



# Smart Metering Implementation Programme

## Smart Metering System & Equipment Testing - Consultation

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This document can be found on the DECC section of the gov.uk website.

Responses are due by 24<sup>th</sup> September 2013

Published by the Department of Energy and Climate Change

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# General Information

## Purpose of this Document

This Consultation Document seeks views on the testing of smart metering systems and equipment under the Smart Energy Code. Responses are sought by 24 September 2013.

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**Document reference:** URN 13D/238 2013

**Territorial extent:** This document applies to the gas and electricity markets in Great Britain. Responsibility for energy markets in Northern Ireland lies with the Northern Ireland Executive's Department of Enterprise, Trade and Investment.

Responses should be clearly marked Smart Metering Systems & Equipment Testing (URN 13D/238 2013).

Responses and any enquiries related to the consultation should be addressed to:

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If you want information that you provide to be treated as confidential please say so clearly in writing when you send your response to the consultation. It would 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.

We will summarise all responses and place this summary on our website at <http://www.decc.gov.uk/consultations/Default.aspx?status=26&area=0>. This summary will include a list of names or organisations that responded but not people's personal names, addresses or other contact details.

**Quality assurance:** This consultation has been carried out in accordance with the Government's Code of Practice on consultation, which can be found here:  
<http://www.bis.gov.uk/files/file47158.pdf>

If you have any complaints about the consultation process (as opposed to comments about the issues which are the subject of the consultation) please address them to:

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# 1. Executive Summary

## Background

- 1.1 The Government's vision is for every home and smaller business in Great Britain to have smart energy meters. The roll-out of smart meters will play an important role in Britain's transition to a low-carbon economy and help to meet some of the long-term challenges in ensuring an affordable, secure and sustainable energy supply.
- 1.2 On 14 August 2013, the Government announced the preferred bidders for the competitions it has conducted to put in place the shared infrastructure that is required to support the mass roll out of smart meters across Great Britain.
- 1.3 These competitions will establish the Data and Communications Company (DCC) and its Service Providers,<sup>1</sup> which together will be responsible for linking 53 million smart electricity and gas meters in homes and small businesses with the business systems of energy suppliers, network operators<sup>2</sup> and energy service companies.
- 1.4 The Government expects that these contracts will be formally awarded and signed in early September 2013, after which the design, build and test (DBT) stage will begin. During this important stage, the DCC will be responsible for demonstrating that its systems work in their own right and can interoperate with users' systems. The DCC will also be required to provide the environment for users to test that the metering equipment they intend to deploy into live use interoperates with the DCC's systems.
- 1.5 It is important that appropriate governance arrangements are established which help ensure that DCC users, as well as the Government and Ofgem, have sufficient assurance that the DCC's systems and users' systems operate as intended.

## Purpose of this Consultation

- 1.6 This consultation document sets out the proposals for a testing regime that will provide assurance that:
  - The DCC's systems and services meet the requirements that are set out in the SEC<sup>3</sup>;
  - Prospective DCC Users are capable of using the services that are provided by the DCC and its Service Providers; and
  - The metering equipment that DCC Users intend to enrol with the DCC is interoperable<sup>4</sup> with the DCC's systems and compliant with the relevant technical specifications.
- 1.7 The consultation builds on the approach to the certification of smart metering equipment and communication hubs described in the Government's consultation response document

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<sup>1</sup> Service Providers is a collective term to describe both the Data Services Provider (DSP) and the Communications Service Providers (CSPs).

<sup>2</sup> The companies that are licensed by Ofgem to maintain and manage the electricity and gas networks in Great Britain.

<sup>3</sup> Smart Energy Code.

<sup>4</sup> In the context of this document interoperability refers to the ability of the DCC and DCC Users to be able to send, process and receive messages in a manner that is compliant with the Smart Metering Equipment Technical Specification and the GB Companion Specification

on SMETS 2 (July 2013)<sup>5</sup>. It also builds upon the Smart Metering Implementation Programme's (SMIP) Test Strategy and Test Approach documents. These documents, developed with support from industry stakeholders, informed aspects of the Service Provider contracts.

- 1.8 Responses to this consultation will inform the Government's work to define the testing arrangements within the regulatory framework. These will take the form of licence obligations and SEC rights or obligations, as appropriate. The legal drafting, either in the SEC or in Licences, will be subject to an additional consultation process with stakeholders in due course.
- 1.9 This document considers the testing of systems and processes in relation to SMETS2 compliant equipment. The requirements for testing systems and process in relation to SMETS1 compliant equipment will be considered as part of the individual Foundation enrolment projects<sup>6</sup>.
- 1.10 The Government's current planning assumptions with regard to the duration of each test phase support the commencement of mass roll out in autumn 2015 in accordance with the Smart Meters Programme Delivery Plan (May 2013).

## Approach to Testing

- 1.11 The policy proposals associated with the testing of systems, processes and equipment are summarised below.

## Pre-integration Testing

- 1.12 During Pre-Integration Testing (PIT) the CSPs and DSP work independently to test their own communication processes and data systems. The DCC is expected to receive progress reports from its Service Providers during this initial test phase and may coordinate test activities. This testing will be undertaken with early versions of metering equipment or with meter test stubs<sup>7</sup>.
- 1.13 The Government considers that the **Transition Objective in the DCC Licence and SEC, along with commercial incentives on the DCC, provide sufficient assurance that the DCC will undertake its PIT activity in an effective manner, without the need for additional regulation.**

## Systems Integration Testing

- 1.14 System Integration Testing (SIT) demonstrates that the DCC and its Service Providers can work together to deliver the services that are set out in the SEC. It also proves that the DCC and the Registration Data Providers (RDPs<sup>8</sup>) are capable of fulfilling their SEC obligations in relation to the transmission of registration data.

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<sup>5</sup> See: [www.gov.uk/government/consultations/smart-metering-equipment-technical-specifications-second-version](http://www.gov.uk/government/consultations/smart-metering-equipment-technical-specifications-second-version)

<sup>6</sup> SMETS1 meters can be enrolled into the DCC through Foundation enrolment projects, subject to meeting enrolment and adoption criteria, and are described in the Foundation Smart Market Consultation Response and Further Consultation Document (May 2013).

<sup>7</sup> Test stubs are programs which simulate the behaviours of equipment, software components or user interactions that are required to support test activities where those components or users are not available. Test stubs will be used to simulate elements of the DCC Systems, Smart Metering Equipment and DCC Users where required.

<sup>8</sup> RDPs have responsibility for the management of meter-point registration data.

- 1.15 The Government proposes that the **DCC should produce a SIT test plan, including entry and exit criteria, and that network operators will be required to ensure that the RDPs comply with this test plan.**
- 1.16 The Government also proposes that **the DCC should be required to use a minimum of two sets of metering equipment for each fuel type during SIT.** However, the Government expects that the DCC would wish to undertake testing with more than this minimum number of sets of metering equipment, where available. Meter test stubs may be used if metering equipment is unavailable.
- 1.17 Should the DCC decide to base its testing on the minimum requirement, the Government proposes that the DCC **must use the first two sets of metering equipment for each fuel type (which meet criteria defined by the DCC and which are incorporated in the SEC) that are presented to it upon request.**
- 1.18 The Government considers that **the DCC is sufficiently incentivised to make an objective assessment of the results of SIT and can itself determine when to exit SIT.**

## User Integration Testing

- 1.19 The User Integration Test (UIT) Phase comprises two sequential stages:
- i. **Interface Testing Stage:** This enables the DCC, along with its Service Providers and the RDPs, to prove that they can interoperate with DCC Users; and
  - ii. **End-to-End Testing Stage:** This enables DCC Users to test their own end-to-end systems and processes using test scenarios and SMETS2 compliant equipment of their choice.
- 1.20 The Government considers that **the DCC should produce an Interface Testing test plan, including entry and exit criteria, and publish this at least six months before the start of UIT. The DCC should assess the readiness of SEC Parties to commence Interface Testing against the Interface Testing entry criteria.**
- 1.21 The Interface Testing stage is reliant upon the participation of sufficient parties to enable the DCC to ensure that its systems work correctly. Therefore, the Government proposes that **all Large Supplier Parties<sup>9</sup> must be ready to participate in Interface Testing at the start of UIT.** This mandate would not be extended to other SEC Parties, although they will be equally welcome to commence testing at the start of this phase.
- 1.22 The Government proposes that **the DCC must ensure that it has the capacity to test concurrently with all participants in Interface Testing without restriction** but that, in the event of an unforeseen problem, the DCC should schedule energy suppliers ahead of other SEC Parties.
- 1.23 The Government considers that **Interface Testing should be undertaken with the equipment that was used in SIT.** This will provide a stable and consistent platform against which the DCC and test participants can prove that they can exchange and process messages. **If certified metering equipment is not available, the DCC will be required to demonstrate how sufficient assurance could be gained using other metering equipment or meter test stubs.**

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<sup>9</sup> The SEC defines Large Supplies Party as meaning a Supplier Party that, at the time at which it is necessary to assess the status of the Party, supplies electricity and/or gas to 250,000 or more Domestic Premises.



- 1.24 In order to provide sufficient assurance that the DCC can meet its SEC requirements regarding the provision of services to DCC Users, the Government proposes that **a minimum of two Large Supplier Parties should have completed User Entry Process Testing before the DCC can exit the Interface Testing stage.** This will enable the DCC to test all critical DCC User Gateway Catalogue (DUGC)<sup>10</sup> messages, including the Change of Supplier process. Three non-critical messages<sup>11</sup>, relating to network operator activities, will be excluded from this Interface Testing exit criteria, but these messages must be tested by the network operators before the associated services are taken from the DCC. Therefore, the Government does not consider it is necessary to mandate that the network operators must complete User Entry Process Testing before the DCC is able to exit Interface Testing.
- 1.25 The Government considers that DCC Users will require assurance that the DCC's systems and process have been adequately tested. It therefore proposes that the **SEC Panel (acting on behalf of prospective DCC Users) should review and approve the DCCs exit from Interface Testing.**
- 1.26 The Government proposes that the DCC should produce **an End-to-End Testing test plan, and publish this at least six months in advance of the start of End-to-End Testing. The SEC Panel should review and approve the DCC's recommendation to close the End-to-End Testing stage.**

### User Entry Process Testing

- 1.27 SEC Parties will be required to undertake User Entry Process Testing as part of their User Entry Process Requirements<sup>12</sup>, in order to become DCC Users. The Government proposes that **these tests will be undertaken against a set of Common Test Scenarios that will be incorporated into the SEC. The DCC will assess the readiness of SEC Parties to commence User Entry Process Testing and will determine if these tests have been completed successfully.**

### Responsibility for Equipment Testing

- 1.28 The Government considers that **energy suppliers should be responsible for testing the compliance of the equipment that they choose to install against the Smart Metering Equipment Technical Specification (SMETS2) and that they should retain evidence of this testing.** Similarly, the DCC should be responsible for testing the compliance of the communication hubs against the Communication Hub Technical Specification (CHTS) and retaining evidence of this testing.
- 1.29 The Government also considers that **energy suppliers should be responsible for testing the interoperability of the metering equipment that they choose to enrol with the DCC and that they should retain evidence of this testing.**

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<sup>10</sup> Users will send DCC User Gateway Catalogue (DUGC) messages in the format specified in the DCC User Gateway Interface Specification to Smart Metering Equipment (via the DCC) and receive relevant responses to their chosen message

<sup>11</sup> These are: DUGC 6.5 Update Device Configuration (Voltage), 6.18 Reset Maximum Demand Registers and 14.1 Record Network Data (GAS).

<sup>12</sup> The User Entry Process Requirements are set out in Section H of the SEC.

## 2. Test Arrangements

### Introduction

- 2.1. The Government has previously consulted<sup>13</sup> on the requirement for energy suppliers to ensure that their metering equipment is protocol and CPA certified<sup>14</sup>. The current consultation considers additional issues concerning the testing activities that the Government requires the DCC to coordinate and the testing of equipment by energy suppliers and the DCC.
- 2.2. These certification and test activities are part of the overall set of assurance activities that the Government expects the industry to undertake. As part of these wider activities, energy suppliers and network operators will be expected to comply with the SEC Transition Objective<sup>15</sup> by preparing and testing their internal systems and associated business processes, and reporting progress as required, including at relevant industry working groups. For network operators this will include testing that registration data can be provided (by the RDPs) to the DCC. Energy suppliers will also be required to ensure that the meters they install are compliant with the technical specifications and can interoperate with the DCC's systems.
- 2.3. Three phases of transitional testing activity will be coordinated by the DCC: (i) 'Pre-Integration Testing' (PIT); (ii) 'System Integration Testing' (SIT); and (iii) 'User Integration Testing' (UIT), which comprises Interface Testing and End-to-End Testing. The over-riding objective of testing is to confirm that the DCC and DCC Users' systems, together with the metering equipment and communication hubs, meet the requirements set out in the SEC. Completion of Interface Testing will be one of the preconditions for the DCC's systems and services to become operational. The completion of SIT and UIT Interface Testing will also trigger charges to SEC Parties in accordance with the charging methodology that will be set out in the SEC, including charges associated with the provision of support to testing during UIT.
- 2.4. In addition to the transitional testing activities, this consultation also includes the enduring User Entry Process Tests that may be undertaken by SEC Parties during UIT and by new entrants to the energy market under the enduring test arrangements.

### Assurance Approach

- 2.5. The Government's policy proposals aim to:
  - provide assurance that the systems and services that are provided by the DCC and the Service Providers meet the requirement of the SEC;

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<sup>13</sup> SMETS2 Consultation Response Document July 2013, see: [www.gov.uk/government/consultations/smart-metering-equipment-technical-specifications-second-version](http://www.gov.uk/government/consultations/smart-metering-equipment-technical-specifications-second-version)

<sup>14</sup> The GB Companion Specification will set out those elements of the base ZigBee SEP and DLMS communication protocol specifications applicable to the GB market and successful testing against these specifications will enable equipment to receive protocol certification. The equipment will also be security certified under the CPA – Foundation Level regime. On achievement of both certificates, the equipment will be placed on a 'certified products list' to be introduced and maintained by the SEC Panel. Equipment that is not on the certified product list will not be eligible for enrolment into the DCC.

<sup>15</sup> Section X1.6 of the SEC states that "Each Party shall take all reasonable steps to do all such things as are within its power and necessary or expedient in order to facilitate achievement of the Transition Objective", which is defined in Section X1.2 of the SEC as being "the efficient, economical, co-ordinated, timely, and secure process of transition to the Completion of Implementation."

- provide assurance that SEC Parties can discharge their responsibilities as DCC Users;
- provide an equipment certification regime that protects the integrity of the smart metering solution by requiring that the metering and communications hub equipment meets protocol and security requirements;
- provide this assurance in a manner which does not impose unnecessary constraints and costs on consumers or SEC parties (including on new entrants and smaller suppliers), and which does not show bias or provide competitive advantage to an individual market participant;
- provide this assurance in a timely manner which is consistent with the Transition Objective; and
- facilitate the testing of SEC Parties' own back office systems, processes and selected equipment through the provision of a test environment which may be used on a voluntary basis both during transition and under the enduring arrangements.

## Pre-Integration Test Phase

- 2.6. The Service Provider contracts require that the CSPs and DSP work independently to test their own communication processes and data systems during Pre-Integration Testing (PIT). The DCC is expected to receive progress reports from its Service Providers during this initial test phase and may choose to coordinate test activities.
- 2.7. PIT may be undertaken using meter test stubs. However, the Government considers that there would be an advantage in using actual equipment in preference to stubs, and expects that testing will be undertaken with early versions of meters (e.g. meters that have not necessarily been protocol certified, but which have been manufactured in accordance with the certification requirements) where these are available.
- 2.8. The CSPs will be required to deliver communications hubs to support their own PIT testing and will be required to ensure that these hubs are protocol certified in advance of SIT.
- 2.9. The Government considers that the Transition Objective<sup>16</sup> in the DCC Licence and SEC<sup>17</sup>, and commercial incentives on the DCC, provide sufficient assurance that the DCC will undertake its PIT activity in an effective manner, without the need for additional regulation.
- 2.10. The Government's current planning assumption, based upon input provided during the procurement process for the DCC and its Service Providers, is that the PIT phase will last for four months. This assumption will be reviewed following the award of the DCC Licence and Service Provider contracts.

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<sup>16</sup> The Transition Objective enables the Secretary of State to 'make appropriate provision under the Licence and the Smart Energy Code (SEC) for the purpose of facilitating the achievement of an efficient, economical, co-ordinated, timely, and secure process of transition to the Completion of Implementation.

<sup>17</sup> The SEC has a Transition Objective and a general objective for all parties, including the DCC to take all reasonable steps to do all such things as are within its power and necessary or expedient in order to facilitate the efficient, economical, coordinated, timely and secure process of transition to the Completion of Implementation.

## Question

- 1. Do you agree with the proposed arrangements for Pre-Integration Testing? If not, please provide an explanation with supporting rationale.**

### Systems Integration Test Phase

- 2.11. The Systems Integration Test Phase (SIT) brings together the systems of the CSP and DSP for Integration Testing in an environment that is provided by the DSP. SIT will also include the Registration Data Providers (RDPs).
- 2.12. The objectives of SIT are to prove that:
- the DCC is capable of delivering its services as specified in the SEC;
  - both the DCC and RDPs (through the network operators)<sup>18</sup> are capable of meeting their SEC obligations in relation to the transmission of registration data; and
  - the DCC's services are scalable and the Service Providers are able to meet the projected operational service levels that are set out in their contracts.
- 2.13. The Government proposes that the DCC will be required to develop and publish a SIT test plan three months before the start of SIT, which will include the manner in which the SIT objectives will be achieved, the manner in which the DCC will coordinate testing activities and the SIT entry and exit criteria<sup>19</sup>.
- 2.14. The Government further proposes that the RDPs will be required to participate in SIT and comply with this plan. The DCC will therefore be required to consult with the RDPs regarding the obligations that will be placed upon them and the RDPs will have the right of appeal in this regard to the SEC Panel (and then to Ofgem). The SEC Panel will be expected to consider any appeal in a timely manner and to take all reasonable measures to achieve Completion of Implementation in accordance with the Transition Objective (allowing testing to proceed while the appeal is heard, where applicable).
- 2.15. The Government's current planning assumption, based upon input provided during the procurement process for the DCC and its Service Providers, is that the SIT phase will last for nine months. This assumption will be reviewed following the award of the DCC Licence and Service Provider contracts.

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<sup>18</sup> The requirements that are stated in this document with regard to the RDPs will be brought into effect by placing obligations/rights on the network operators within the SEC.

<sup>19</sup> The DCC's exit criteria will include a number of measures to indicate the successful completion of testing by the DCC, RDPs, DSP, and each of the CSPs.

## Question

2. Do you agree that the:
- a) DCC should publish a SIT test plan, including entry and exit criteria, three months before the start of SIT?
  - b) RDPs (through the network operators) should be required to participate in SIT and comply with this test plan, and should have a right of appeal against the plan?
  - c) DCC should be required to publish a report setting out how it met the SIT exit criteria?
- If not, please provide an explanation with supporting rationale.

### Use of Metering Equipment during SIT

- 2.16. The Service Provider contracts require that, where available, SMETS2 compliant and protocol certified metering equipment is used during SIT in preference to meter test stubs. The contracts further require that the metering equipment should be sourced by the DCC from a minimum of two meter manufacturers for each fuel type. Meter test stubs can be used if the metering equipment is not available.
- 2.17. Concern has been expressed at industry working groups that those meter manufacturers chosen by the DCC could gain commercial advantage. This concern is based on the assumption that the chosen manufacturers may benefit from close interaction with the DCC, will be able to test the interoperability of their equipment with the DCC earlier than their competitors and may therefore be able to get their products to market ahead of their competitors.
- 2.18. The Government has carefully considered these concerns and has also taken into account the overall objectives of SIT, which do not include testing the interoperability of equipment with the DCC's systems. Rather, the Government proposes that a test environment will be provided during End-to-End Testing which will support interoperability testing of all metering equipment variants.
- 2.19. The Government believes that a requirement on the DCC to use all available equipment during SIT risks adding complexity, delay and cost to the testing process. It might also imply that the DCC has responsibility for ensuring that equipment interoperates with the DCC, rather than it being the responsibility of energy suppliers to ensure that the equipment they procure is interoperable.
- 2.20. The Government believes that sufficient assurance that the objectives of SIT have been met will be obtained through the use of two sets of metering equipment (in preference to meter test stubs) and therefore proposes not to place an obligation on the DCC to use all sets of equipment that are available at the start of SIT. However, the Government considers that the DCC should not be restricted from using more than two sets, should it see an advantage in doing so. Therefore, the Government proposes that the DCC must use **at least** the first two sets of gas metering equipment and **at least** the first two sets of electricity metering equipment that are made available to it upon request, which meet a set of selection criteria that are defined by the DCC and incorporated into the SEC. The request from the DCC will take the form of a published invite to all manufacturers.

- 2.21. The Government proposes that the selection criteria should, as a minimum, include the following requirements:
- Sufficient metering equipment is available at the scale required by the DCC to support SIT and the Interface Testing stage of UIT;
  - The metering equipment must be selected from at least two different manufacturers for each fuel type, if available, and produced by a manufacturer (and manufacturing group) different from (and not affiliated with) the Communications Hub manufacturer;
  - The meters are SMETS2 compliant, and test evidence of this compliance will be made available to the DCC for its review; and
  - The meters are protocol certified.
- 2.22. In the event that more than two sets of metering equipment that meet the selection criteria are made available to the DCC at the same point in time, the DCC must select the meters that it will use in a transparent and equitable manner.
- 2.23. If no metering equipment meets the selection criteria, the Government proposes that the DCC will use meters that most closely match the criteria in preference to meter test stubs.

Question	
3.	<p><b>Do you agree that the DCC should be obliged to use at least two sets of metering equipment for each fuel type during SIT, noting that this is a minimum requirement?</b></p> <p><b>If not, please provide an explanation with supporting rationale.</b></p>
4.	<p><b>Do you agree:</b></p> <p><b>a) that, where more than two sets are available, the DCC should select the first two sets that are presented to it which meet pre-defined selection criteria?</b></p> <p><b>b) that the DCC should define the selection criteria and that these should be incorporated into the SEC?</b></p> <p><b>c) with the minimum selection criteria that are proposed in this consultation (as set out in 2.21)?</b></p> <p><b>If not, please provide an explanation with supporting rationale and a proposal for an alternative selection mechanism.</b></p>

### Exit from Systems Integration Testing

- 2.24. The Government has considered three options for the assessment of the DCC's readiness to exit SIT:

**Option 1:** The DCC will publish a SIT test exit report and authorise its own exit from SIT. Authorisation to exit from SIT will require the DCC to assess the SIT test results against the SIT objectives and exit criteria and confirm that they have been achieved. It will also be required to publish a SIT test exit report.

**Option 2:** The DCC will publish a SIT test exit report and make a recommendation to exit SIT to the SEC Panel. The SEC Panel will undertake its own assessment as to whether the SIT objectives and exit criteria have been met. The SEC Panel could require the DCC to undertake further testing if the objectives or criteria have not been met.

**Option 3:** The DCC will publish a SIT test exit report and make a recommendation to exit SIT to the Secretary of State. The Secretary of State will undertake his or her own assessment as to whether the SIT objectives and exit criteria have been met. The Secretary of State could require the DCC to undertake further testing if the objectives or criteria have not been met.

- 2.25. The Government notes that the Transition Objective in the DCC Licence and in the SEC provide clear drivers to ensure the successful completion of testing and that the DCC may be subject to action under its Licence if it does not meet the objectives for testing or the overarching obligations for Transition. Therefore, the DCC will want to ensure that its test exit assessment is accurate. Furthermore, the Government considers that the establishment of SIT exit criteria, set out by the DCC in the SIT plan, will protect against the risk that exit from SIT is based upon subjective decisions and that publication of the SIT test exit report will reduce the risk of dispute. The Government can therefore see merits in Option 1.
- 2.26. However, the DCC is incentivised financially to meet the SIT testing milestones in accordance with its Licence. The Government has therefore considered whether it would be appropriate for another body to authorise the DCC's exit from SIT to ensure that no conflict of interest is introduced into the decision making process. The Government is also aware that successful completion of SIT for each region<sup>20</sup> will result in charges to SEC Parties via the charging methodology that will be set out in the SEC, and that the SEC Panel (acting on behalf of SEC Parties) may have an interest in confirming that the SIT exit criteria have been met. The Government can therefore also see merits in Option 2, although it considers that this option could introduce unnecessary delay into the testing process.
- 2.27. The Government does not believe that an independent assessment of test results should be performed by the Secretary of State. Rather the Secretary of State may take action to intervene at any point during PIT, SIT or UIT, as deemed necessary. The Government has therefore concluded that the Secretary of State should not approve the results of testing against the SIT exit criteria and Option 3 has been discounted.
- 2.28. Having carefully considered Option 1 and Option 2, the Government is of the view that, on balance, the DCC is sufficiently incentivised to make an objective assessment of the results of testing during SIT. The Government therefore proposes that Option 1 (the DCC authorises its own exit from SIT) is most appropriate.

## Question

- 5. Do you agree with the Government's proposal that Option 1 (the DCC authorises its own exit from SIT) should be used as the basis of exit from SIT, in preference to Option 2 (the SEC Panel authorises the DCC's exit from SIT)?**  
**If not, please provide an explanation with supporting rationale.**

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<sup>20</sup> CSP contracts were tendered in three discrete regions; North Region (North of England and Scotland), Centre (Midlands, East Anglia and Wales) and South (South of England).

## User Integration Test Phase

- 2.29. The User Integration Test Phase (UIT) comprises two sequential stages, with associated entry and exit criteria, during which the DCC will provide a test environment and test labs<sup>21</sup> (including communication hubs). It is a transitional test phase which is a precursor to enduring testing arrangements. The stages of UIT are:
- i. **Interface Testing Stage:** This enables the DCC, along with its Service Providers and RDPs, to prove that they can interoperate with DCC Users; and
  - ii. **End-to-End Testing Stage:** This enables DCC Users to test their own end-to-end systems and processes using test scenarios and SMETS2 compliant equipment of their choice.
- 2.30. SEC Parties who wish to become DCC Users are required to complete the User Entry Process Requirements, which are described in Section H of the SEC. UIT will provide these prospective DCC Users with access to a test environment, which will enable them to satisfy two of the four User Entry Process Requirements by undertaking User Entry Process Testing<sup>22</sup> (described under “User Entry Processes” in this document). User Entry Process Testing may be undertaken in either the Interface Testing Stage or the End-to-End Testing Stage, or at a later point in time under the enduring testing arrangements.
- 2.31. The Government’s current planning assumption, based upon input provided during the procurement process for the DCC and the Service Providers, is that the UIT Phase will last between six and twelve months. This assumption will be reviewed following the award of the DCC Licence and Service Provider contracts. The Joint Industry Plan<sup>23</sup> assumes that it is possible that the start of the Interface Testing Stage will overlap with the completion of SIT. The two stages of UIT are described below.

## Interface Testing

- 2.32. The Government proposes that the DCC should be required to publish an Interface Testing test plan at least six months before the start of Interface Testing and that this should be produced in consultation with SEC Parties, who will be required to comply with the plan. The Government proposes that all SEC Parties will be given the right of appeal to the SEC Panel (and further to Ofgem) on the content of the test plan for Interface Testing. The SEC Panel will be expected to consider any appeal in a timely manner and to take all reasonable measures to achieve Completion of Implementation in accordance with the Transition Objective (allowing testing to proceed while the appeal is heard, where applicable).
- 2.33. This Interface Testing test plan will include the test approach, the manner in which the DCC will coordinate test activities, common test scenarios (described under ‘User Entry

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<sup>21</sup> The CSPs will each provide a Test Lab facility, which will enable the testing of Smart Metering Equipment with the DCC. The facility will be used in SIT by the DCC to prove the integration of the Communications Hub with the wider DCC solution and will have the capability of testing 25 meter sets (a meter set may include Communication Hub, Electricity Meter, Gas Meter, In-Home Display, and PPMID or Aux Load Control Switches).

<sup>22</sup> The Government proposes that two of the entry process requirements should be combined to form Entry Process Testing as described under the ‘User Entry Processes’ section in this document. The other two Entry Process Requirements relate to Security Requirements and provision of Credit Cover.

<sup>23</sup> The industry wide smart metering programme plan which has been developed in conjunction with industry.



Processes') and entry and exit criteria. The Government proposes that objectives of Interface Testing, which should be included in the test plan, are to ensure that:

- The DCC's systems interoperate with DCC Users' systems such that i) "essential" messages that are set out in the DCC User Gateway Catalogue (DUGC<sup>24</sup>) are proved to be deliverable by the DCC and ii) that the business scenarios and DCC services identified in the Common Test Scenarios (described under User Entry Processes) are proved;
- All SEC Parties that meet the Interface Testing entry criteria are given reasonable opportunity to complete User Entry Process Testing; and
- A minimum of two Large Supplier Parties have completed User Entry Process Testing during Interface Testing.

2.34. This stage of testing is reliant upon the participation of sufficient parties to enable the DCC to gain assurance that its systems work in accordance with the SEC. The Government therefore proposes that all Large Supplier Parties should be mandated to meet the entry requirements and be ready to participate at the start of Interface Testing. The Government considers that placing this obligation on Large Supplier Parties will ensure that Interface Testing is not delayed through a lack of participants. The RDPs will also be required to support UIT.

2.35. The Government does not consider that this mandate should be extended to encompass other SEC Parties and that it is unreasonable to expect other SEC Parties, for example, smaller suppliers, to be ready to participate at this point. However, these other parties must be allowed to participate from the start of Interface Testing if they meet the entry criteria.

2.36. The Government proposes that the DCC will assess the readiness of parties to commence Interface Testing against the entry criteria in the Interface Testing test plan and that parties will have the right of appeal to the SEC Panel (and then to Ofgem) if they disagree with this assessment.

2.37. The Government also proposes that the DCC must ensure that it has the capability to test concurrently with all participants in Interface Testing without restriction. In the event of unforeseen issues, the DCC should schedule participants in a transparent and equitable manner, prioritising energy suppliers ahead of other types of participant.

2.38. The Government requires the DCC to resolve issues that arise during Interface Testing and notes that the DCC has a licence obligation not to discriminate between prospective DCC Users in doing so. These Licence conditions will not unduly restrict the DCC's flexibility to assign priorities to defects in testing nor, where applicable, to fix them in an order to suit implementation imperatives at that time.

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<sup>24</sup> Users will send DCC User Gateway Catalogue (DUGC) messages in the format specified in the DCC User Gateway Interface Specification to Smart Metering Equipment (via the DCC) and receive relevant responses to their chosen message

Question	
<b>6.</b>	<p><b>Do you agree that:</b></p> <ul style="list-style-type: none"> <li><b>a) the DCC should produce an Interface Testing test plan in consultation with SEC parties, including Interface Testing objectives and entry/exit criteria?</b></li> <li><b>b) SEC Parties should have a right of appeal against this plan?</b></li> <li><b>c) the Interface Testing test plan should be published six months in advance of the start of UIT?</b></li> </ul> <p><b>If not, please provide an explanation with supporting rationale.</b></p>
<b>7.</b>	<p><b>Do you agree with the proposed Interface Testing objectives?</b></p> <p><b>If not, please provide an explanation with supporting rationale.</b></p>
<b>8.</b>	<p><b>Do you agree that:</b></p> <ul style="list-style-type: none"> <li><b>a) the DCC should assess the readiness of SEC Parties to commence Interface Testing against the test entry criteria?</b></li> <li><b>b) individual SEC Parties should have a right of appeal against the DCC's assessment of their readiness to participate?</b></li> </ul> <p><b>If not, please provide an explanation with supporting rationale.</b></p>
<b>9.</b>	<p><b>Do you agree that:</b></p> <ul style="list-style-type: none"> <li><b>a) Large Supplier Parties should be ready to participate at the start of Interface Testing?</b></li> <li><b>b) this requirement should not be extended to encompass other SEC Parties?</b></li> </ul> <p><b>If not, please provide an explanation with supporting rationale.</b></p>
<b>10.</b>	<p><b>Do you agree that:</b></p> <ul style="list-style-type: none"> <li><b>a) the DCC should have the capability to test concurrently with all test participants in Interface Testing?</b></li> <li><b>b) in the event of an unforeseen problem, the DCC should be required to schedule energy suppliers ahead of other types of prospective DCC User?</b></li> </ul> <p><b>If not, please provide an explanation with supporting rationale.</b></p>

### **Basis of Interface Testing**

2.39. The Government proposes that Interface Testing will use the protocol certified equipment that was subject to successful testing during SIT. This will provide a stable platform against which the DCC and test participants can prove that they can exchange and process messages in a manner that is consistent with the SEC. The DCC will be required to provide SEC Parties with the facility to test with this equipment, which will be hosted in a CSP Test Lab and will remain in a standard configuration.

2.40. In the event that certified metering equipment is not available, the DCC will be required, in its Interface Testing test plan, to demonstrate to the SEC Panel how sufficient assurance could be gained using other metering equipment or meter test stubs, if it considers that these provide an appropriate basis upon which to commence Interface Testing.

## Question

11. Do you agree that:

- a) Interface Testing should use the certified metering equipment that was successfully used in SIT?
- b) if certified metering equipment is not available, the Interface Testing can be undertaken using other metering equipment or meter test stubs, if the DCC can demonstrate that sufficient assurance can be gained?

If not, please provide an explanation with supporting rationale.

### Exit from Interface Testing

- 2.41. The DCC can only exit the Interface Testing stage when it has demonstrated that it has met the Interface Testing objectives and exit criteria that are set out in its Interface Testing test plan. The Government proposes that these Interface Testing exit criteria will include a pre-requisite that the DCC must have successfully exited SIT.
- 2.42. The Government believes that it is necessary to gain assurance that the DCC can meet the SEC requirements relating to the provision of services to DCC Users. The Government considers that this assurance can be gained by requiring that the Interface Testing exit criteria include that a minimum of two Large Supplier Parties have completed User Entry Process Testing during the Interface Testing stage. This will enable the DCC to test all critical DCC User Gateway Catalogue (DUGC) messages, including the Change of Supplier process. Three non-critical messages, relating to network operator activities, will be excluded from this Interface Testing exit criteria, but these messages must be tested by the network operators before the associated services are taken from the DCC. Therefore, the Government does not consider it is necessary to mandate that the network operators must complete User Entry Process Testing before the DCC is able to exit Interface Testing.
- 2.43. The Government considers that the DCC must not be permitted to discriminate between test participants in meeting these exit criteria. All test participants that were ready to commence testing at the start of Interface Testing should be provided with equal opportunity to complete their User Entry Process tests, should they wish to do so.
- 2.44. The Government has considered three options for the assessment of the DCC's Interface Testing test report against the UIT test objectives and exit criteria:
- Option 1:** The DCC will publish a UIT test exit report and authorise its own exit from SIT. Authorisation to exit from UIT will require the DCC to assess the UIT test results against the UIT objectives and exit criteria and confirm that they have been achieved. It will also be required to publish a UIT test exit report.
  - Option 2:** The DCC will publish a UIT test exit report and make a recommendation to exit UIT to the SEC Panel. The SEC Panel will undertake its own assessment as to whether the UIT objectives and exit criteria have been met. The SEC Panel could require the DCC to undertake further testing if the objectives or criteria have not been met.
  - Option 3:** The DCC will publish a UIT test exit report and make a recommendation to exit UIT to the Secretary of State. The Secretary of State will undertake his or her own assessment as to whether the UIT objectives and exit criteria have been met. The Secretary of State could require the DCC to undertake further testing if the objectives or criteria have not been met.

- 2.45. In the same manner as for SIT, the exit criteria that are set out in the Interface Testing test plan should be objective and protect against the risk that a subjective assessment of the test results is made. For the same reasons that are set out under the 'Exit from SIT' section in this document, the Government considers that Option 3 is not appropriate and that there is merit in Option 1.
- 2.46. However, the Government believes that prospective DCC Users, who will be SEC Parties, will be seeking 'user assurance' that the DCC is fit for purpose and that the DCC's systems and services have been adequately tested during Interface Testing. The Government therefore proposes that the SEC Panel (acting on behalf of prospective DCC Users) should review and approve the DCC's exit from Interface Testing, as in Option 2. The Government does not propose to specify how the SEC Panel chooses to assure the Interface Testing test exit results, allowing the SEC Panel to decide whether it seeks independent assurance and, if so, the form that this takes.

Question	
12.	<p><b>Do you agree that the Interface Testing exit criteria should require that:</b></p> <p><b>a) the DCC has successfully exited SIT before it can exit Interface Testing; and</b></p> <p><b>b) a minimum of two Large Supplier Parties must have completed the User Entry Process Testing during the Interface Testing stage?</b></p> <p><b>If not, please provide an explanation with supporting rationale.</b></p>
13.	<p><b>Do you agree with the proposal that Option 2 (the SEC Panel authorises the DCC's exit from Interface Testing) should be the basis upon which the DCC can exit from Interface Testing?</b></p> <p><b>If not please provide an explanation with supporting rationale.</b></p>

## End-to-End Testing

- 2.47. The End-to-End Testing stage provides a second opportunity for SEC Parties to undertake User Entry Process Testing (the first being in Interface Testing). This stage of testing will also provide an environment where SEC parties can test their own back office systems and business processes and will provide an opportunity for SEC Parties to undertake interoperability testing with their own equipment (described under 'Equipment Certification & Testing'). The point in time at which these tests are undertaken is not mandated and participation in End-to-End Testing is therefore voluntary to the extent that each test participant deems it necessary.
- 2.48. As with earlier testing phases, the Government proposes that the DCC should be required to provide a plan for End-to-End Testing, including the manner in which the DCC will support the test activities. This plan, which should be published six months before the start of End-to-End Testing, will be produced in consultation with SEC Parties who will be required to comply with the plan, to the extent that they volunteer to participate. It will include entry criteria (including that the DCC must have completed Interface Testing) and exit criteria by which the DCC can recommend to the SEC Panel that this stage of testing can be closed. The SEC Panel may determine that this stage can be extended, if considered appropriate. Closure of the End-to-End Testing stage will trigger the start of the Enduring Test phase.

## Question

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| 14. | <p><b>Do you agree that:</b></p> <ul style="list-style-type: none"><li>a) <b>the DCC should produce an End-to-End Testing test plan in consultation with SEC parties and that this should be published six months before the start of End-to-End testing?</b></li><li>b) <b>SEC Parties should be obliged to comply with this plan, to the extent that they decide to participate in End-to-End Testing?</b></li><li>c) <b>the DCC must have completed Interface Testing before End-to-End Testing can commence?</b></li></ul> <p><b>If not, please provide an explanation with supporting rationale.</b></p> |
| 15. | <p><b>Do you agree that the SEC Panel should review and approve the DCC's recommendation to close the End-to End Testing stage?</b></p> <p><b>If not, please provide an explanation with supporting rationale.</b></p>  |

## Enduring Test Phase

- 2.49. The Government proposes that the DCC will be required to provide a test environment and support to SEC Parties on an enduring basis. This will include support to User Entry Process Testing and any other test activity in which the DCC Users will be required to participate (e.g. to support testing of upgrades or changes to the DCC's systems) or which SEC Parties wish to undertake in order to test their own systems.
- 2.50. The process for allocating the costs associated with test support is still under consideration. It may be appropriate to apply the charges associated with User Entry Process Testing on an equivalent basis in the Enduring Test Phase and in the UIT Test Phase. There may also be merit in charging the costs of additional tests that SEC Parties wish to undertake in the Enduring Test Phase directly to those SEC Parties.

## Question

- |     |   |
|-----|---|
| 16. | <p><b>Please provide any views that you have on the manner in which the costs of testing should be allocated in the UIT and Enduring Test Phases.</b></p> |
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## User Entry Processes

- 2.51. Section H1.6 of the SEC provides that a SEC Party is required to complete the following steps ("User Entry Processes") before it becomes a DCC User and is therefore eligible to receive DCC communication services and, in the case of energy suppliers, to enrol smart metering systems with the DCC:

- i. to have successfully demonstrated that its systems can communicate with the DCC User Gateway;
  - ii. to satisfy pre-determined entry tests;
  - iii. to meet applicable security requirements; and
  - iv. to provide adequate credit cover.
- 2.52. The Government proposes that steps (i) and (ii) of these User Entry Processes are combined into a single step, termed User Entry Process Testing, and this will be based upon a set of common test scenarios (CTS). The scope of the CTS will include, as a minimum:
- all DCC User Gateway Catalogue messages;
  - “essential” business processes (for energy suppliers), as defined in the SEC; and
  - other DCC Services, such as the self-service interface and key incident management procedures.
- 2.53. The Government proposes that the CTS will be created by the DCC in consultation with SEC Parties and incorporated into the SEC. The CTS will include the acceptance criteria that must be met during testing.
- 2.54. SEC Parties will be required to create and map their individual test scripts to each of the CTS. The User Entry Process Testing entry criteria will require that participants provide evidence to the DCC that these tests are consistent with the CTS. The Government proposes that the DCC will assess the readiness of SEC Parties to commence User Entry Process Testing and that the SEC Parties have the right of appeal to the SEC Panel (and then to Ofgem) if they disagree with the DCC’s assessment.
- 2.55. The Government proposes that each prospective DCC User must undertake User Entry Process Testing against the CTS that are applicable to their ‘roles’ (e.g. as an energy supplier or network operator). The Government will consider whether these mandatory CTS should be based upon a minimum set of DCC User Gateway Catalogue (DUGC) messages, or if they should encompass the full set of messages for each ‘role’. Regardless, for each DCC service that it intends to utilise, each prospective DCC User must demonstrate that it has successfully completed the associated CTS and that it can correctly process the relevant DUGC messages.
- 2.56. The Government considers that SEC Parties should use certified metering equipment<sup>25</sup> that is selected by the DCC when conducting User Entry Process Testing. This will provide a stable platform against which the DCC and test participants can prove that they can exchange and process messages. The DCC will be required to provide prospective DCC Users with the facility to test with this equipment, which will be hosted in a CSP Test Lab and will remain in a standard configuration.
- 2.57. The Government proposes that the DCC will be responsible for determining whether a prospective DCC User has satisfactorily completed User Entry Process Testing. However, the test participant will have the right to appeal the decision to the SEC Panel (and then to Ofgem) if it disagrees with the DCC’s assessment.

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<sup>25</sup> This equipment will be the protocol certified equipment that was subject to successful testing during SIT (described under ‘Basis of Interface Testing’ in this document) if the User Entry Process Tests are undertaken during the Interface Testing stage.

## Question

17. Do you agree that:
- a) Section H1.6 i) and ii) in the SEC should be combined to form User Entry Process Testing?
  - b) SEC Parties must complete User Entry Process Testing before they can become DCC Users and take services from the DCC?
  - c) User Entry Process Testing should be undertaken against a set of Common Test Scenarios?
  - d) the Common Test Scenarios should be developed by the DCC in consultation with SEC Parties and incorporated into the SEC?
  - e) SEC Parties should complete Common Test Scenarios that are applicable to their role and that, if these scenarios are based on a minimum set of messages for each role, the additional services cannot be taken from the DCC until the SEC Party has proven that it can process the relevant DUGC messages?
  - f) the User Entry Process Testing should be undertaken against metering equipment that is selected by the DCC and hosted in a test lab?
- If not, please provide an explanation with supporting rationale.
18. Do you agree that the DCC should be responsible for assessing the readiness of SEC Parties to commence User Entry Process Testing?
- If not, please provide an explanation with supporting rationale.
19. Do you agree that the DCC should be responsible for determining whether a prospective DCC User has satisfactorily completed User Entry Process Testing?
- If not, please provide an explanation with supporting rationale.

## Cost Estimates

2.58. The Government is of the view that the proposed testing requirements in this document are consistent with existing industry standards and the testing activity that could be expected under normal system development and system integration activities. It therefore does not expect any incremental costs to be incurred from these proposed requirements in addition to testing costs that have already been considered in the Programme Impact Assessment.

## Question

20. Do you consider the proposed testing arrangements set out in this document imply, or will result in, any costs which are not in line with your existing expectations?
- If not, please provide an explanation with supporting rationale including any estimate of additional costs.

## 3. Equipment Certification & Testing

3.1. The testing that is undertaken in PIT, SIT and UIT provides assurance that the systems and processes that are operated by the DCC and DCC Users work as intended. However, the metering equipment that will be used forms an important component of the end-to-end smart metering solution. This equipment will be assured through protocol and CPA certification and via testing obligations that will be placed on energy suppliers<sup>26</sup> and the DCC<sup>27</sup>. These certification requirements have already been set out in the Response to the SMETS 2 Consultation document (July 2013). The proposals for additional equipment testing are set out below.

### Testing against Technical Specifications

3.2. The energy suppliers' roll out licence obligations and DCC licence will require that equipment complies with the SMETS and CHTS. During industry working group discussions on the SMIP Test Strategy, energy suppliers (in particular) have indicated that they can see merits in a consolidated certification regime that would verify that metering equipment and communications hubs:

- meet the functional requirements defined in SMETS2 and CHTS; and
- will be interchangeable<sup>28</sup> with equipment that is installed by other suppliers.

3.3. The Government agrees that the functional performance of equipment should be tested to provide assurance that the equipment is compliant with these specifications, that it correctly interprets the content of messages that are communicated via the DCC, and that it responds correctly and effectively.

3.4. The Government considers that it is the individual energy supplier's responsibility to confirm that the metering equipment that they choose to use is compliant with the technical specifications and that this is not the responsibility of the DCC. The Government further considers that functional testing requirements are best defined, and tests conducted, by energy suppliers to provide them, and their Meter Asset Provider (MAP), with assurance that their chosen equipment is both SMETS2 compliant and performs functionally to their satisfaction.

3.5. However, the Government is aware that there may be multiple sequential users of metering equipment following change of supplier events and that these users will require assurance that the meters are compliant with the technical specifications. The Government therefore proposes to place an obligation on energy suppliers to test the compliance of equipment with the SMETS. A similar requirement will also be placed within the CHTS with regard to the testing of the communications hub equipment by the DCC.

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<sup>26</sup> For SMETS2 compliant metering equipment

<sup>27</sup> For CHTS compliant communications hubs

<sup>28</sup> "Interchangeability" refers to the ability to remove and replace smart metering equipment on the HAN, for example this could be following change of supply and the gaining supplier may wish to offer the consumer a new IHD or additional smart metering equipment which was not originally installed, for example to match a consumers payment method and or fuel type(s)



- 3.6. The Government considers that energy suppliers and the DCC should provide evidence of this testing to the SEC Panel and Ofgem on request, for example to support a dispute.
- 3.7. The Government is of the view that these obligations and the requirements for meters to be protocol certified, allied with the strong commercial incentives on energy suppliers and MAPs to ensure that their equipment is SMETS compliant, should provide sufficient assurance without the requirement to mandate a specific certification scheme.
- 3.8. The Government understands that industry is discussing the scope of equipment testing, including whether a common, voluntary approach to testing of all in-home equipment is appropriate<sup>29</sup>. The Government encourages all interested parties to engage in this work.

## Question

- 21. Do you agree that energy suppliers and the DCC (in relation to the communications hub) should be required to:**
- a) undertake testing to ensure that their equipment is compliant with the relevant technical specifications?**
  - b) retain evidence of this testing and provide it to the SEC Panel or Ofgem on request?**
- If not, please provide an explanation with supporting rationale.**

## Interoperability Testing

- 3.9. Protocol certification will provide assurance that the certified equipment is capable of sending and receiving messages in a manner that conforms/complies with the ZigBee and DLMS protocol standards. However, interoperability will only be fully assured when the suppliers' metering equipment and the CSPs' communication hubs are shown to operate as part of the end-to-end system with the DCC.
- 3.10. In the same manner as for testing against technical specifications, the Government considers that it is not appropriate for the DCC to test the interoperability of each variant of metering equipment that individual suppliers choose to install and that this should be the responsibility of the energy supplier. However, the Government is again aware that there may be multiple sequential users of metering equipment following change of supplier events and that these users will require assurance that the meters are interoperable.
- 3.11. The Government therefore proposes to place a requirement on energy suppliers to test the interoperability of metering equipment that they intend to enrol with the DCC. It proposes that this obligation will be brought into effect via a new enrolment condition in supply licences, with associated provisions in the SEC, to be developed and consulted upon in due course. A similar requirement will also be placed within the CHTS with regard to the testing of communications hub equipment by the DCC (via the CSP).
- 3.12. The DCC will be required to provide a test environment, on an enduring basis to enable energy suppliers to perform this interoperability testing (described under 'Enduring Test Phase'). Alternatively, SEC Parties can use their own test lab facilities.

<sup>29</sup> The industry initiative is being coordinated by Energy UK.

3.13. The Government considers that energy suppliers and the DCC (via the CSP) should be required to provide evidence of this testing to the SEC Panel and Ofgem, as required to support the discharge of their functions.

#### Question

- 22. Do you agree that energy suppliers and the DCC (in relation to the communications hub) should be required to:**
- a) undertake testing to ensure that their chosen equipment is interoperable with the DCC?**
  - b) retain evidence of this testing and provide it to the SEC Panel or Ofgem on request?**
- If not, please provide an explanation with supporting rationale.**

#### Cost Estimates

3.14. The Government is of the view that the proposed equipment testing requirements are consistent with existing industry standards and the testing activity that could be expected under normal equipment development and integration activities. It therefore does not expect any incremental costs from these proposed requirements on top of existing equipment test costs already considered in the Programme Impact Assessment.

#### Question

- 23. Do you consider that the proposed equipment testing arrangements set out in this document imply, or will result in, any costs which are not in line with your expectations?**
- If not, please provide an explanation with supporting rationale including any estimate of costs.**

## Glossary

### **Communications Hub**

A device located at the consumer's premises which will have the capability to communicate and transfer data between smart metering equipment and the smart metering WAN.

### **Communications Hub Technical Specification (CHTS)**

The document designated by the Secretary of State to describe the minimum capabilities of communications hubs.

### **Communications Service Provider (CSP)**

Bodies awarded a contract to be a service provider of the DCC's communications services.

### **Data and Communications Company (DCC)**

The new entity that will be licensed to deliver central data and communications activities.

### **Data Services Provider (DSP)**

Body awarded the contract to deliver systems integration, application management and IT hosting services to the DCC.

### **Smart Energy Code (SEC)**

The SEC, as designated by the Secretary of State under Condition 22 of the DCC Licence, will be a new multiparty agreement which will set out the terms for the provision of the DCC's smart meter communications service and specify other provisions to govern the end-to-end management of smart metering. The SEC needs to be read alongside the DCC Licence, which sets out the high-level obligations for this new licensed entity. The DCC, energy suppliers and network operators will be required through new conditions in their licences to become parties to the SEC.

### **Smart Meter**

A meter which, in addition to traditional metering functionality (measuring and registering the amount of energy which passes through it), is capable of providing additional functionality; for example, two-way communication allowing it to transmit meter readings and receive data remotely.

### **Smart Metering Equipment Technical Specification (SMETS)**

The document designated by the Secretary of State to describe the minimum capabilities of equipment installed to satisfy the roll-out licence conditions placed on suppliers.

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URN 13D/238