

Smart Metering Implementation Programme - Regulation  
Department of Energy & Climate Change  
Orchard 3, Lower Ground Floor  
1 Victoria Street  
London  
SW1H 0ET

Email to: [smartmetering@decc.gsi.gov.uk](mailto:smartmetering@decc.gsi.gov.uk)

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### **Smart Metering Implementation Programme: A Consultation on New Smart Energy Code Content (Stage 3)**

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include nuclear, coal and gas-fired electricity generation, renewables, and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including residential and business users.

EDF Energy welcomes the opportunity to respond to this consultation on new content for the Smart energy Code (SEC). DECC has engaged suppliers throughout the development process so that we better understand the proposals and policy decisions. We recognise that the SEC is developing into a large and complex document set, which is reliant on the accurate interpretation of policy decisions into legal text.

EDF Energy generally agrees with the structure, format and approach to Smart Metering Key Infrastructure (SMKI). We believe that the SMKI is necessary to provide appropriate security for smart metering transactions and to establish trusted relationships between the equipment in premises and the DCC and DCC users. However, we remain concerned that, as currently drafted, the SEC could require a supplier with multiple licences to support multiple security keys, credentials and software, depending on which licence was registered to the supply point. We believe that a pragmatic solution should be developed to avoid this complexity and cost. Furthermore, we are concerned that DECC has not yet defined the charging mechanism for the SMKI service provision. Our current assumption is that the service is delivered under the fixed cost arrangements and therefore requests for signing certificates or for their retrieval will not incur a transactional charge.

We do not believe that it is sufficient for one large supplier to complete SMKI Repository Testing (SRT) for the repository to be proved. It is possible that there could be variances in the way that suppliers request and handle security keys. As such we believe that at least two large suppliers should complete SMKI SRT.

We note that the recently notified delay to the publication of the SMETS2 GB Companion Specification (GBCS) is likely to have a wide impact on the smart metering programme. We believe that if a delay is confirmed then this will need to be reflected in the:

- ♦ SMKI Service and SMKI Repository 'Go Live'.
- ♦ Commencement of supplier testing.

EDF Energy  
40 Grosvenor Place, Victoria  
London SW1X 7EN  
Tel

[edfenergy.com](http://edfenergy.com)  
EDF Energy plc.  
Registered in England and Wales.  
Registered No. 2368852.  
Registered office: 40 Grosvenor Place,  
Victoria, London SW1X 7EN

We are also concerned that any delay to the GBCS without corresponding amendments to the Level 1 Plan, may result in suppliers wishing to enrol very large numbers of meters on the DCC at go live. We continue to believe that arrangements need to be in place to ensure that actions of suppliers do not endanger or threaten the DCC. As such we believe that there is value in testing the DCC with increasing volumes of meters to ensure that it is stable and reliable.

Sufficient and appropriate testing of all end-to-end systems and processes is vital to the successful delivery of the national smart metering roll-out. EDF Energy has always believed that baseline device accreditation and a robust ongoing assurance processes, along with system testing, were key enablers for the programme.

EDF Energy intends to be ready to enter the DCC User Integration Testing (UIT) phase at the end of Q1 2015. However, our ability to enter end-to-end testing is completely dependant upon device manufacturer's readiness.

We are concerned that a certificate retrieval request from the DSP has a 30 second service level. We believe that a call to the public key database in the DSP should be in the range of milliseconds. This should ensure that suppliers are able to meet their customer's expectations and offer a high value of service when responding to queries on the phone.

EDF Energy supports the option to allow MOPs/MAMs access to the DCC for all the services available to that user role. We continue to believe that MAPs, MOPs and MAMs should be allowed to accede to the SEC and participate in their own user category. They should be provided direct access to DCC services as appropriate to their role. This should reduce complexity, ensure the costs of using those services are more directly allocated and enforce appropriate security and process controls through the DCC user qualification process.

Our detailed responses are set out in the attachment to this letter. Should you wish to discuss any of the issues raised in our response or have any queries, please contact

I confirm that this letter and its attachment may be published on DECC's website.

Yours sincerely,

## Attachment

### Smart Metering Implementation Programme: A Consultation on New Smart Energy Code Content (Stage 3)

#### EDF Energy's response to your questions

#### 3.2: SMKI Policy Management Authority

**Q1. Do you agree with our proposed approach and text for the SEC with respect to the Policy Management Authority? Please provide a rationale for your views.**

EDF Energy broadly agrees with the proposed approach to the SMKI Policy Management Authority. The legal drafting appears to capture the intent of the proposals. The role and accountabilities of the PMA are clear and we recognise the importance of an authority that provides both a planning and emergency operational function.

The composition of the authority is balanced. However, consideration should be given to broadening the invitation list. We believe that the presence of all of the large suppliers is necessary, as they are key stakeholders of the end-to-end solution and will establish operational teams to address the SMKI challenges. The provision of a clear link between the SMKI PMA and those operational teams within the large suppliers is likely to enhance the overall effectiveness of the SMKI solution. It would also be inappropriate and potentially unacceptable for the management of associated risks to be handled by intermediaries/nominated third party representatives on matters related to CNI and privacy.

**Q2. Do you agree with our proposed approach to securing the timely appointment of PMA members? Please provide a rationale for your views.**

EDF Energy agrees with DECC's intention of appointing the SMKI PMA, to be in-place when the relevant SEC provisions take effect. However, as there are significant gaps in the text of the published certificate policies, we believe that it is too early to formally transfer responsibilities from Transitional SMKI PMA Group (TPMAG) to the PMA at the time SEC3 takes effect.

We would recommend that the appointment of the PMA Chair and committee members be deferred until such time that the relevant policies are complete. In the meantime, a provisional (or shadow) PMA could be established to work alongside the DECC team that is still developing the certificate policies. This might avoid a step-change in SMKI governance, as well as accelerating the legal drafting process.

### **3.3: The SMKI Service**

**Q3. Do you agree with our proposed approach and text for the SEC with respect to provision of the SMKI Service? Please provide a rationale for your views.**

EDF Energy agrees with the proposed approach and text for the SEC with respect to the SMKI service provided by the DCC. The DCC is the appropriate entity to provide an SMKI service for both organisations and devices.

### **3.4: SMKI Assurance**

**Q4. Do you agree with our proposed approach and text for the SEC with respect to SMKI Assurance? Please provide a rationale for your views.**

EDF Energy broadly agrees with the proposed approach and text for the SEC with respect to the DCC assurance of the SMKI. However, we note that the independent assessor is not required to have any security clearance. We believe that as a minimum, security clearance is an essential for having access to designs and operational risks for such a critical system.

### **3.5: Certificate Policies**

**Q5. Do you agree with our proposed approach and text for the SEC with respect to the Device Certificate Policy? Please provide a rationale for your views.**

EDF Energy would like to reiterate our concerns about the Device Certificate Policy. We do not understand the reasons why meters have small certificates which are subsequently processed in large data centres, and yet SEC parties have large certificates that need to be processed on meters. This appears to be the wrong way round and may result in additional asset costs being incurred for meters conducting additional processing.

We also have concerns with the end-to-end trust model for firmware where software is deployed and then subsequently activated is not included in the arrangements.

**Q6. Do you agree with our proposed approach and text for the SEC with respect to the Organisation Certificate Policy? Please provide a rationale for your views.**

EDF Energy agrees with the proposed approach and text for the SEC with respect to the SMKI Organisation Certificate policy. We believe it is well written and provides the necessary structure on how the DCC must operate in its role as the Organisation Certification Authority (OCA).

### 3.6: Using the SMKI Service

**Q7. Do you agree with our proposed approach to parties using the SMKI service, including by Opted Out Non-Domestic Suppliers? Please give a rationale for your views.**

EDF Energy agrees with the proposed approach to parties using the SMKI service, including by Opted Out Non-Domestic Suppliers. As noted in the consultation document, this approach will avoid the need to replace metering equipment when a supplier chooses to opt a customer into DCC services. An unnecessary meter exchange would increase costs for those suppliers that would prefer to operate smart meters via the DCC. We believe that this may then prove to be a disincentive to suppliers to take on customers with metering systems that are opted out of the DCC and could be regarded as a barrier to switching. There may also be a consequential impact on meter rental charges for such meters if MAPs perceive that there is an increased stranding risk for those meters that are opted out of DCC services.

We recognise that it is likely that a site visit will be required to enable an opted out meter to be operated by the DCC, as a DCC provided communication hub will need to be fitted to facilitate communications. However, we understand that this activity will be able to be carried out by non-technical staff and therefore will have a much lower cost.

**Q8. Do you agree with our proposed approach for the SEC with respect to Liabilities, Warranties and Indemnities? Please provide a rationale for your views.**

EDF Energy agrees with the proposed approach for the SEC with respect to Liabilities, Warranties and Indemnities. We agree that the existing liability regime applying under the SEC will apply between SEC parties when participating in SMKI, such that parties waive their rights to claim against one another in negligence or claim for consequential losses, but face limited liabilities for physical damage (and the costs of site visits) if this arises as a consequence of their breach of the SEC. We believe that a £1 million cap is appropriate.

We await further consultation on these matters.

### 3.7: Providing the SMKI Repository

**Q9. Do you agree with our proposed approach and text for the SEC with respect to the SMKI Repository? Please provide a rationale for your views.**

EDF Energy is concerned that a certificate retrieval request from the DSP has a service level of 30 seconds. We believe that a call to the public key database in the DSP, which is required under normal operations, should be in the range of milliseconds. Our expectation has been that an 'on demand service request will have a total response time of less than 30 seconds. A 30 second response time for a certificate retrieval request from the DSP added to the service request time would mean that the overall service duration does not meet these expectations and would not enable suppliers to meet the needs of their customers.

### 3.8: SMKI Recovery Processes

**Q10. Do you agree with our proposed approach and text for the SEC with respect to SMKI Recovery Processes? Please provide a rationale for your views.**

EDF Energy believes that the SMKI Recovery Key should have a separate root certificate as it is the most critical process. As there are no other controls, this key is a single point of compromise to the whole end-to-end Smart Metering System. However, we understand that this solution is still being discussed in other forums and we are currently awaiting the SMKI provider solution for a third party view on this issue.

### 3.9: SMKI Testing

**Q11. Do you agree with our proposed approach and text for the SEC with respect to SMKI and Repository Testing? Please provide a rationale for your views.**

EDF Energy agrees with proposed approach with respect to SMKI and Repository Testing as we believe that the production of the SMKI and Repository Testing (SRT) approach document appears to align to other testing approach requirements. We agree that the DCC should be required to consult with SEC Parties on the approach and that it should ultimately be subject to approval by the Panel.

However, we are concerned that Section T4.9 of the drafting provides other parties with only 1 months notice (or less should the Secretary of State direct) to commence SRT. We believe that this may be insufficient as we do not yet know the steps required. More time may be needed and so the notice requirements should remain flexible.

**Q12. Where appropriate, when do you consider your organisation will first need to obtain live Device and Organisation certificates to be placed on Devices ordered from manufacturers? This will help to determine when the SMKI Service and SMKI Repository should Go Live. Please provide a rationale for your views.**

EDF Energy plans to be ready to enter the DCC User Integration Testing (UIT) phase at the beginning of Q2 2015. Therefore, to assist our internal readiness to transfer certificates to the manufacturers, we would expect that live Organisational and Device Certificates will be required by January 2015.

EDF Energy's ability to enter UIT is, however, completely dependant upon device manufacturer's readiness. The recently notified delay to the publication of the SMETS2 GBCS is likely to have a knock-on effect to the manufacturer. If a delay is confirmed, this will have to be reflected in the plan for providing suppliers with the SMKI Service and SMKI Repository 'Go Live'.

**Q13. Do you agree that Large Supplier Parties should be obliged under the SEC to be ready to participate in SMKI and Repository Testing? Please provide a rationale for your views.**

EDF Energy agrees that large suppliers should be obliged to be ready to participate in SRT. However, we are unable to comment on the specific legal drafting as it is not yet published (T4.10). We believe that it is essential that the current milestones on the industry Level 1 plan are achieved to allow large suppliers to be ready for commencement of SMKI testing. Furthermore, we believe that one of the defined milestones should ensure that the DCC has delivered the SRT approach. Should any of the key deliverables be missed and delayed, commencement of supplier testing should be correspondingly adjusted.

The DCC must have the capability to test multiple suppliers concurrently.

**Q14. Do you agree that it is sufficient for only one large Supplier to complete SMKI and repository testing for the SMKI Service and repository to have been proved? Please provide a rationale for your views.**

EDF Energy does not agree that it is sufficient for only one large supplier to complete SRT for the Repository to be proved. It is possible that there could be variances in the way that suppliers request and handle security keys. Some suppliers may procure off the shelf solutions and some may use proprietary Hardware Security Modules (HSM). As such we believe that at least two large suppliers should complete SRT.

**Q15. Do you agree that the SMKI entry processes should be aligned with the User Entry Process Testing in relation to the DCC User Gateway and Self Service Interface? Please provide a rationale for your views.**

EDF Energy believes that SMKI entry processes should be aligned to User Entry Process Testing in relation to the DCC User Gateway and Self Service Interface, as this should be more efficient and should avoid any confusion.

We consider that prior to commencement of SRT, parties should be given three months' notice from the publication of the DCC approach.

### **3.10: Other Security Requirements**

**Q16. Do you agree with our proposed approach and text for the SEC with respect to the Location of System Controls? Please provide a rationale for your views.**

We agree in principle with the proposed approach and SEC text with respect to the Location of System Controls, as long as the User Systems covered are very specific. Scope creep should be avoided and there needs to be a clear definition of the boundaries of what these User Systems are comprised of.

There would seem to be a possible contradiction between the G3.29 legal text and the definition of "User Systems" in the glossary.

**Q17. Do you agree with our proposed approach and text for the SEC with respect to the Obligations for Cryptographic Material? Please provide a rationale for your views.**

EDF Energy agrees on the consultation position that where the risk is high enough, a DCC user should use a HSM to FIPS140-3 level 3. However, this requirement is not in the legal draft. We believe that the security requirements and certifications for the HSM should be driven by the specific numbers of meters supported by a single HSM, not just the "large supplier" definition. This is because a large supplier may choose to split out certain smaller customer groups into different hardware solutions where the number of meters affected could be small.

#### **4: Supplier Nominated Agents**

**Q18. Do you think that it is important that MOPs / MAMs are able to access DCC services directly? Please provide a rationale for your views.**

EDF Energy believes that it is important that MAPs, MOPs and MAMs are able to access to DCC services that are directly appropriate to their role. This is likely to support the preferred operating model for small suppliers.

We recognise the need for a supplier driven end-to-end trust model for those DCC services that directly impact the functionality of smart meters. However, we believe that providing direct access to DCC services that are appropriate to a party's role in the market will facilitate a more efficient and cost-effective operating model for smart metering.

We are concerned with the revised drafting of section H2, which goes directly against the assurances and intentions provided by DECC at the original SEC drafting. This section specifically places reliance on suppliers to be able to manage their agents entirely through contractual arrangements. A supplier might have appointed a MOP/MAM, or a DCC user who will access DCC services on behalf of other suppliers, for specific purposes, but they may not wish for that MOP/MAM to access those services on their behalf. While suppliers are ultimately always responsible for the actions of their agents, some functionality within the DCC to support suppliers in granting or withholding access for their agents, at a supplier level, would be useful to help them meet their obligations as drafted in the SEC.

**Q19. Do you have any views on the possible options identified for MOPs / MAMs to access DCC services? Please provide a rationale for your views.**

EDF Energy has the following comments on the options identified for MOPS/MAMs to access the DCC:

Option 1 – EDF Energy does not believe that this option is appropriate as it would require MOPs/MAMs operating on behalf of multiple suppliers to develop multiple interfaces to communicate with those suppliers. This would increase the overall cost of delivering the smart metering roll-out, especially for smaller suppliers. It may also create unnecessary delays in the identification and resolution of issues affecting the operation of individual smart metering systems.



Option 2 – EDF Energy believes that option 2 is overly complex and will create unnecessary overheads in the management of access for MOPs/MAMs to DCC services. While this option does provide direct access to MOPs/MAMs to some DCC services, the separate processes required for agents to qualify as 'Eligible Supplier Agents' as distinct from those required to be DCC user creates unnecessary complexity and avoidable costs. Having a single set of processes to qualify as a DCC user will be simpler, make the process more manageable and reduce overall cost.

Option 3 – EDF Energy supports this option as it provides direct access to DCC services appropriate to the role of MOPs/MAMs, reduces complexity, ensures the costs of using those services are more directly allocated and enforces appropriate security and process controls through the DCC user qualification process. However, we reiterate our point in our response to question 18 in terms of suppliers being able to restrict that access where they wish to carry out these functions themselves.

In summary, EDF Energy has a preference for option 3.

**Q20. Are there other options which should be considered for MOPs/MAMs to access DCC services?**

EDF Energy has not identified any other options for MOPs/MAMs to access DCC services in addition to those detailed in the consultation.

**5.1: Testing Phases**

**Q21 Do you agree with our proposed text for the SEC with respect to Test Phasing, consistent with our decisions on testing arrangements detailed in our recent consultation response? Please provide a rationale for your views.**

EDF Energy agrees with the proposed decisions with respect to Test Phasing and arrangements.

We recognise that Section H has been updated to ensure that users complete entry testing for each of the roles that they expect to perform. This will ensure that testing is appropriate for each user.

Section T appears to reflect DECC's proposals for transitional testing, including SRT. We recognise that the section is intended to fall away at some point in the future, and as such a specific sunset clause should be included to facilitate this. The phases of; device selection, systems integration testing and interface testing all appear to reflect our understanding of the proposed policy. We would reiterate our previous response to the original equipment and testing consultation where we expressed concerns around the potential to use uncertified production standard SMS at 'SIT'.

The addition of SRT, in a similar format, is sensible. We believe that SMKI testing should be mandated for all DCC users relevant to their roles.

**Q22. Do you agree that the term 'Enduring Testing' should be used to encompass both the End-to-End and Enduring Test stages in order to assist comprehension and simplicity? Would the consequential removal of the terms 'End-to-End Testing' and 'User Integration Testing' cause confusion or be undesirable, such that we should reinstate this terminology? Please provide a rationale for your views.**

EDF Energy is concerned that the proposed approach to merge end-to-end testing with enduring testing. We believe that end-to-end testing is specific and essential, as it is the only opportunity where full production standard SMS is tested prior to go live of the DCC. Although this is a 'voluntary' phase, there needs to be clearly defined exit criteria for end-to-end before it cuts over to 'enduring' testing.

It is imperative that all industry parties work towards having a live DCC market with as many suppliers as possible having passed UIT prior to DCC go live. This will reduce the impacts and issues of accredited and non accredited suppliers working in the same market. The definition of UIT should not be extended to include the period of interface testing followed by an additional sequential period of time of up to (e.g.) 12 months.

**Q23. Do you agree with the proposed approach to include the Projected Operational Service Levels within the SEC? Please provide a rationale for your views.**

EDF Energy agrees that it would be prudent to include the DCC Projected Operational Service Level within the SEC. We believe that the clarity and publication of these service levels will set the expectation of users that have not been given access to service levels agreed within the Service Provider contracts. This would ensure that they could not be changed easily without reference to the panel.

We believe that the DCC and its service providers should be required to test to the levels or service procured in the contracts. Furthermore, we believe that they should be required to test beyond those levels and volumes to ensure that the systems and processes are robust and able to meet the demands of the industry.

## **5.2: Issue Resolution during Testing**

**Q24. Do you agree with the need for an issue resolution process in testing? Does the proposed process meet that need? Please provide a rationale for your views.**

EDF Energy agrees that there is a need for a testing issue resolution process. Experience shows that testing issues are inevitable and speedy resolution is essential to ensure that testing is not delayed and remains cost-effective.

Hence, EDF Energy is concerned with the proposed response times of the DCC and service providers to resolve testing issues. We note that they are obliged to act reasonably, but the concurrent testing of all suppliers could lead to significant delays for some. We believe that the SEC should set out appropriate response times for Priority 1, 2 and 3 events.

EDF Energy agrees that the DCC should publish test issues to all users. However, we would be concerned if all of the issues data were published on a publically accessible website, as the DCC is a central component of a critical national infrastructure programme. Defects and issue resolution information could potentially highlight and target points of possible weakness to would-be attackers.

**Q25. Do you agree with our proposed text for the SEC with respect to Issue Resolution? Please provide a rationale for your views.**

EDF Energy largely agrees with the proposed text covering testing issue resolution. However, we have some comments on Section H14.39 which allows a testing participant to raise issues directly with the DCC Service Providers. This is generally inconsistent with the general rule that the DCC Users should only contact service providers via the DCC itself. We recognise in later text that any issues can then be escalated to the DCC, so this could be deliberate. We would suggest that a formal testing sub committee be set up to consolidate and manage testing issues to ensure that all participants are treated fairly and issues resolved within expected timescales.

**6.1: Smart Metering System Requirements**

**Q26. Do you agree with our proposed text for the SEC with respect to Equipment Testing, and configuration of enrolled Smart Metering Systems? Please provide a rationale for your views.**

EDF Energy agrees that the proposed text in Section F of the SEC clearly describes the requirements of participants to test and ensure interoperability of enrolled devices, but would make the following observations on the legal text: Section 2.6 proposes that the Panel be notified of the Assurance Certificates for a particular device model by a party, or by any other person, prior to the device being added to the Certified Products List (CPL). We are concerned that the panel could receive multiple notifications from different parties for the same device combination. It therefore seems appropriate that the CPL is maintained by either the technical sub committee or SECAS to ensure that the panel is not confused by multiple applications. Processes need to be established and defined within the SEC to ensure that certificates are efficiently notified, recognised, suspended and removed without significant risk of DCC Services being unavailable for a particular device.

Likewise section F2.12 obliges the DCC or supplier party to notify the panel of any withdrawal, expiry or cancellation of Assurance Certificates when they become aware. We note that through Commercial Product Assurance (CPA), it is likely that certification changes could be identified by manufacturers as a result of a product enhancement or security attack mitigation. In such cases, suppliers that have inherited these SMS have no central point of reference actively tasked with notifying them of such issues. We believe that the mechanism of CPL should be managed centrally by the technical sub committee or SECAS such that any removals are notified once to the Panel and analysed for their impact. Any device suspensions or uniform security related firmware update requirements for a specific device should have a central mechanism responsible for notifying all affected suppliers that there is a need to apply an update. Furthermore, we recommend the use of a central software configuration library, preferably maintained by the DCC. We believe that there should be a defined process and mechanism for dealing with emergency upgrades required to mitigate a security attack in a controlled manner.

This issue extends to the removal or expiry of any certificate. It seems sensible and cost effective to maintain central management of the CPL to avoid all users building expensive and duplicated systems and processes to manage device certification. Considering Change of Supplier will mean that meters are periodically passed to other suppliers with different manufacturer and MAP arrangements, an uncoordinated CPL will very quickly become unwieldy and expensive to manage.

Furthermore, the requirement to ensure device and firmware security is vital. The future market models and relationships between suppliers, manufacturers and MAPs could vary significantly between suppliers and it will quickly become evident that manufacturers may not know where their meters are located and some MAPs may not keep track other than for purposes of meter rental. A centralised record and reporting ability will significantly reduce the risk of uncertified devices and firmware version being excluded from the DCC.

We note that since the recent consultation on CPA Testing, the CPA recertification period has been extended from two to six years. Whilst we agree with the extended period, we believe that recertification should only be on the basis that the event-based change process should be made more rigorous. The CPA Maintenance Plan should be extended to ensure that a manufacturer includes the CPA Test House in the assessment of any device or firmware changes that the manufacturer deems not in need of full-CPA recertification to include event based changes.

We are concerned that there is no formally defined process for device manufacturers to follow that ensures that all 3 Assurance Certified Bodies are aware of each other's potential dependencies.

**EDF Energy**  
**February 2014**