



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

26 March 2018

Dear Colleague,

Consultation on proposed amendments to the Smart Energy Code related to the contents of the SMETS1 Pending Product Combinations list and Cryptographic Processing in respect of SMETS1 Devices

1. This consultation seeks views from stakeholders on proposed amendments to Section G of the Smart Energy Code (SEC) related to Cryptographic Processing in respect of SMETS1 Devices, and to Section F of the SEC in relation to the contents of the SMETS1 Pending Product Combinations list.

Background

2. A number of energy suppliers have been installing first-generation (SMETS1) smart meters for their customers. Like second-generation (SMETS2) smart meters, SMETS1 meters provide consumers with the benefits of accurate bills and near real-time energy consumption information. However, SMETS1 meters currently operate via data and communications systems put in place by individual energy suppliers, as opposed to a single data and communications infrastructure which is accessible to all energy suppliers. As such, SMETS1 meters installed by one energy supplier are not always compatible with another energy supplier's systems, and may lose smart functionality when a consumer switches supplier.
3. Enrolment of SMETS1 meters on the single data and communications infrastructure of the Data Communications Company (DCC) will rectify this and will provide a number of benefits to consumers and the energy market, in particular:
 - Retention of smart services for consumers when they switch energy supplier.
 - Reduction of stranding risk for existing SMETS1 assets.¹

¹ Namely the risk of suppliers replacing their SMETS1 meters with SMETS2 meters before the SMETS1 meter's end of life.

- The application of a number of additional security controls core to the national data and communications service, such as Threshold Anomaly Detection, would be extended to these meters.
 - Efficiency gains from rationalisation of smart metering interfaces, and processes within energy supplier businesses.
4. In October 2018, we confirmed our decision to require the DCC to provide SMETS1 services to four out of six SMETS1 meter sets, representing around two thirds of the total SMETS1 meter population, in order to ensure interoperability for consumers. The four meter groups consist of Aclara, Honeywell Elster, Landis+Gyr and Itron². On 4 March 2019 we published a subsequent consultation on whether to require the DCC to provide SMETS1 services in respect of the Secure meter set³ representing the vast majority of the residual meter sets.

Proposed Section G amendments

5. To enable the enrolment of SMETS1 meters, the DCC has been negotiating with service providers to agree the basis on which they will provide services to the DCC. The DCC's starting position has been to procure services on the basis of the existing requirements that are set out in the SEC. However, we recognise that the technical solutions required to enrol SMETS1 meters may mean that amendments to existing SEC provisions are required in order to avoid incurring unnecessary additional time and cost in the delivery of a DCC SMETS1 Service, while maintaining secure communications with SMETS1 Devices.
6. The DCC has identified that Section G2.44 of the SEC, which describes how Cryptographic Processing is carried out in respect of both SMETS1 and SMETS2 Devices, is one such area that would require amendment to enable SMETS1 Devices to be operated without requiring substantial changes to systems and devices (which would, in turn, have significant consequential impacts on the costs and timescales for delivering enrolment).
7. BEIS is therefore proposing to modify Section G2.44 of the SEC such that the requirement to ensure that Cryptographic Processing is carried out within Cryptographic Modules which are compliant with the FIPS 140-2 Level 3 standard only applies in relation to DCC communications with SMETS1 Devices where:
- a) The Cryptographic Processing is carried out by a DCO and involves the use of a SMETS1 Symmetric Key;
 - b) The Cryptographic Processing involves the use of a DCC Private Key to establish Transport Layer Security (TLS) in order to communicate with a SMETS1 Device; or
 - c) The Cryptographic Processing involves the use of a SMETS1 Symmetric Key and is carried out by a SMETS1 Service Provider, except where:
 - i. the Cryptographic Processing is carried out to generate a Command to "add credit" to a SMETS1 Device;

² See: <https://www.gov.uk/government/consultations/enrolment-of-smets1-meter-cohorts-with-the-data-communications-company>

³ See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/783149/enrolment-secure-smets1-meters-in-dcc.pdf

- ii. the SMETS1 Symmetric Key is used to generate an Instruction to a target Device that is identified as a Category 1 Device in the SMETS1 Supporting Requirements document; or
 - iii. the SMETS1 Symmetric Key is only valid for the duration of a single Application Association and the target Device is identified as a Category 2 Device in the SMETS1 Supporting Requirements document.
8. We are additionally proposing to modify Section G2.45 of the SEC such that all Cryptographic Processing that does not fall within the scope of Section G2.44 will need to be carried out within Cryptographic Modules established in accordance with the DCC's Information Classification Scheme.
9. We have proposed consequential amendments to Section A of the SEC in order to:
 - Define Application Association and Authentication Key with reference to their meanings in the DLMS COSEM Green Book.
 - Define SMETS1 Symmetric Key as an Authentication Key or a symmetric key which is used to process communications with SMETS1 Devices.
 - Define Transport Layer Security as TLS1.2 as defined in the Internet Engineering Task Force (IETF) Request for Change 5246.
 - Exclude the storage of encrypted Secret Key Material used in relation to communications with a SMETS1 Device from the definition of Cryptographic Processing.
 - Modify the definition of Instruction such that it includes communications generated by a DCO.
10. We anticipate that the DCC will consult on the necessary amendments to the SMETS1 Supporting Requirements document shortly in order to clarify which Devices are considered Category 1 Devices for the purposes of the criteria described above, and which are considered Category 2 Devices. However, for the purposes of this consultation we would anticipate that:
 - Subject to the outcome of the 4 March consultation on whether to require the DCC to provide SMETS1 services in respect of the Secure meter set, all Secure SMETS1 Devices will be considered Category 1 Devices
 - All Aclara, Elster, Itron, and L+G SMETS1 Devices will be considered Category 2 Devices
11. Following engagement with the DCC, we consider that the changes proposed by this consultation would enable secure communications to the SMETS1 Devices to be achieved without requiring the DCC to undertake additional system re-design work, which would have material consequential impacts on the time and cost of delivering enrolment. The DCC has advised that the proposed changes are already reflected in its SMETS1 security risk assessment.
12. We propose that both of these changes would, as part of the consultation process, be subject to confirmation from NCSC that the proposals are appropriate from a cryptographic communications perspective, and further engagement with the SEC Panel Security Sub-Committee (SSC).

Proposed Section F amendments

13. In June 2018 we concluded⁴, following consultation with stakeholders, that the DCC should be required to maintain, and provide to the Panel for publication, a list of the SMETS1 Device Model combinations in relation to which it is developing and/or testing its ability to successfully process SMETS1 Service Requests and relevant SMETS1 Alerts. This list is known as the SMETS1 Pending Product Combinations.
14. We additionally concluded that, as a result of the conflicting views expressed by stakeholders, further consideration was required in relation to the information that may be shared publicly about devices that are undertaking or have failed to complete SMETS1 Pending Product Combination Tests. We consequently asked the DCC to consider this matter further and propose any associated rules or procedures for inclusion in the Enduring Testing Approach Document. The DCC has subsequently consulted and concluded upon a provision in the Enduring Testing Approach Document (clause 9.3), re-designated by BEIS on 13 March 2019⁵, which requires the DCC to not add a Device Model combination to the SMETS1 Pending Product Combinations where it has been informed by the relevant Testing Participant that the Manufacturer name is to be kept confidential.
15. We are now proposing to make a consequential change to Section F2.10A of the SEC to clarify that the DCC should not add a Device Model combination to the SMETS1 Pending Product Combinations where the relevant Testing Participant has indicated, pursuant to clause 9 of the Enduring Testing Approach Document, that such information should be treated as confidential.

Consultation questions

16. We would welcome views from stakeholders on the question below:

Consultation Questions	
1	Do you agree with the proposed amendments to Section G of the SEC in relation to Cryptographic Processing in respect of enrolled SMETS1 Devices?
2	Do you agree with the proposed amendment to Section F of the SEC in relation to the contents of the SMETS1 Pending Product Combinations list?

17. Every effort has been made to ensure that the explanatory text in this consultation reflects the legal drafting included at Annexes A and B; however the legal drafting should be considered to be definitive in the event that there is an inconsistency between it and the explanatory text. Where terms defined in the SEC (or in licence conditions) are used in this consultation document, they are capitalised.

⁴ See: <https://smartenergycodecompany.co.uk/latest-news/government-response-to-the-march-2018-consultation-on-regulatory-changes-to-enable-provision-of-a-smets1-service-by-the-dcc/>

⁵ See: <https://smartenergycodecompany.co.uk/latest-news/sec-version-6-9-designated/>

18. Subject to consideration of consultation responses and the parliamentary process, the proposed amendments will be incorporated into the regulatory framework using the Secretary of State's Section 88 Energy Act 2008 powers.

Responding to this consultation

19. Responses to this consultation should be submitted no later than 16 April 2018.

20. Comments should be submitted to smartmetering@beis.gov.uk or addressed to:

Smart Metering Implementation Programme – Regulation,
Department for Business, Energy & Industrial Strategy,
2nd Floor, Spur
1 Victoria Street,
London SW1H 0ET

21. Information provided in response to this consultation, including personal data, may be subject to publication or release to other parties, or to disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

22. Individual responses to this consultation may be published and you should therefore let us know if you are not content for your response or any part of it to be published. If you indicate that you do not want your response published, we will not publish it automatically but it could still be subject to information requests as detailed above. If you do not want your individual response to be published, or to otherwise be treated as confidential, please say so clearly in writing when you send your response to the consultation. For the purposes of considering access to information requests, it would also be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

Kind regards,



Duncan Stone
Head of Delivery
Smart Metering Implementation Programme

List of Annexes to this letter

Annex A	Legal text of proposed amendments to Section G of the SEC
Annex B	Legal text of proposed amendments to Section F of the SEC