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Smart Metering Implementation Programme
Department of Energy and Climate Change
Room 103
55 Whitehall
London SW1A 2EY

8 October 2012

Dear Sirs

Consultation on the second version of the Smart Metering Equipment Technical Specifications [URN 12D/258 13th August 2012]

Northern Powergrid is the electricity distribution business for the north east, Yorkshire and parts of northern Lincolnshire, operating through its two licensed subsidiaries; we also operate as a meter asset provider (MAP) for existing meters and new smart meters. Northern Powergrid welcomes the opportunity to respond to this consultation. We have taken part already actively in a wide range of interactions with DECC and its consultants on smart meters, including on the subject of the smart meter specification and look forward to continuing to make a constructive contribution to the implementation programme.

Our detailed responses to the questions are included later in this response, but it may be helpful to summarise our views on the key issues below.

Our key points are:

- It is important to make a distinction between the provision of sending the "last gasp" alert, which we understand is to be provided by the communications hub or the wider communications infrastructure, and outage reporting for regulatory purposes, which we believe is best provided by the smart meter itself. A key advantage of making this distinction is that it would enable outage reporting for regulatory purposes to be available from non-domestic smart meters not opted in to the DCC.
- It is important to resolve the issue of multiparty access to some of the smart meter functionality such as disablement / enablement and load limiting. Including the functionality in the DCC rather than the meter seems likely to provide a more cost-effective solution, but work is required to confirm if this is technically possible. Assuming acceptable arrangements can be developed, the requirement will need to be included as part of the DCC functionality.
- Any measures that improve the ease of installation and commissioning should also aid 'right first time installation' and interoperability with benefits to suppliers, customers and MAPs.

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- We are disappointed to note that, whilst there is provision for an over-voltage warning facility in these meters, there is no provision for the Distribution Network Operator (DNO) to respond remotely to such a warning other than sending a member of staff to investigate. We believe this misses an opportunity to deliver protection to customers.

Yours faithfully

Response to consultation questions

	Chapter 4 – SMETS 2 Development
1	<p>Do you have any comments on the criteria used in the evaluation of the application layer standards?</p> <p>We have no comment to make.</p>
2	<p>Do you agree with the proposal to adopt ZigBee SEP / DLMS as the HAN application layer standards for GB?</p> <p>Yes, unless it is practical in the timescale available to develop either ZigBee SEP or DLMS such that it can be used for both gas and electricity, as this would probably simplify the development of the Companion Specification and its enduring governance.</p>
3	<p>Do you agree that equipment should be required to comply with SMETS and a GB Companion specification for ZigBee SEP / DLMS?</p> <p>Specifying the smart meters robustly to ensure technical interoperability is important to DNOs as they will not be involved in the procurement of smart meters themselves. We therefore support the development of prescriptive specifications such as the proposed Companion Specification on the basis that it will prescribe the smart meter functionality to ensure interoperability. A robust specification that ensures interoperability will also support an efficient change of supplier process, providing benefits to suppliers, customers and meter asset providers (MAPs).</p>
4	<p>Do you agree with the overall approach proposed in relation to the HAN physical layer? If not, please provide a rationale and evidence for your position.</p> <p>We have no comment to make.</p>
5	<p>Do you have any comments on the criteria used in the evaluation of the physical layer of the HAN?</p> <p>We have no comment to make.</p>
6	<p>What are your views on the compatibility of the reserved spectrum 870-876MHz with 868 MHz and the value of considering the use of this band?</p> <p>We have no comment to make.</p>
7	<p>Do you consider that additional measures should be taken to encourage the development of an 868 MHz solution?</p> <p>Northern Powergrid believes that the needs of the consumer should be taken into account in selecting the HAN operating frequency, as the consumer's support is needed not only to smart metering but in the longer term to smart grid applications. In particular, the programme should make it as easy as possible for the consumer to purchase and deploy related smart products and appliances. If the supplier were given the flexibility to select the HAN operating frequency, this would add complexity and cost for the consumer. The 868MHz option would appear to be the enduring solution in that it minimises the number of premises where a wired solution would be required. To encourage the development of an 868MHz solution it might be necessary to place an obligation on suppliers to replace a 2.4GHz communications hub with a dual band communications hub at the request of a consumer who is looking to install 868MHz devices. This would simplify matters for customers looking to connect additional smart products / appliances and incentivise suppliers to encourage manufacturers to develop a 868MHz solution as soon as possible.</p>
8	<p>Do you agree with the approach to allow the market to determine the balance between 2.4 GHz and 868 MHz? If not, please provide rationale and evidence.</p> <p>Please see our response to Question 7</p>
9	<p>What are your views on the costs and benefits of the three options identified for deploying wireless solutions (i.e. 2.4 GHz as the default; dual-band communications hubs; or market led)?</p> <p>Please see our response to Question 7</p>

10	<p>Do you agree with the proposal for a 'fit for purpose' installation obligation on suppliers?</p> <p>Please see our response to Question 7</p>
11	<p>Do you have any views on the proposed approach to developing a wired HAN solution?</p> <p>It is important to select the wireless HAN technology to minimise the locations where a wired HAN needs to be used, as installing a wired HAN would be more disruptive for the consumer. Having done this, developing a small range of standard wired solutions quickly is sensible.</p>
12	<p>Do you agree with the proposed scope of functional requirements for a communications hub? Are there any other functions that should be included and what would be your rationale for including those functions (including estimated costs and benefits)?</p> <p>Paragraph 63 states that the communications hub should be capable of issuing alerts on detection of a power outage and on the restoration of supply. Northern Powergrid considers it important that these functions should be provided by the Smart Metering System but are indifferent as to whether the functionality should be provided by the communications hub / infrastructure or the electricity meter. We understand that the communications hub / upstream infrastructure might be best placed to initiate a power outage alert, but believe that issuing an alert on the restoration of power is probably best performed in the Smart Meter as the logic required to ensure that power outage reporting only relates to power outages lasting more than 3 minutes is probably better managed in the electricity meter.</p> <p>Paragraph 65 requires that the power source for a standalone communications hub should be taken from the unmetered supply from the meter. It goes without saying that the arrangements for achieving this must not compromise the safety of the installation (either when fitted or after such a device has been removed).</p>
13	<p>Do you have views on the specification for an 'intimate' interface between electricity meters and communications hubs?</p> <p>We have no comment to make.</p>
14	<p>Do you agree with the Government's marginal preference for the CSP-led model or communications hub responsibilities, or do you prefer the supplier-led model? Please provide clear rationale for the advantages and risks associated with your preferred option.</p> <p>Having a single party controlling the installation process will provide clarity for industry parties and consumers alike. However, having a CSP-led model for ensuring the performance of communication hubs may reduce technical interoperability issues when compared to a supplier-led model as the CSP may be better placed to drive a common specification that interfaces with the remainder of the communications system across different suppliers for such things as installation, commissioning and testing.</p>
15	<p>Do you agree with the proposal that a CHTS-compliant communications hub should not be mandated for opted out non-domestic sites and that suppliers should be free to use whatever type of communications equipment best supports their processes and WAN service?</p> <p>Power outage detection is likely to be included in the communications hub. If there was no obligation for an opted out non-domestic consumer to have a CHTS compliant communications hub, power outage detection might not be available for such customers. This would reduce the smart meter benefits delivered to the non-domestic customer and reduce the amount of information available to the DNOs in a power outage, which could mean that it would take longer to restore supplies to domestic and opted in non-domestic customers. Power outage detection is an important customer benefit, and we consider that non-domestic consumers should have a CHTS communications hub, or at least be mandated to have equivalent power outage functionality.</p>

16	<p>Do you agree that the gaining supplier should bear the costs of installing an appropriate communications hub if they decide to switch between opted in and opted out?</p> <p>We have no comment to make.</p>
17	<p>Do you agree that the design and implementation of outage reporting functionality should be assigned to CSPs, documented in the communications hub technical specification?</p> <p>There is a distinction to be made between power outage reporting and power outage detection.</p> <p>Power outage reporting, as required for regulatory purposes, can be provided by the electricity meter. This simply requires the meter to time stamp when the incoming supply is lost and subsequently restored. If the time difference between the two events is greater than 3 minutes, an alert should be sent to the DNO once power has been restored, together with the associated event time stamps.</p> <p>It is the power outage detection ("last gasp") functionality which creates the need for some form of power supply to be included to enable an alert to be sent to the DNO when the outage persists for more than 3 minutes. It is this second requirement which we recognise could be best provided by the communications hub / wider communications infrastructure as determined by the CSP.</p>
18	<p>Do you agree that it would be inappropriate to require meters operated outside DCC to be required to implement outage reporting? Please provide rationale to support your views</p> <p>We appreciate that there could be logistical difficulties if meters operating outside DCC were required to provide "last gasp" facilities, although as indicated in our response to question 15 the absence of this facility would reduce the usefulness of "last gasp" information received by DNOs. However we believe that if power outage reporting (as described in our response to question 17) was provided in the electricity meter, then it would be reasonable for this information to be sent to the DNO via the supplier as the information would only be required in reporting timescales. In order to maximise the wider smart meter benefits, arrangements would need to be in place between suppliers and the DNO to exchange other smart meter data such as power flow and voltage data. The provision of outage reporting information could form part of such a data exchange.</p>
19	<p>Do you agree that maximum demand registers should be included in SMETS? Please provide evidence to support your position and provide evidence on the cost implications of delivering this functionality via back office systems or via the meter.</p> <p>We agree that specific maximum demand registers to meet the DNO's requirements should be included in SMETS2. The justification for this was developed by Northern Powergrid and presented as part of the SSAG ENA Functions Working Group.</p>
20	<p>Do you agree with the proposal not to include the capability to generate additional voltage alerts based on counter thresholds in SMETS 2? Do you have any evidence that could justify including this functionality in SMETS 2?</p> <p>Yes. The review carried out by Northern Powergrid and presented as part of the SSAG ENA Functions Working Group concluded that this functionality couldn't be justified on economic grounds.</p>
21	<p>If DNOs were permitted to access remote disablement functions, should control logic be built into DCC systems or meters? If the logic should be built into meters, should the logic be specified in SMETS 2? Please provide rationale to support your position including estimates of the cost of delivering this functionality under the different options being considered and any evidence relating to safety issues associated with each option.</p> <p>The network-related benefits associated with remote disablement and enablement are documented in the ENA report 'Analysis of Network Benefits from Smart Meter Message Flows' 30 March 2012 which has previously been shared with the programme team. We</p>

	are indifferent as to whether the functionality to manage the use of such control is located in the meter or DCC. However we were of the view that there was a general acceptance that the management of multiuser access would be most economically delivered by the DCC rather than within the smart meter. ES.1 in the IDTS described the functionality that would be required to manage such access and it would be worth the programme confirming that this functionality, or something equivalent, could be provided by the DCC as the functionality described in ES.1 is relatively complex.
22	<p>Do you agree that variant smart electricity meters should be specified in SMETS 2 and that the cost uplift for variant smart meters is similar to that for variant traditional meters? Please provide evidence of costs to support your views on cost uplifts.</p> <p>Yes, we agree that the meter variants, as developed by the SSAG Meter Variants WG should be included in SMETS2 in order to accommodate existing metering arrangements and pave the way for providing smart grid functionality. Northern Powergrid has been involved in the WG developing these variants.</p>
23	<p>Do you agree that randomisation offset capability should be included for auxiliary load control switches and registers as described above? Do you have views on the proposed range of the randomisation offset (i.e. 0 – 1799 seconds)? Please provide evidence on the cost of introducing this functionality.</p> <p>The existing Radio Teleswitching (RTS) arrangements allows for 7.5 minute resolution of switching times i.e. the DNO and Supplier can agree 'nominal' switching times, on the hour, 7.5 mins past, 15 mins past and 22.5 mins past, such that the off peak demand can be divided in 4 chunks across the half hour period. Within each 7.5 minute time period the RTS itself has a random allocation of +/- 3.5 mins which in theory would randomise the demand across a 7 min period. The effect of this is that the present industry arrangements allow demand switching to be smoothed across the whole of the half hour period; four chunks established between the Supplier and the DNO which are then smoothed individually within the RTSS. The proposal to have a randomisation offset of between 0 and 1799 seconds retains the present arrangements. We support this position. Not incorporating such a randomisation facility could result in significant off peak load switching on the hour and half hour which would create power quality issues on distribution networks (voltage dips) and would have significant implications for the operation of the transmission system.</p>
24	<p>24. Do you support Option 1 or Option 2 for 'pairing' a CAD to the HAN? Please present the rationale for your choice and your views on the implications that these options have for the technical design of the solution.</p> <p>We have no comment to make.</p>
25	<p>If Option 2 were adopted, do you agree that obligations should be placed on energy suppliers to support this process by submitting 'pairing requests' to the DCC on request from their consumers?</p> <p>We have no comment to make.</p>
26	<p>Do you consider that other CAD installation options should be pursued? If yes, please explain the approach you favour and your reasons.</p> <p>We have no comment to make.</p>
27	<p>Do you agree with the proposal to include in SMETS 2 a specification for a PPMID, connected via the HAN, as described above?</p> <p>We agree that there would be customer benefits associated with the provision of a PPMID for use when access to the meter is not easy, as they could reduce the instances when it was necessary to relocate a service termination. Relocating a service termination introduces cost to the supplier and inconvenience to the consumer.</p>
28	<p>Would including the capability to enable gas and electricity supply through a PPMID connected via (a) a wireless HAN or (b) a wired HAN meet GB safety requirements? What impact would including this capability have on the cost of smart metering</p>

	<p>equipment? Please provide evidence to support your answers.</p> <p>We are aware of safety concerns associated with the possibility of restoring gas supplies when the consumer is not present, but believe that there are no comparable issues associated with restoring electricity. Custom and practice is for electricity supplies to be restored by the DNO following outages without confirmation from the consumer.</p>
29	<p>Do you agree with the proposal that the communications hub should be specified such that it can support multiple smart electricity meters? How many smart electricity meters should be supported by each communications hub?</p> <p>It would be prudent for the communications hub to be specified such that it can communicate with at least a further two smart electricity meters, to accommodate two different forms of microgeneration e.g. PV and microgeneration.</p>
30	<p>Do you agree that a specification for a HHT interface to the HAN should be defined? If yes, please identify the functions that this interface would need to support and the scenarios in which such functionality could be required.</p> <p>From a meter asset provider perspective, a clear specification for an HHT interface to the HAN could help to avoid unnecessary equipment exchanges resulting from incorrect programming, incomplete installation or incorrect equipment being used. Anything that supports 'right first time' installation could also reduce repeat installation/commissioning visits and urgent metering services (UMETS) calls.</p>
Chapter 5 - Governance and Assurance of Security and Interoperability	
31	<p>Do you agree with the proposed approach to the governance of security requirements? If you propose alternative arrangements please provide evidence to support your views.</p> <p>The approach proposed seems reasonable.</p>
32	<p>Do you agree with the proposal to establish independent assurance procedures for DCC and DCC users? Please explain your views and provide evidence, including cost estimates where applicable, to support your position. Comments would also be welcome in relation to the impacts and benefits of the proposed approach with regard to small suppliers.</p> <p>We have no comments to make.</p>
33	<p>Do you agree with the proposal that re-testing should occur at least at set intervals and more frequently when significant changes to systems or security requirements are introduced? Please explain your views.</p> <p>We have no comments to make.</p>
34	<p>Do you agree with the proposal to establish an independent security certification scheme for smart metering equipment? Do you have any views on the proposed approach to establishing a certification scheme or evidence of the costs or timelines for setting up such a scheme or submitting products for certification?</p> <p>We have no comment to make.</p>
35	<p>Do you agree that sanctions for non-compliance with security requirements should be included in the SEC? Do you have views on the nature of the sanctions that might be imposed?</p> <p>We have no comments to make.</p>
36	<p>Do you agree with the proposal to, in effect, extend the arrangements already proposed for SMETS installations prior to DCC operation, to all installations being operated outside DCC? Please provide evidence of the costs that might be incurred and the impact of this approach on small suppliers.</p> <p>We have no comment to make.</p>
37	<p>Do you agree that interoperability is central to the development of a successful smart metering solution and that activities related to the assurance of SMETS equipment should be governed by SEC? Please provide views on the governance</p>

	<p>arrangements that would be appropriate for assuring interoperability of smart metering equipment.</p> <p>From a DNO perspective, it is essential that smart metering equipment is interoperable so that each smart meter behaves in the same way in response to a network related configuration / command and that data received is in a consistent structure. There needs to be a common structure for all information being exchanged between the network operator and smart metering system; this needs to be prescribed in detail. It is our expectation that this degree of detail will be included in a GB Companion Specification and that an Assurance Certification process would be required to ensure that equipment conforms to the specification. Given the importance of this requirement, it is essential for the arrangements to be formally governed; a technical subcommittee of the SEC seems appropriate.</p> <p>We also believe that interoperability is essential to reduce unnecessary meter changes, including on change of supplier. Unnecessary meter changes would add cost to the programme and adversely affect customers and MAPs.</p>
38	<p>Do you agree with the creation of an 'approved products' list and the requirement on suppliers and CSPs to obtain, retain and provide evidence of appropriate certification should apply regardless of whether they intend to enrol the equipment in DCC?</p> <p>Yes, this appears to be a robust approach to ensure interoperability.</p>
39	<p>Do you agree that protocol certification (against a GB Companion Specification) should provide adequate assurance that a product will meet interoperability requirements? Please explain your views and identify any additional assurance testing that you consider to be necessary and the rationale for including such testing.</p> <p>Yes, this appears to be a robust approach to ensure interoperability.</p>
	Chapter 6 - Operational licence conditions
40	<p>Do you agree with the Government's proposals to require energy suppliers to operate specific aspects of smart metering equipment functionality for domestic consumers? Please provide rationale to support your position.</p> <p>We have no comment to make.</p>
41	<p>What are your views on the Government's proposals to require energy suppliers to operate specific aspects of smart meter equipment functionality for microbusiness, but not other non-domestic, customers?</p> <p>We have no comment to make.</p>
42	<p>Do you agree that the licence conditions as drafted effectively underpin the Government's policy intentions for consumer operational requirements?</p> <p>We have no comment to make.</p>
43	<p>What are your views on the Government's proposals for obligations to be included in the SEC for information to be made available to Network Operators and ESCOs via the DCC?</p> <p>Delivery of the network benefits from smart metering is dependent upon the DNO being able to access information from smart meters. Capturing the need to do this in the SEC seems sensible. In addition to requiring the DCC to deliver information to the DNO, there should be a requirement for the DCC to provide the services to the DNO e.g. to configure the smart meter and respond to commands / instructions (subject to the appropriate governance).</p>
44	<p>Do you agree with the Government's proposals for the timing of the introduction of operational requirements? Please explain your reasoning.</p> <p>As mentioned in answer to Q43, in order to deliver the network benefits, access to agreed smart meter data is essential. However we recognise that different arrangements will be made to facilitate providing such network related information from non-enrolled meters.</p>

	<p>Accessing such data as soon as it becomes available would be the optimum arrangement. However, given the relatively small numbers of non-enrolled meters, and the need to set up separate systems, potentially deferring providing this information until 2019 is probably pragmatic.</p>
45	<p>Do you agree with the proposed changes to the smart metering regulatory framework to reflect the CSP-led model for communications hub responsibilities? Are any other changes necessary? We have no comment to make.</p>
46	<p>Do you agree that the equipment development and availability timelines are realistic? Please give evidence. We have no view on how equipment manufacturers may view the equipment development and availability timescales. However we understand that working groups have suggested that any party taking part in the initial testing and trialling ahead of SMETS2 should not have to be re-accredited. This has the obvious potential to shape the market in terms of available products and as such include or exclude some working practices and equipment. This may therefore result in any participants who come along later having different ideas and methods and be potentially subject to a separate/different accreditation arrangement.</p>
47	<p>Do you agree that SMETS 2 should only be designated when the Government has confidence that equipment to satisfy the new requirements is available at scale? Should a further period of notice be applied to ensure suppliers can manage their transition from SMETS 1 to SMETS 2 meters? Given that SMETS2 meters have enhanced functionality from a Network Operator perspective we would like the SMETS2 meter specification to be finalised and designated as soon as possible, and would not support a transition arrangement that was any longer than necessary.</p>
48	<p>What are your views on when responsibility for the SMETS modifications process should transfer from the Government to the SEC? We agree that the responsibility for SMETSs modification should transfer to the SEC. Rather than explicitly link this stage to major policy decisions, we believe that it would be better to link the transfer to the point in the process where there is no longer a need for the significant level of technical discussion that is currently taking place. Over recent years, significant technical expertise has been developed; this expertise should be retained until no longer needed as part of the programme, unless arrangements are made for this expertise to be managed under the auspices of the SEC. At the moment there still seems to be a significant amount of detailed technical work that needs to be completed by the programme.</p>
49	<p>Which of the options (standing sub-committee or non-standing sub-committee) would you prefer in relation to modifications to the SMETS? Initially, until there is a feel for the workload of the committee it would seem reasonable for it to be set up as a standing sub-committee. This would ensure a degree of continuity that isn't always achieved with non-standing sub-committees.</p>
50	<p>Are there any particular areas of expertise that the sub-committee will need to fulfil its role, in terms of membership composition? From a DNO's perspective, there is a requirement for someone on the sub-committee to understand the network operators' interaction with smart metering. This interaction includes use of data for network planning and operational purposes and for commercial / metering purposes.</p>