementation date of 1 April 2015? If no, please propose an alternate date and explain your rationale.
16	All	Are there any additional smart meter related technical, operational or governance issues that need to be considered by the working group (in the context of load switching and time switching of smart meters)? If yes,

		please provide additional information.
17	All	Are there any specific issues that need to be considered relating to the withdrawal of existing services/ technologies, i.e. RTS, Cyclo Control etc. If yes, please provide additional information.
18	All	Sections 5.3, 6.3 and 7.3 of the legal text detail the information that should be provided by a DNO issuing Notices. Is this information sufficient, if not what additional information is required?
19	All	The Working Group considers that an adequate level of detail to summarise the nature of any Load Managed Area would be: Date Notified, postcode District/out-code (e.g. LS3) and Indicative End Date (if known) do you agree?
20	All	Should there be standard templates for: <ul style="list-style-type: none"> <li>- Load Managed Area Notices</li> <li>- Security Restriction Notices</li> <li>- Emergency Security Restriction Notices</li> </ul> If yes, should this be in DCUSA schedule 8?
21	All	Section 11 of the legal text places an obligation on DNO's to review LMA, SRN and Emergency SRN notices every six months, is this period appropriate? If not can you please provide an alternative period and explain your rationale.
22	All	It is proposed that reference to SSCs is removed in the legal text and has been replaced by reference to Load Switching and Load Switching Regimes. Do you agree with these changes, if not please provide your rationale.
23	All	Do you have any other comments on the proposed legal text?
24	All	Are there any alternative solutions or matters that should be considered within the Change Proposal?

Question Number	Party	Question
25	DNO/IDNO	Do Load Managed Areas currently exist on your network,

		and where are they located?
26	DNO/IDNO	What additional obligations does there need to be within Schedule 8 of DCUSA to notify other distributors that are associated or may become associated with Load Managed Areas and the other distributor obligations to notify Suppliers connected to their network?
27	DNO/IDNO	How often are emergency SRNs used?

<b>Question Number</b>	<b>Party</b>	<b>Question</b>
28	Suppliers	Are you aware of the existence of load managed areas and do you understand where they are located?
29	Suppliers	What would a supplier do when they get an advisory notice?
30	Suppliers	When do suppliers expect to commence removing existing equipment that directly controls customers load and replacing it with smart meters? Are there any specific issues relating to "timing" that need to be considered in the development of this proposal.

<b>Question Number</b>	<b>Party</b>	<b>Question</b>
31	DCC	What information will you need from DNO's regarding the location of Load Managed Areas to enable you and your service providers, especially the communications service providers, to ensure that there is adequate WAN provision in the locations affected?
32	DCC	How soon will it be known where enduring areas of no WAN will be? How will this information be provided to DCC Users and other interested industry parties?

- 7.2 Responses should be submitted using Attachment 1 to [dcusa@electralink.co.uk](mailto:dcusa@electralink.co.uk) no later than **Friday 5 September 2014**.
- 7.3 Responses, or any part thereof, can be provided in confidence. Parties are asked to clearly indicate any parts of a response that are to be treated confidentially.

## **8 NEXT STEPS**

- 8.1 Responses to the Consultation will be reviewed by the DCP 204 Working Group who will use the responses to aid them in the progression of the CP.
- 8.2 If you have any questions about this paper or the DCUSA Change Process please contact the DCUSA by email to [DCUSA@electralink.co.uk](mailto:DCUSA@electralink.co.uk) or telephone 020 7432 3016.

## **APPENDICES**

- Attachment 1 – Response Form
- Attachment 2 – DCP 205 CP Form
- Attachment 3 – Proposed Legal Text
- Attachment 4 – Ofgem Paper ([The state of the market for customers with dynamically teleswitched meters](#))
- Attachment 5 – ENA Paper (Randomisation Offset Limit)