



Response to Smart Metering Implementation Programme draft licence conditions and technical specifications for the rollout of gas and electricity smart metering equipment

Executive Summary

1. E.ON UK are keen to ensure that customers can enjoy the benefits of smart meters as soon as possible. We have already announced plans to carry out extensive trials and intend to install smart meters for all new and replacement activity once there is certainty over the smart metering system technical specification and the supply chain is able to deliver compliant products. The full range of smart metering benefits will not be available to customers until the DCC is in place, so we see this as the key dependency for commencement of mass roll out activity. Once the DCC is established we remain committed to largely completing mass rollout of smart metering within 5 years.
2. We recognise that it is important that a completion date is set in the licence conditions. Because of the dependence on central programme delivery and in particular the availability of the DCC we suggest that any date should be subject to completion of specified conditions (conditions precedent). We would therefore suggest that the SMIP should consider agreeing with industry a comprehensive set of pre conditions for the programme delivery dependencies required to complete roll out.
3. In order for the licence conditions to work effectively, interoperability issues must first be resolved for the technical specification. We consider the delivery and agreement of interoperability issues to be a key SMIP role. The SMIP must ensure clear responsibility for HAN and WAN module selections and for remaining outstanding technical specification issues. Interim governance arrangements are required to manage the resolution of the outstanding issues, and to provide robust change control during the foundation period until enduring arrangements are established.
4. It is unlikely that a HAN solution will be agreed in time for initial submission of the SMETS to the EU. The HAN will however form part of the smart meter and some form of certainty is required to avoid the risk of asset stranding. This could be delivered for the Foundation period by;
 - a. Providing flexibility in the definition of SMETS to enable a compliant smart metering system to be delivered by an unspecified HAN which satisfies agreed requirements.
 - b. Obliging the DCC to adopt meters which operate on approved Foundation HAN and
 - c. DCC providing backward compatibility so that the metering system can continue to work following change of supplier.

In parallel work should continue under the programme to identify the enduring HAN solutions. Selection should be made on objective evaluation criteria designed to identify the technically proven and cost effective solutions for all UK property types and metering



locations. Trials should be carried out to establish the preferred solutions which we are keen to support. This work should be completed as soon as possible during the Foundation period and introduced in advance of DCC go live. There should be a second EU submission including the selected HAN(s).

5. Because of the additional costs and potential inconvenience to customers of providing a communications hub which is separate from the meter we believe there would be advantages in removing an obligation to install a smart gas meter if a smart electricity meter is not already in place. This is because there will be issues over available space at the meter position, battery management issues and / or the potential requirement for re-wiring in the customer's premises once the electricity meter is fitted. Our preference is for an intimate solution to be the choice.



Consultation Questions

Q1. The Government is seeking new evidence and views on the impacts of specifying a completion date that is in the earlier part of 2019.

1. We are keen to ensure that customers can enjoy the benefits of smart meters as soon as possible. We have already announced plans to carry out extensive trials and intend to install smart meters for all new and replacement activity once there is certainty over the smart metering system technical specification and the supply chain is able to deliver compliant products. The full range of smart metering benefits will not be available to customers until the DCC is in place, so we see this as the key dependency for commencement of mass roll out activity. Once the DCC is established we remain committed to largely completing (to 90%) mass rollout of smart metering within 5 years.
2. We recognise that it is important that a completion date is set in the licence conditions. Because of the dependence on central programme delivery and in particular the availability of the DCC we suggest that any date should be subject to completion of specified conditions (conditions precedent). We would therefore suggest that the SMIP should consider agreeing with industry a comprehensive set of pre conditions for the obligation to complete roll out.
3. Until a base-lined plan has been delivered it is hard to specify a firm end date.
4. We welcome the decision that no rollout targets will be set and believe that a close working relationship between suppliers and government/Ofgem is a better means of providing the assurance that individual supplier rollout plans are robust and on target for delivery. Each supplier's rollout plans will depend on there being confidence of the obligation on all suppliers being enforced, to ensure a level playing field across the industry.
5. Our commitment to substantial roll out within 5 years is based on the assessment of our ability to train and recruit field staff to the required quality. Any further acceleration would need to take into account the availability of labour and the impact on roll out cost of higher demand.
6. As shown in the image in the confidential Appendix A separate to this response, our plans are also impacted by the shape of the ramp up and down of activity. Our Foundation period activity is essential preparation for this scale of activity. We have a significant further ramp up of activity once the DCC is fully operational. The impact of an earlier finish would involve operating an installation programme at full capacity for a



longer period than previously envisaged with a sharper cliff face potentially creating additional staffing issues.

7. In defining reasonable steps, learning can be taken from current recertification programmes and policy exchange visits for electricity and gas metering. A number of attempts to contact customers are made including a number of visits to the customer premise.
8. In the absence of warrants the programme should consider what should happen to the small residue of customers who refuse access to their premises to affect a meter exchange to smart. Consideration needs to be given to striking a balance between the costs of supporting a small number of residue dumb meters through legacy systems versus potential customer disruption to effectively replace a dumb meter for smart.
9. Whilst the CERG has only just started to mobilise we also have a nervousness over how, when and what any central government messages will be available to assist the overall success of the programme and specifically with access to customer premises.



Q2. Do you think the licence condition (AA1-2) as drafted effectively underpin the policy intention to complete rollout of smart metering equipment by a specified date? Are there any areas where you consider further clarification is necessary? Please explain your reasoning.

10. We are comfortable with the licence condition as currently drafted.
11. It is worth noting however that a customer can refuse to take a smart meter and there is also a dependence on WAN/HAN communications infrastructure being available. These dependencies should be reflected in the obligation.
12. In addition the SMIP should consider agreeing with industry a comprehensive set of pre conditions that will form a go / no go decision for the obligation. This will assist the minister and the wider programme in understanding the issues faced and provide confidence that when the decision to implement the obligation is taken it is with the knowledge that this can be delivered.

Q3. Do you agree that the licence conditions as drafted effectively underpin the policy intention to deliver smart metering equipment with the functionality and interoperability required to meet the business case? Please explain your reasoning.

13. We assume that the question refers to the condition AA-1 as set out in annex 3. If this assumption is correct, we have no issues with the drafting.
14. The licence condition of itself will be insufficient to deliver interoperability. Further development of the technical specification and process definition will also be required.

Q4. Do you agree that smart metering equipment should be compliant with the SMETS extant at the time of installation and that it should continue to be compliant with that version of the SMETS through the operational life of the equipment? Please explain your reasoning.

15. Yes.
16. To avoid future stranding issues a principle of backwards compatibility should apply wherever possible.
17. Governance of the specification will need to ensure an adequate period of notice of change to ensure any potential supply chain issues are avoided i.e. stock does not become stranded.



Q5. Do you agree that in some exceptional circumstances suppliers should be required to retrofit smart metering equipment that has already been installed? Please explain your reasoning.

18. Retrofitting should be a last resort as focus should be on the challenge of replacing current dumb metering in line with the government's business case. If compliant smart meters are already installed there should be no reason to exchange/attend the site again unless there is a fault or for safety purposes. The SMETS and WAN Comms solution should be adequate to enable remote firmware upgrade.
19. Governance arrangements of the SMETS should be carefully considered to ensure only truly exceptional circumstances that could not otherwise have been foreseen result in any retrofitting of meters.
20. As the SMETS naturally develops over time it is imperative that any revised requirements are backwards compatible. This is the normal process for technology development in other industries such as IT and communications.
21. Investments are being made by Meter Asset Providers on expected life of assets. Therefore meters should stay installed as long as technically possible to avoid any future stranding risks. Retrofitting will impact rollout capability and the benefits identified in the Impact Assessment.

Q6. Do you think the licence conditions (AA3-6) as drafted effectively underpin the policy intention for the new and replacement installation of smart metering equipment? Please explain your reasoning.

22. We are comfortable with the proposals.
23. We note the use of the term "Relevant Electricity Supplier/Relevant Gas Supplier" is used but cannot trace a definition for this. Meters are installed in some situations today without any direct involvement from suppliers, for example new connections or emergency metering visits.
24. The condition should apply to all metering fitted.

Q7. What period of notice do you think would be appropriate before the new and replacement obligation comes into effect? Please explain your reasoning.

25. There is a clear dependency for industry to agree an appropriately base lined and fully governed version of the SMETS. To do this we need resolutions to HAN, WAN module issues and other outstanding SMETS issues which will then require E.U. approval. In

addition the SMIP should consider lead times for manufacturers to scale up product build, testing and shipping to suppliers for utilisation in their rollout plans. Suppliers will also need to consider impacts to their dumb meter stocks and longer term impacts to PPMIP services and factor this in readiness planning for the obligation effective date.

26. We would expect this to all be in place for the currently expected 2014 start date for the DCC and hence suitable for the new and replacement obligation to start.
27. We have committed to and maintain our commitment that we shall largely complete (to 90%) a mass rollout of smart metering within 5 years from the DCC having fully functional operations to support such a rollout. Therefore, we would be comfortable with a new and replacement obligation coming into effect at the time the DCC is fully operational.
28. There appears to be an assumption on the part of government that setting a start and end date for the rollout are separate decisions. This is not the case. In our view we see a direct link between the DCC having fully operational services facilitating a mass rollout of smart metering.
29. Industry will have to be well prepared for the start of DCC activities. We see no issue for any supplier large or small being compliant with such an obligation.

Q8. What contribution do you think the interoperability licence condition as drafted could play in ensuring that suppliers work together to ensure smart metering equipment is interoperable? Please explain your reasoning.

30. In order for the licence conditions to work as per the aspiration, interoperability issues must first be resolved by the programme.
31. We consider the delivery and agreement of interoperability issues to be a key SMIP role.
32. Suppliers by themselves are unable to resolve these issues. If this were the case this would have happened. Competition law precludes suppliers agreeing issues such as selection of HAN.
33. The SMIP must take on the role of resolving the HAN, WAN module selection and other outstanding technical specification issues. To do this interim governance arrangements are required to manage the resolution of the outstanding issues, and to provide robust change control during the foundation period.

34. It is unlikely that a HAN solution will be agreed in time for initial submission of the SMETS to the EU. The HAN will however form part of the smart meter and some form of certainty is required to avoid the risk of asset stranding. This could be delivered for the Foundation period by;
- a. Providing flexibility in the definition of SMETS to enable a compliant smart metering system to be delivered by an unspecified HAN which satisfies agreed requirements.
 - b. Obliging the DCC to adopt meters which operate on approved Foundation HAN and
 - c. DCC providing backward compatibility so that the metering system can continue to work following change of supplier.
35. In parallel work should continue under the programme to identify the enduring HAN solutions. Selection should be made on objective evaluation criteria designed to identify the technically proven and cost effective solutions for all UK property types and metering locations. Trials should be carried out to establish the preferred solutions. This work should be completed during the Foundation period and introduced in advance of DCC go live. There should be a second EU submission including the selected HAN(s).

Q9. Do you think the licence conditions as drafted effectively underpin the policy intention to ensure smart metering equipment is interoperable? Please explain your reasoning.

36. Whilst we understand the aspirations behind the proposed conditions, the drafting appears to be setting an unrealistic expectation on suppliers. In order for the licence conditions to work interoperability issues must first be resolved by the programme.
37. We consider the delivery and agreement of interoperability issues to be a key SMIP role.

Q10. What role could a dispute resolution mechanism have in ensuring interoperability? What key features should a mechanism have?

38. A dispute mechanism is required.
39. However precise the definition there will be circumstances where disputes could arise over interpretation or effective operation. Under these circumstances such a mechanism is required. A robust assurance regime would reduce but not eliminate likelihood of disputes occurring.



- 40. Such an assurance regime must ensure all elements of the Smart metering system (SMS) are compliant i.e. accredited and passed in accordance with the agreed testing regime adopted under the governance process.
- 41. These arrangements should set out clear timescales and enable speedy resolution to minimise impacts for customers.

Q11. For the smaller non domestic sector do you agree that where there is a Current Transformer meter then suppliers should be required to install an advanced rather than smart metering equipment? Please explain your reasoning.

- 42. Yes. There is currently no technological solution for these types of meters.
- 43. We are firmly of the view that the DCC should be mandated for all customers segments and meter types within those segments.
- 44. We consider there will be substantial benefit for suppliers and customers alike utilising one central service provider for both data and communications services.
- 45. A similar issue exists for gas metering where some domestic customers will have a U16 meter installed for which there is currently no smart solution available. In these cases a data logger would seem the most pragmatic solution.

Q12. Do you think the licence conditions as drafted effectively underpin the policy intention for Current Transformer meters? Please explain your reasoning.

- 46. We are comfortable with the proposed drafting.
- 47. Similar issues will arise in gas metering where meters larger than U6 are installed. Corresponding conditions may be required.

Q13. Do you think under the new and replacement obligation gas supplier should be given the option to wait for the installation of electricity smart metering equipment before installing gas smart metering equipment? Please explain your reasoning.

- 48. Because of the additional costs and potential inconvenience to customers of providing a communications hub which is separate from the meter we believe there would be advantages in removing an obligation to install a smart gas meter if a smart electricity meter is not already in place. There are possible issues over available space, battery management issues and / or the potential requirement for wiring in the customer's premises once the electricity meter is fitted.



Q14. Do you think there are any barriers to gas smart metering equipment being installed before electricity smart metering equipment? Please explain your reasoning.

49. There are a number of practical issues that should be considered for the deployment of a separate communications hub to support gas only smart meter installations. These are;
 - a. Power for the communications hub; and
 - b. Space.
50. Ensuring a reliable and effective power supply to the communications hub could be achieved either by a battery powered device or a wired solution to the electricity meter or main fuse cut out. Both of these have limitations.
51. The battery may last at best less than 10 years, but if during this period the gas meter is used in PP mode or receives firmware upgrades then its life will be considerably reduced. This may require a revisit to replace the battery before the electricity meter is replaced.
52. A wired connection to a dumb electricity meter or main fuse cut out will not be possible as the vast majority of dumb electricity meters and fuses have no standard interface for such a connection. Changes to DCUSA would be required to enable any connection via the cut-out.
53. In instances where a separate comms hub may be utilised this may cause issues with customers intentionally and unintentionally disconnecting the power to the Comms hub.
54. The module itself may not be able to distinguish between true network outage and a loss of power between meter and communication hub e.g. simple “unplugging” by a customer. This may result in confusion as to which part of the industry should respond in such instances.
55. Space is a further consideration for deployment of a separate communications module. Meter boxes have reduced in size over the past 20 years and older housing stock and meters in communal cupboards simply do not have room on the meter board to fit any additional equipment.
56. A further issue to be considered is that of how the module is treated at the point the electricity metering system is changed to smart. The gas only module could be connected to the electricity smart meter if this is within reasonable distance and the design enables a standard connection. This may however, increase the length and cost of the installation visit.



57. Our preference therefore is for an intimate solution for the communications hub. A separate Hub inevitably adds costs and complexities and potentially additional waste.

Q15. What do you think the implications would be of extending the new and replacement obligations to the licences of other relevant parties in relation to installing smart metering equipment in new developments without the involvement of the supplier? Do you think mechanisms other than licence conditions could be considered to achieve the policy objective? Please explain your reasoning.

58. It would seem sensible to extend the same obligations to all relevant parties installing meters in new developments including SMiCoP compliance. This would ensure that customers on these independent networks receive the same services as others in traditional Distribution regions.
59. In doing so, we are concerned that meters being installed in new developments are treated no differently to other market areas and that the supplier hub principle i.e. supplier choice should prevail. Enabling supplier choice in this area will ensure a consistent approach for all customers and potentially reduced costs, as separate business processes that exist today to cater for Independent Gas Transporters (IGTs) will no longer be required.
60. Supplier choice is an important principle and this should extend to choice over Meter Asset Provider (MAP), Meter Operator/Meter Maintainer (MAP/MAM) and the IHD installed in the home. On the IHD we accept there may be instances in new build where the “end customer” is not present. In these circumstances suppliers will need to develop follow up arrangements once the customer has taken up residence.
61. Our experience to date with IGTs is that the supplier has no choice over the initial meter installation. This is agreed upfront between the IGT and housing developer, therefore the supplier has to take what is installed rather than an ability to appoint preferred Metering services providers for both Meter Asset Provision and Meter Operations/Meter Asset Maintenance (MOP/MAP).
62. A practical issue for new developments where gas is being installed is the timing of the gas smart meter installation. It would be sensible given the issues highlighted in answer to Q14 to ensure that the electricity meter is installed first. This may naturally occur if as suggested above suppliers have the ability and flexibility to appoint their preferred services providers for these sites, thus ensuring a single dual fuel meter installation.



Q16. Do you think the rollout of smart metering equipment has any specific implications for the provision of emergency metering services? Please explain your reasoning.

63. There is currently no obligation on electricity and gas distribution businesses to provide emergency metering services. Emergency metering services are provided through commercial arrangements between suppliers and the distribution businesses.
64. An exception to these arrangements is Independent Gas Transporters which have direct arrangements with gas distributors/transporters and no direct relationship with suppliers. This means rather ad hoc industry processes have developed resulting in instances where meter details are not provided in a timely manner. This results in a sub standard service provision for customers. According to the AMO there were 36k meter changes in 2010 by gas transporters under PEMS.
65. We are concerned that any obligation placed on distribution businesses to provide such services is clear in its requirements and has an enduring element, such that these services cannot be withdrawn without prior consultation. Service obligations should not be burdensome on the distributor as this may result in a reluctance to provide the services on an enduring basis.
66. Obligations on emergency metering service providers should ensure that where a smart meter is already in place this is replaced with a smart meter. Where a dumb meter needs replacing the service provider should replace with a smart meter wherever possible. In instances where a dumb gas meter is deemed to be faulty and in need of replacing it may be prudent to replace with a dumb meter of same type as happens now, to avoid complexities of separate communications devices and power for such a device if the electricity meter has not already been upgraded to smart prior to the emergency visit. (Also see response to Q14.)
67. In developing these services and business processes there may be additional follow up visits /calls from suppliers to explain to customers how the smart metering system (IHD) works and to provide any follow up advice in line with the SMICoP.
68. Suppliers and customers alike value emergency metering services as this provides a one stop shop for no supply metering issues for out of hour's periods.
69. In order that emergency metering provision can continue post the mandation of smart metering, it is absolutely necessary that an agreed metering system specification is available and governed through appropriate change control procedures.
70. There should also be clear arrangements in place that all industry parties understand with regards to how any exceptional circumstances should be managed in an



emergency/no supply instance e.g. how vulnerable customer issues should be managed by DNO/suppliers under smart arrangements. Customers will naturally expect an improved awareness post smart installation.

71. In developing emergency metering services for the future smart world, consideration must be given to business process design impacts. For example agreement as to how the meter is configured during an emergency visit, is this done locally or over the air via the DCC/WAN? The latter may have implications for DCC services whilst the former may require further Hand Held Terminal development.
72. Our preference is for the configuration to be done via the DCC in all instances as security requirements and development of the Hand held Terminal may add additional cost and inflexibility to these devices in the future.

Q17. What period of notice do you think would be appropriate before the obligation to provide an IHD comes into effect? Please explain your reasoning.

73. We can only start procuring these assets to an industry spec once the HAN and other outstanding elements of the SMETS have concluded. The IHD forms part of the SMETS. Therefore a base lined appropriately governed SMETS needs to be agreed. To do this, resolutions to HAN, WAN module issues etc plus EU approval is required. The programme should also consider lead times for manufacturers to scale up production build, testing and shipment to suppliers for installation.
74. The proposal to bring in the licence condition in a dormant state to be activated later is a pragmatic approach. 12 months would seem to be a sensible lead time from the point of an agreed specification and E.U approval. If the programme can get this reduced without risking the quality of the products themselves and industry processes to support the Foundation period then that would be a bonus for the programme.

Q18. Would the consumer changing their supplier raise any particular issues with regard to the approach set out for the provision of IHDs? Please explain your reasoning.

75. No.
76. We would expect at the point the customer wishes to change supplier that a dialogue occurs to ensure that the most appropriate product for the customer is provided.

Q19. Do you think the licence conditions as drafted effectively underpin the policy intentions set out for the provision of IHDs to domestic consumers? Please explain your reasoning.



77. We are comfortable with the drafting.

78. We recognise there is further work to be concluded from business process design.

Q20. Do you agree that Standard Licence Conditions identified above require consequential changes in light of the rollout licence conditions? Do you agree with the government's proposed approach? Please explain your reasoning.

79. The proposed definition of Designated Premise which is based on existing profile class definitions may require future change. DECC may want to reflect on this in light of industry proposals to move towards half hourly settlement for all current non half hourly customers. This would effectively make the term Profile Class obsolete.

Q21. Do you think there are any other consequential changes to existing licence conditions in order to make the proposed rollout obligations work as intended? Please explain your reasoning.

80. We have nothing further to comment at this time.

Q22. Do you think there are any consequential changes to existing legislation needed in order to make the proposed rollout obligations work correctly? Please explain your reasoning.

81. No.

Q23. Do you think there are any consequential changes to existing codes needed in order to make the proposed rollout obligations work correctly? Please explain your reasoning.

[82.](#) There will be changes to existing industry codes. For example Master Registration Agreement, Supply Point Administration Agreement Balancing & Settlements Code, Data Transfer Agreements, Independent Gas Transporter, Uniform Network Code.

83. We believe that all codes will require some modification and will require review.

84. Some of the finer details and how these impact these existing frameworks and future smart frameworks has yet to be resolved e.g. HAN choice/interoperability and WAN module.

Q24. Do you think there are other requirements that the Government should adopt in the SMETS? Please explain your reasoning.

85. No. The Industry Draft Technical requirements have been debated for some time and should be base lined with strong governance around its change process. This will ensure



that as and when changes are made these can be efficiently managed and incorporated into the SMETS.

Q25. Do you agree that all the requirements recommended in the IDTS should be adopted by the Government in the SMETS? Please explain your reasoning.

86. Yes. These have been debated extensively. The requirements should be baselined and changes managed subject to strong governance arrangements.

Q26. Do you agree that the security requirements recommended in the IDTS are proportionate to the level of risk that the End to end smart metering system faces? Please explain your reasoning.

87. We are generally comfortable with the approach taken to date. However, we are not clear how these recommendations may be taken forward and managed alongside the development of the SMETS.
88. We consider it appropriate that the Industry Draft Technical Specification (IDTS) should be baselined with strong governance around a change process/development of the SMETS.
89. In developing the SMETS, the security requirements of all the constituent parts of the metering system and its interfaces need to be carefully considered. For example the STRIDE approach taken to date has focussed on the technical aspect of the components without considering the wider people and process issues that the smart metering systems will operate by and interface with.
90. In addition it is not clear how the constituent parts will be accredited/passed fit for installation. We also consider that all parties interacting with the DCC are required to provide formal certification and compliance with ISO 27001. To restrict this to DCC providers only is we consider introducing unnecessary risk.
91. We recognise that security is an area that will continue to evolve and grow over time. We therefore suggest that strong governance is required to ensure that when changes to the baseline specification are recommended that this should only be altered under exceptional circumstances to avoid further delay to implementation and product developments.

Q27. Do you agree that the process outlined above is a suitable way forward to develop the SMETS? Please explain your reasoning.

92. Yes.



93. The Smart Energy Code framework is the right way to manage and develop these arrangements. Early adoption of the SEC in a “lite” version will help to resolve outstanding issues and could provide robust change control. This may first need to operate within the SMIP.

Q28. Do you think that the SMETS should ultimately be governed as part of the smart energy code? What alternative arrangements could be adopted for the ongoing governance of the SMETS? Please explain your reasoning.

94. We agree that there is a requirement for strong governance and change control.
95. A logical place for such arrangements to sit would be within the new Smart Energy Code. (SEC). We do not see a need to create something separate to the SEC specifically to manage the SMETS.
96. Any unforeseen circumstances that result in a change to the meter specification that could ultimately result in a meter exchange should be considered from the consumer perspective to ensure there is a large enough benefit to off-set the additional costs of the exchange.
97. Backwards compatibility requirements should apply to all elements of the smart metering system (meters, communications, IHD) to ensure that an upgrade of one component does not adversely impact another part of the smart metering system.



Q29. What unit manufacturing cost reduction do you think can be achieved for smart metering equipment over the next 20 years? Please explain your reasoning. Please also provide any other comments (accompanied by evidence) on the estimated costs of the smart metering equipment as set out in the Impact Assessment?

98. Our current assumptions are that reductions will be in line with those in the I.A. views.

99. The cost of the IHD is likely to be higher than the £15.00 in the I.A. given the proposals.

Q30. Do you agree that the Government should include a requirement for a communications hub in the SMETS? Please explain your reasoning.

100. Yes. It is an integral part to the technical architecture of the overall system and therefore required to be defined in the SMETS. Our preference is for an intimate solution to be the choice.

101. It is important to have this definition to avoid future stranding costs and this should be included in the final SMETS.

102. A Single specification will allow for a standard interface spec with a variety of vendors whose solutions meet the requirement. The requirement for a communications hub should include a requirement to pass a list of specified standardised but stringent security tests.

103. By specifying requirements around a communications hub and detailing the security tests to pass in named configurations, the government would ensure a minimum standard for security thus reducing security risks. The requirement for standard security tests could cover areas such as security domains and the types of data passing between domains. Ideally the outcome from these requirements would be to produce a list of certified devices and configuration permutations with other devices that would reduce risk. This approach would also alleviate the diversity of combinations of devices risk if suppliers do not implement interface specifications identically to each other.

104. Ownership of the WAN module is also an area that requires a clear decision to provide certainty to the market. It would make sense for the DCC to own the asset, the alternative places a burden and responsibility on suppliers for technology updates where the decision will be taken by DCC and therefore is outside of supplier's control. Such an approach removes any issues over compliant equipment and installation issues where gas and electricity meters are fitted at different times by two suppliers for example if



the communication module is owned by the 1st supplier there is little incentive on that supplier to fix a problem that is only affecting the second.

Q31. Do you agree with the estimated costs and benefits for outage detection and the Government proposal to require the Communications Hub to include the equipment necessary to provide electricity outage detection? Please explain your reasoning.

105. A full and proper cost benefit analysis should be undertaken to determine if the requirement is required for the mandated smart metering systems for G.B.. Any such exercise should not delay or detract from current efforts to get agreement on the minimum specification as soon as possible.

106. In instances where a separate comms hub may be utilised this may cause issues with customers intentionally and unintentionally disconnecting the power to the comms hub.

107. The module itself may not be able to distinguish between true network outage of power between meter and communication hub e.g. simple “unplugging” by a customer. This may result in confusion as to which part of the industry should respond in such instances. Industry must conclude this debate quickly to avoid any further delays to base lining the SMETS.

Q32. Do you agree that the DCC Communication Service Providers should specify the requirements for outage detection as part of their general role in specifying WAN technology? Please explain your reasoning.

108. No; the service provider is proposing a solution for WAN requirements not a technical specification.

Q33. Do you think the communications Hub should also have the functionality to send a communication to the DCC when power is restored? Please explain your reasoning.

109. This is a DNO requirement and therefore best left for network providers to comment.

Q34. Do you agree with the Governments proposal that fully integrated electricity meters and Communications Hubs will not comply with the SMETS? Please explain your reasoning.

110. Yes. The metrology of the meter is less likely to change during the projected lifetime of the meter but Communications WAN and or HAN may evolve. Our preference is for an intimate solution as the choice.



Q35. Do you think the Smart Metering Implementation Programme objectives would be better met by:

- a. Using the SMETS to mandate a separate Communications Hub with a fixed WAN transceiver? Or
- b. Giving suppliers flexibility over options for configuration of the Communications Hub?

111. Our preference is for option A supporting proposals for the WAN transceiver to be fixed within the communication hub . Our preference is for an intimate solution to be the choice.

Q36. Do you agree there should be no restrictions on the HAN standards accepted by suppliers provided they are available as European (CEN CENELEC or ETSI) or International (IEC or ISO) Standard? Please provide evidence to support your position.

112. We do not agree.

113. If the programme is to move forward with certainty a choice needs to be made.

114. There is a clear dependency for the SMIP to agree an appropriately base lined and fully governed version of the SMETS. This will enable industry and government to move forward from a policy debate to a delivery stage.

115. It is unlikely that a HAN solution will be agreed in time for initial submission of the SMETS to the EU. The HAN will however form part of the smart meter and some form of certainty is required to avoid the risk of asset stranding. This could be delivered for the Foundation period by;

- a. Providing flexibility in the definition of SMETS to enable a compliant smart metering system to be delivered by an unspecified HAN which satisfies agreed requirements.
- b. Obliging the DCC to adopt meters which operate on approved Foundation HAN and
- c. DCC providing backward compatibility so that the metering system can continue to work following change of supplier.

116. In parallel work should continue under the programme to identify the enduring HAN solutions. Selection should be made on objective evaluation criteria designed to identify the technically proven and cost effective solutions for all UK property types and metering locations. Trials should be carried out to establish the preferred solutions. This work should be completed during the Foundation period and introduced in advance of DCC go live. There should be a second EU submission including the HAN(s).



Q37. The IDTS has recommended that all standards should be recognised or be in the process of being recognised by 31 December 2014; do you agree with this recommendation? Please explain your reasoning.

117. We do not agree with this recommendation.

118. Industry cannot conclude and reach a definitive position on what a compliant smart metering system is without a decision on the HAN.

119. Without any decision until late 2014, there is a greater risk of stranding of assets in foundation stage, which may result in fewer installations in this period. Therefore the key learning's government expects to achieve during this key programme phase may be missed. The delay may also mean that a 2019 end date may be un-achievable.

120. It is unlikely that a HAN solution will be agreed in time for submission of the SMETS to the EU. The HAN will however form part of the smart meter and some form of certainty is required to avoid the risk of asset stranding. This could be delivered for the Foundation period by;

- a. Providing flexibility in the definition of SMETS to enable a compliant smart metering system to be delivered by an unspecified HAN which satisfies agreed requirements.
- b. Obliging the DCC to adopt meters which operate on approved Foundation HAN and
- c. DCC providing backward compatibility so that the metering system can continue to work following change of supplier.

121. In parallel work should continue under the programme to identify the enduring HAN solutions. Selection should be made on objective evaluation criteria designed to identify the technically proven and cost effective solutions for all UK property types and metering locations. Trials should be carried out to establish the preferred solutions. This work should be completed during the Foundation period and introduced in advance of DCC go live.

Q38. Do you think the regulatory obligations are needed to underpin a systematic approach to testing of HAN standards during the Foundation phase? Please explain your reasoning.

122. We do not consider regulatory obligations are required, however recognise that a solution has to be found.

123. It is unlikely that a HAN solution will be agreed in time for submission of the SMETS to the EU. The HAN will however form part of the smart meter and some form of certainty

is required to avoid the risk of asset stranding. This could be delivered for the Foundation period by;

- a. Providing flexibility in the definition of SMETS to enable a compliant smart metering system to be delivered by an unspecified HAN which satisfies agreed requirements.
- b. Obliging the DCC to adopt meters which operate on approved Foundation HAN and
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124. In parallel work should continue under the programme to identify the enduring HAN solutions. Selection should be made on objective evaluation criteria designed to identify the technically proven and cost effective solutions for all UK property types and metering locations. Trials should be carried out to establish the preferred solutions. This work should be completed during the Foundation period and introduced in advance of DCC go live.

Q39. Do you agree with industry's recommendation that DLMS should be adopted as the application layer for communications with the DCC? Do you believe there are any consumer, economic or technical issues with this solution which could be circumvented by an alternative approach? Do you have any economic, technical or consumer evidence to assist Government in evaluating industry's proposal?

125. DLMS complies with STEG requirements and is an agreed and recognised EU standard.

126. To achieve programme timescales DLMS is a pragmatic fit in the time available. Ideally industry may have developed its own protocol but this would take too long to achieve. A UK specific standard would require EU approval c3.5 – 5 years.

127. Even with the choice of DLMS there is much development work still to do for example to ensure prepayment requirements can be delivered through this standard.

128. We encourage government to make an early decision on DLMS and to progress further development of this standard for G.B. smart metering requirements.

Q40. Do you agree with industry's recommendation that DLMS and Zigbee SEP1.x should be adopted as the application layer for communications within the consumer premises, provided they install the necessary translation equipment? Do you believe there are any consumer, economic or technical issues with this solution which could be resolved by an alternative approach? Do you have any economic, technical or consumer evidence to assist Government in evaluating industry's proposal?

129. A pragmatic approach is to agree/decide on a standard or standards and set up testing regime, desktop and practical tests and destructive tests (with provision of feedback to manufacturer to improve) to ensure compliance. The products can then be certifiable under the SMETS and governed in accordance with a SMETS assurance regime. Testing should also cover both the application layer and the transmission frequency e.g. 2.4GHz v 868mHz as this should form part of the HAN evaluation.

Q41. Do you think the Smart Metering Implementation Programme objectives would be best met by the proposed approach above? Or should a single, network layer technology standard such as IPv6 be mandated? Please explain your reasoning.

130. This question together with Q42 is essentially a communications question, for which government is undertaking a procurement exercise to deliver solutions.

131. It would seem sensible that government should consider a large addressing scheme, for example IPv6, to avoid potential future constraints.

Q42. Is the provision of a single network-layer address for each Communications Hub a reasonable and sufficient functional requirement for the Smart Meter Wan? Will this requirement limit potential future capability or present challenges, for example in multi occupancy buildings?

132. The requirements that will be set out in the tenders for WAN will require solutions to be developed by Communication Service Providers. It is therefore more important to get industry's requirements correct and understood before trying to second guess any potential solution.

Q43. Do you think the maximum and minimum demand functionality should be included in the SMETS? Please provide supporting evidence for your response.

133. A full and proper cost benefit analysis should be undertaken to determine if the requirement is required for the mandated smart metering systems for G.B.. Any such exercise should not delay or detract from current efforts to get agreement on the minimum specification as soon as possible.

Q44. Do you think the network registers should be included in the SMETS? Please provide supporting evidence for your response (including the cost implications for Smart Metering Equipment, and any alternative approaches that would provide this functionality).



134. A full and proper cost benefit analysis should be undertaken to determine if the requirement is required for the mandated smart metering systems for G.B.. Any such exercise should not delay or detract from current efforts to get agreement on the minimum specification as soon as possible.

Q45. Do you think the prepayment meter contactor switch should be utilised to protect consumer premises from “floating neutral” network faults? Please provide evidence on the costs and benefits to support your reasoning.

135. A full and proper cost benefit analysis should be undertaken to determine if the requirement is required for the mandated smart metering systems for G.B. Any such exercise should not delay or detract from current efforts to get agreement on the minimum specification as soon as possible.

Q46. Do you agree with the proposed approach for consumers to access data and transfer it from the HAN via a separate “bridging” device? Please explain your reasoning.

136. Yes. This is the most pragmatic way of enabling customer access to 13 months of historical data outside of access via the DCC.

137. In addition appropriate security requirements will need to be met and the bridging device may need to be a component of the SMETS.

Q47. Do you have any views on the options presented to ensure that electrical contractors can work safely and efficiently between the electricity meter and the consumer unit/fuse box? Please provide evidence to support your reasoning.

138. This is not a smart metering specific question and therefore should not be included for consideration by the programme. We are also concerned about proposals to turn the meter(s) into safety devices.

139. This would require suitable cost benefit analysis.

Q48. Do you agree with industry’s proposals for an overall architecture of an application layer standard with translation through a Communications Hub to a HAN? Do you believe there are any consumer, economic or technical issues.

140. A pragmatic approach is to agree on a standard or standards and set up testing regimes, desktop, practical tests including destructive tests for security (with provision of feedback to manufacturer to improve) to ensure compliance. The products can then be

certifiable under the SMETS and governed in accordance with a SMETS assurance regime.

141. There may not be a single solution that can fulfil requirements for all properties. It is therefore extremely important that a full suite of testing is carried out on any potential solutions to understand what works and does not work in a given environment.
142. It is unlikely that a HAN solution will be agreed in time for submission of the SMETS to the EU. The HAN will however form part of the smart meter and some form of certainty is required to avoid the risk of asset stranding. This could be delivered for the Foundation period by;
- a. Providing flexibility in the definition of SMETS to enable a compliant smart metering system to be delivered by an unspecified HAN which satisfies agreed requirements.
 - b. Obliging the DCC to adopt meters which operate on approved Foundation HAN and
 - c. DCC providing backward compatibility so that the metering system can continue to work following change of supplier.
143. In parallel work should continue under the programme to identify the enduring HAN solutions. Selection should be made on objective evaluation criteria designed to identify the technically proven and cost effective solutions for all UK property types and metering locations. Trials should be carried out to establish the preferred solutions. This work should be completed during the Foundation period and introduced in advance of DCC go live.

Q49. Where do you believe that translation is best managed:

- a) At the Communications Hub; or
- b) At the DCC?

Do you have any economic, technical or consumer evidence to assist Government in evaluating the options?

144. Option B would seem to be a pragmatic choice for translation as the storage costs and efficiency in one place should be simpler to manage in the longer term.
145. We do however recognise that during the Foundation period that this will not be possible and requires resolution.
146. Whichever option is chosen consideration should be given as to how the data is stored either in translated or raw fashion. Once data has been translated from its original form it could arguably be said to no longer be the same.



147. Whilst this may only be needed for a few cases such as fraudulent extraction of energy we should be mindful of setting any precedents that might be later regretted.

Q50. Do you agree that the IHD should only be required to display ambient feedback on energy usage? Please explain your answer.

148. Yes.

149. To include two levels of feedback may be confusing to some customers.

150. Customer feedback to date suggests a simple and responsive indicator of consumptions levels is valued most by customers.

Q51. Do you agree that Smart Metering Equipment should be designed to support the calculation/and or display account balances as described above, even though suppliers may not initially be mandated to invoke such functionality for credit consumers.

151. Yes but for prepayment only.

152. Providing a balance for credit customers will cause confusion and may provide the wrong messages to customers. For example a monthly direct debit payer will see a credit accruing in the summer, which they may consider should be refunded to them without recognising the purpose of this is to off set their winter consumption. In addition there would be difficulties in calculating calorific values for gas and for electricity misalignment with billing periods and supplier driven incentives e.g. prompt pay discounts.

153. In addition due to potential misalignments of the account balance on the IHD and customer bills this may generate high volume of calls and increase the costs of smart metering.

154. There is currently no evidence that this requirement would deliver customer benefits. The benefits for energy saving within the impact assessment have been attributed to the provision of consumption information (in terms of kWh & £), rather than the provision of account balance.

Q52. What do you think the costs and benefits are of mandating suppliers to display account balance (over and above those arising from display of information on cumulative cost consumption) for credit customers on their IHD?



155. The costs involved are likely to be substantial as this will require changes to customer information, billing and payment systems.

156. In addition the WAN is being procured by government on the basis of a level of traffic that currently does not include this requirement. Inclusion of this requirement now may increase WAN costs with unclear benefits for customers and may have an unintentional effect of delaying this process.

Q53. Do you agree with or have any comments on the Governments proposals for the outstanding issues for the Response? Please explain your reasoning.

157. The SMIP needs to put in place suitable arrangements to resolve the outstanding technical issues.

158. We consider the delivery and agreement of interoperability issues to be a key SMIP role. Suppliers are unable to resolve these issues. If this were the case this would have happened. Competition law precludes suppliers agreeing issues such as selection of HAN.

159. The SMIP must take on the role of resolving the HAN, WAN module selection and other outstanding technical specification issues. To do this interim governance arrangements are required to manage the resolution of the outstanding issues, and to provide robust change control during the foundation period.

Q54. Do you think that an assurance framework, underpinned by regulatory obligations, is needed to support the delivery of the required functionality, interconnectivity, interoperability, and security of Smart Metering Equipment? Please explain your reasoning.

160. This seems a pragmatic approach and could sit within the SEC.

161. Appropriate governance controls especially around changes are needed to avoid any sub standard equipment or workmanship entering the programme.

162. Assurance needs to strike a balance in terms of resource, time and cost and in keeping with the proportionality of the risks. A kite mark approach for the IHD may be appropriate for providing customer confidence in this area.

Q55. Do you agree that as part of any assurance framework adopted, there should be a testing regime in place to support the delivery of the required functionality, interoperability and security? Please explain your reasoning.



- 163. Yes. Testing is required to support assurance across all aspects of the smart metering equipment, that wherever sourced they remain compliant with the SMETS.
- 164. A kite mark approach for the IHD may be appropriate for providing customer confidence in this area.
- 165. Such a framework should consider, desktop and practical tests including destructive tests to ensure and prove security.

Q56. What are your views on the options outlined for a testing regime? Are there other options that should be considered?

- 166. All three options identify the key areas and not necessarily exclusive of themselves. Aspects of all three could be used.
- 167. Market led testing will naturally occur. An industry code could include a process for certification/accreditation by independent approval bodies.
- 168. It is essential that any testing process is effective and robust to provide a trusted approval process. It is essential that any governance arrangement set up provides assurance and confidence to manufacturers, purchasers and most importantly end customers.
- 169. Credibility for the whole programme will be lost if devices fail once they have been installed.

Q57. Do you think that a different approach to assurance is necessary for the foundation and enduring phases? Please explain your answer.

- 170. The Foundation period must be used as a test and learn exercise to ensure that industry is well prepared for the mass rollout from the point the DCC is fully operational.
- 171. In this respect it should be possible to set up an assurance framework under Foundation with a view to extending beyond and into the enduring post DCC world without causing delays.
- 172. For example a strong governance regime will be required for the SMETS in the Foundation period and beyond. Such a governance regime could be developed, tried and tested during Foundation to ensure that any issues from its early operational phase in Foundation are understood and dealt with before the mass rollout begins.



173. This approach would help ensure that industry is best placed to deliver on its obligations for rollout. An example for assurance could be the use of a kite mark during the mandated rollout however any devices installed during Foundation should either be kite mark tested or have a derogation to avoid them being non-compliant.

Q58. Do you think that the activities outlined above are a suitable way for achieving interoperability across Smart Metering Equipment cryptographic functionality? How else could this be achieved?

174. The activities of themselves will not deliver interoperability.

175. The SMIP should agree a standard(s) or set up a body to agree standard(s) on its behalf, this could be an independent group with distinct terms of reference.

176. Such a group should consider appropriate testing regime, desktop including practical and destructive tests to ensure security. The products can then be certifiable under the SMETS and governed according to the assurance regime.

Q59. Do you agree that cryptographic/key management is necessary to secure End to end Smart Metering system? Please explain your reasoning.

177. Yes.

178. E.ON agrees that cryptographic/key management is necessary to secure end to end Smart Metering system, but recommends further analysis in this area to review how frequently key cycling and revocation would need to happen given the potential vulnerabilities with some of the candidate protocols.

Q60. Do you agree with the Governments assessment of the advantages and disadvantages of the cryptographic solutions identified above? What other options should the Government consider? Please explain your reasoning.

179. Yes.

180. E.ON agrees with the Governments assessment of the advantages and disadvantages of the cryptographic solutions identified, but recommends further analysis in this area targeted at the protocols, methods and device combinations as well as their implementations proposed for use.

181. Symmetric approaches would be ideal for a factory based rollout where devices are all paired pre installation. However practical experience suggests that flexibility is needed



on installations as devices may not work when fitted thus meaning the pre agreed combination may need to be changed.

182. A hybrid approach is therefore a more secure approach to deliver the flexibility that is needed to ensure an efficient and economic rollout.

Q61. Do you think that it would be appropriate for the DCC to be responsible for cryptographic key management for the End to end Smart metering system? What other options should the Government consider? Please explain your reasoning.

183. Yes. Secure key management would be best managed in the centre.

184. In appointing service providers for the DCC, the programme should clearly set out requirements for key management and ensure that its appointed service provider is an experienced operator or has partnered with a company with a proven track record in this area to deliver such compliance.

185. The design implementation and running of the DCC for cryptographic key management i.e. Certificate Authority (CA) must have a successful track record of delivering solutions at scale. This area could form a combined or separate tender to ensure the hand offs between Data and Communication service providers are not compromised.

Q62. How do you believe the security approach should be applied to opted out non domestic consumers? Do you see any issues with the approach? Please explain your reasoning.

186. Security for opt out non domestic sites must be applied in the same way as all other smart metering systems. All security assessments should include the same level of testing for all compliant smart metering systems. Standards based approaches must be applied consistently whether opt in or out to reduce the risk of a security breach.

187. If this is not done to the same standards and accreditation criteria, we run a risk that a sub standard product set is introduced at some point in the future, thus weakening the overall success of security requirements for DCC and the critical smart metering infrastructure.