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**Smart Metering Implementation Programme: consultation on draft license conditions and technical specifications for the roll-out of gas and electricity smart metering equipment (August 2011).**

Dear Sir/Madam,

Many thanks for the opportunity to respond to this discussion paper and I hope the comments below help to take the debate on Smart Meter deployment another step forward.

As you are aware the Energy Networks Association (ENA) is the industry body representing the UK's electricity and gas transmission and distribution networks operators. The following comments are provided by ENA on behalf of its Member Companies to the consultation on draft license conditions and technical specifications for the roll-out of gas and electricity smart metering equipment (August 2011).

We are aware that a number of ENA member companies have responded individually and in detail to this discussion paper and these comments therefore are submitted in addition to, and in support of those individual responses.

As you will see in Q 45 ENA have commissioned a short report into the suitability of a device in the meter to avoid damage to the customer's electrical installation following instances of high or low voltage being experienced. This report is currently being completed and once available will be submitted as an appendix to this response

Should any further specific information be required on any of the content of this reply or further debate on some of the issues raised please contact Paul Smith at the ENA on the following details:

## **ENERGY NETWORKS ASSOCIATION RESPONSE TO –**

### **A CONSULTATION ON DRAFT LICENCE CONDITIONS AND TECHNICAL SPECIFICATIONS FOR THE ROLL - OUT OF GAS AND ELECTRICITY SMART METERING EQUIPMENT.**

**October 2011**

#### **Responses to consultation questions:**

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

ENA members consider that it is appropriate to specify a completion date that is as early as reasonably practicable in 2019.

However we believe it's important to ensure that the success of the roll out programme is not compromised by restrictive timescales. We believe that four and a half years to deliver the programme is achievable but only with the full cooperation of all parties involved.

This should include significant attention being given to training and accreditation of meter installers; and adequate attention to quality control and assurance being maintained throughout the installation programme.

Consideration should also be given to the potential impact that reduced timescales for roll-out could have on gas and electricity Distribution Network Operators (DNOs). The duration of the roll-out will have an impact upon the timing and identification of supply point issues requiring remedial actions, i.e. if meter exchanges occur at the rate of 4 or 5 times the current rate then there will be a similar increase in the number of sites requiring remedial action by ENA members. This will inevitably have an impact on resources and will significantly increase the cost and resourcing requirement of the smart roll-out.

Any further reduction in timescales available to the suppliers for installation of the smart metering equipment may have an adverse effect on the quality of the programme. We also believe that a timescale less than four and a half years will require an even greater level of network operator support for the roll out and therefore more staff will be required to facilitate this.

Although difficult to estimate accurately, ENA members have carried out extensive activity to estimate the potential amount of work which network operators will have to undertake to facilitate a successful roll out. This work is available to DECC for further discussion and will be shared in detail in future meetings of the GERG 01.

##### ***2. Do you think the license conditions (AA1-2) as drafted effectively underpin the policy intention to complete roll-out of Smart Metering Equipment by a specified date? Are there any areas where you consider further clarification is necessary? Please explain your reasoning.***

ENA members believe the current suggested license conditions to achieve the policy intention are satisfactory

**3. Do you agree that the license 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.**

License conditions AA7-8 provide a limited definition of interoperability which, while consistent with the business case in terms of providing for a customer to change Supplier and/or for a Supplier to replace part of the equipment without adversely affecting the capacity of the equipment to operate as a Smart Meter. It does not explicitly state the requirement for the equipment to be fully interoperable in respect of (two-way) communications through both the HAN and WAN. It is essential that all Smart Metering Equipment is able to interoperate such that access to the full range of functionality incorporated in the Smart Meter (as defined by the SMETS) is available to Authorised Parties irrespective of the type or model of compliant meter installed, and without the need for modification to their the systems in the event that a smart meter is replaced.

In order to further underpin the policy it will be important to establish an assurance framework to ensure that the Smart Metering Equipment and indeed the end-to-end Smart Metering System will deliver the required overall functionality.

**4. 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.**

ENA members believe that the equipment should be compliant with, and maintained to, the version of SMETS available at the time of installation, otherwise it would be very difficult to maintain interoperability.

**5. 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.**

A significant number of 'Smart Meters' have already been installed by suppliers and their agents across the UK. This programme has of course been undertaken to test the installation process and suitability of equipment. Indeed this will assist suppliers significantly in their roll out programmes.

We understand that several hundred thousand of these meters already exist and as such this would be a significant cost and additional burden to suppliers. On balance we believe that all pre roll out meters should be replaced at some stage during or shortly after completion of the roll out programme. In reality it is likely that this will be following the installation process for all meters fitted from the beginning of the roll out programme in the second quarter of 2014.

Although this would of course be an additional financial burden we believe that all meters following completion of the roll out programme should have the same interoperability and functionality. This will of course provide a level playing field for all consumers

**6. Do you think that the license conditions (AA3-6) as drafted effectively underpin the policy intention for the new and replacement installation of Smart Metering Equipment? Please explain your reasoning.**

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

**8. What contribution do you think the interoperability license condition as drafted could play in ensuring that suppliers work together to ensure Smart Metering Equipment is interoperable? Please explain your reasoning.**

The license obligation needs to be sufficiently strong so that Suppliers continue to work collectively with manufacturers and Government to develop the SMETS in sufficient detail so that interoperability is ensured. Furthermore it is essential that such collective work also includes Network Operators to ensure that their requirements (i.e. those to ensure that they have the information to develop economical, efficient and co-coordinated distribution systems) are also incorporated. This will be essential if Smart Grid functionality is to be delivered in the longer term.

**9. Do you think the license conditions as drafted effectively underpin the policy intention to ensure Smart Metering Equipment is interoperable? Please explain your reasoning?**

ENA have no additional comments to make on this question – please refer to the answer given to question 3

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

ENA believe that given the importance of interoperability in the smart metering system, there should be a disputes procedure to investigate cases where equipment/systems have not performed as required. In addition to resolving individual disputes and establishing if any remedial actions are required, a robust governance framework would help to ensure interoperability.

**11. For the smaller non-domestic sector do you agree that where there is a Current Transformer meter then suppliers should be required to install advanced rather than Smart Metering Equipment? Please explain your reasoning.**

Where the existing metering system installed in a domestic or SME location is CT metered we believe that for the present time an advanced meter should be maintained and replaced with the same in the short term. However towards the end of the overall smart metering roll out programme this should be revisited by all parties to determine a future way forward which builds on experience in the domestic market. Suppliers would then be in a better position at that stage to determine the effectiveness of the installation and therefore benefits etc for the SME sector.

**12. Do you think that the license conditions as drafted effectively underpin the policy intention for Current Transformer meters? Please explain your reasoning.**

Yes, however, we also believe that the obligation should also cover domestic customers as the issue is technical and not related to customer type. As an example there a small but not insignificant number of CT meters installed in domestic premises.

**13. Do you think under the new and replacement obligation gas suppliers should be given the option to wait for the installation of electricity Smart Metering Equipment before installing the gas Smart Metering Equipment? Please explain your reasoning.**

ENA believe this is generally a supplier issue, however it will be important that the installation programme is executed as efficiently as possible with the minimum inconvenience to customers, and that the consumer experience is not compromised by perceptions of poor coordination.

In addition it's worth pointing out that if the smart electricity meter was installed before the gas meter was fitted in all instances this may reduce the need for the installation of a communications hub installed separate to the smart meter and therefore difficulties with installation and possibly ongoing maintenance.

***14. Do you think there are any other barriers to gas Smart Metering Equipment being installed before electricity Smart Metering Equipment? Please explain your reasoning.***

ENA have no additional comments to make on this question

***15. What do you think the implications would be of extending the new and replacement obligations to the licenses of other relevant parties in relation to installing Smart Metering Equipment in new developments without the involvement of a supplier? Do you think mechanisms other than license conditions should be considered to achieve the policy objective? Please explain your reasoning.***

The roll-out of smart metering is of course a supplier-led process and this was agreed within government in order to ensure engagement with customers and to assist with the Government's low carbon targets. If other parties (i.e. Electricity and Gas Network Operators) were also obliged to install smart metering equipment this would undermine the work being done by suppliers to ensure positive engagement with customers.

Considerable work is being undertaken across all parts of the industry to ensure that the programme objectives are delivered safely, sensibly and with least impact on the consumer. Suppliers have been given the responsibility for installation and this should be delivered by them and their accredited agent.

If Government obliged network operators (or other parties) to install smart metering equipment in some instances, ie new developments, this would require significant ENA member investment in systems, equipment and training etc which with only small elements of the programme would be cost prohibitive. However, this should not preclude Suppliers contracting with other accredited parties in these circumstances to undertake metering work where services are offered.

Many ENA members believe that the roll out programme should always have been network operator led. Our current position on this issue is clear, unless there is a decision to change to a full network led rollout (which would need to be considered fully by ENA members) then the status quo should prevail.

In all circumstances, whatever the decision in terms of who delivers the programme it must be firmly underlined that the safe and appropriate installation of the equipment should be paramount. This will require that the installation is carried out only by competent, appropriately trained and accredited installers working under the requirements placed by MOCOPA and MAMCOP at all times.

***16. Do you think the roll-out of Smart Metering Equipment has any specific implications for the provision of emergency metering services? Please explain your reasoning.***

Currently ENA members across the UK provide an emergency, 'out of hours' 24/7 support for installed supplier equipment which includes temporary or permanent replacement of supplier owned meters.

There are a range of opinions across ENA members on whether this will be sustainable in a smart world but on balance we believe that there should no longer be an obligation placed on Network Operators. We believe this based on the following reasons:

Accessibility to meters and communications equipment may be difficult out of hours

It would necessitate the training of member company staff on a variety of different meter types and communications equipment installation processes

These emergency type installations would occur infrequently and ENA member company staff would therefore only be exposed rarely to the replacement of this equipment

Lack of exposure to the installation of smart meters could introduce safe working concerns

Supplier agents (Meter Operators) would be best placed to facilitate this work, alongside DNO/GNO staff if member owned equipment is involved

For these reasons and the fact that this is a supplier led programme as a whole we believe that Suppliers should in general arrange for a 24/7 support to be available to consumers for all issues relevant to the smart meter and it's associated communications equipment. In reality this would probably be delivered via their meter installation agent or another third party. It may of course be the case that a network operator may wish to offer such services to the supplier if they wish

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

Where a communications solution is robust and available then the IHD should be available for provision from the start of the installation programme. However at present there is no proven solution for HAN communications in multi-occupancy buildings where meters are accommodated in a communal position. With that proviso, the period of notice should be consistent with the obligation to install Smart Metering Equipment so that, as far as reasonably practicable, consumers have access to information from an IHD at the time of installation of Smart Metering Equipment.

***18. 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.***

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

***20. Do you agree that the Standard License Conditions identified above require consequential changes in light of the roll-out license conditions? Do you agree with the Government's proposed approach? Please explain your reasoning.***

ENA have no additional comments to make on this question

**21. Do you think there are any other consequential changes to existing license conditions needed in order to make the proposed roll-out obligations work as intended? Please explain your reasoning.**

ENA have no additional comments to make on this question

**22. Do you think there are any consequential changes to existing legislation needed in order to make the proposed roll-out obligations work correctly? Please explain your reasoning.**

ENA have no additional comments to make on this question

**23. Do you think there are any consequential changes to existing codes needed in order to make the proposed roll-out obligations work correctly? Please explain your reasoning.**

ENA have no additional comments to make on this question

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

*ENA have no additional comments to make on this question*

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

The IDTS have been developed under a robust programme of work resourced through industry specialists, supported by ENA members and where appropriate and feasible have been cost-benefit tested. The IDTS includes functionality not envisaged by the original impact analysis but which has subsequently been demonstrated to provide substantial benefits to consumers in terms of improved quality and ultimately lower cost of service provision. This applies particularly to additional functionality promoted by Network Operators (especially Electricity Network Operators) through the ENA. In addition, a number of specific aspects of functionality are currently the subject of further investigation summarized in the consultation as 'outstanding technical issues'.

**26. 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.**

ENA have no additional comments to make on this question

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

The IDTS contains far more detail on the individual smart meter requirements than the earlier Statement of Design Requirements, but we are not convinced that the level of detail is sufficient for meter manufactures to develop and produce meters that are fully interoperable. A further level of detail is required, but potentially just in a smaller number of key areas. It would seem reasonable for the programme to seek some guidance from the manufacturers as to those areas which require further detail. This would ensure that all commands and requests for data from Authorised Parties are treated in an identical way by each smart meter and that each response is in an agreed and consistent format. We are of the view that Suppliers, Network Operators and other stakeholders need to be involved in the development of such further detail for any of the documented requirements.

We are also concerned about the proposal for the individual requirements, substantially drafted in the Hothouse by teams of industry experts, to be redrafted in a 'legally robust way' as it seems inevitable that essential detail will either be lost or subtly changed. An alternative would be for the detailed requirements to continue to be drafted substantially by industry experts (overviewed by legal drafters) to produce the final version of the SMETS, which if subjected to appropriate governance could be referred to in the appropriate license requirements.

**28. 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.**

ENA members agree that the SMETS needs to be properly governed, and that the Smart Energy Code could be one means of achieving this. The governance process needs to allow for proposed changes to the SMETS e.g. to ensure enduring interoperability and potentially provide a framework for ensuring compliance of individual SMETS components. Whatever arrangement is put in place should ensure that all stakeholders are represented within such governance arrangements.

**29. 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.**

ENA have no additional comments to make on this question

**30. Do you agree that the Government should include a requirement for a Communications Hub in the SMETS? Please explain your reasoning.**

Smart meter installation positions will be enormously varied and therefore various designs and styles of meters and communication methods/equipment will need to be available to the installer. The requirement for a communications hub, incorporating both a WAN and HAN transceiver has also been identified by the industry working group. It would be difficult to ensure interoperability without specifying this component in the SMETS.

ENA therefore believe that the option of a separate communications hub is important and in some circumstances will be vital to enable the meter installer to complete an effective installation.

**31. 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.**

ENA believe that the provision of the means of outage detection in the base smart meter specification will provide substantial benefits to consumers and network operators at minimal marginal cost.

However the case for providing positive outage detection (so called 'last gasp' capability) is less clear in cost-benefit terms. Such functionality will be helpful in identifying localised LV faults which network operators are currently reliant on customer calls to bring to their attention. Particularly if faults occur during sleeping hours, there can be significant delays between fault occurrence and detection.



ENA Members believe that in addition to the operational advantages the ability for the Smart Metering Equipment to signal a loss of supply to the DNO would be an expectation that consumers would have of such equipment and would be a benefit that consumers would readily identify. In addition we believe that such functionality might help convince consumers of the benefits of accepting a smart meter.

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

As DCC Communication Service Providers will be responsible for the service it would seem appropriate that they are able to specify the requirements. However, it is worth pointing out that if outage detection and reporting is required, then it is essential that the communications hub has energy storage long enough to enable the reporting.

In specifying the requirement, DCC Communication Service Providers must ensure that the technology will identify supply failures at each individual Smart Metering Equipment location. However, the functionality would need to be carefully specified in order to avoid unnecessary outage detection messages following HV or other major faults affecting large numbers of customers.

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

Provided the incremental cost implications are minimal, the functionality to send a communication to the DCC when the power is restored would be an added benefit in terms of positively identifying to a DNO that all affected supplies had been restored. This would be a more reliable basis for determining full restoration of supplies through interrogation.

However, as with outage detection, the functionality would need to be carefully specified in order to avoid unnecessary confirmation messages following restorations of HV or other major faults affecting large numbers of customers.

**34. Do you agree with the Government's proposal that fully integrated electricity meters and Communications Hubs will not comply with the SMETS? Please explain your reasoning.**

It is inevitable (as previously explained) that the communications solution for the 'Hub' will need to have significant flexibility to enable full support for the smart meter roll out. Separate communication hubs are better able to cope with the full range of multiple meter position scenarios. Given that a number of communication technology solutions are likely to be required across the UK to ensure reliable performance, and especially given that, at this stage, the technologies that will prove most effective in specific environments are yet to be confirmed, ENA members agree that fully integrated meters and communications hubs are unlikely to prove practical or cost-effective in the majority of circumstances.

**35. 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 supplier's flexibility over options for configuration of the Communications Hub?**

**Please explain your reasoning.**

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

**37. 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.**

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

**39. 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?**

ENA have no additional comments to make on this question

**40. Do you agree with industry's recommendation that DLMS and Zigbee SEP 1.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?**

ENA have no additional comments to make on this question

**41. 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.**

ENA have no additional comments to make on this question

**42. 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?**

ENA have no additional comments to make on this question

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

It is important that Network Operators are able to obtain data relating to the demand at individual consumer supply points. It is our view that average demand over each half hourly interval will suffice. This value can be derived from half hourly consumption data providing appropriate access to the data is permitted.

However, the costs of the DCC in this aspect are far from clear, and concerns have been expressed over whether it is efficient and economical for the DCC to collect half hourly profiles from all meters. To address the issue of DCC costs and capability, it is in the customers' best interests if ways can be devised to reduce the data volumes transferred across the WAN and DCC and systems. One option for reducing data flow is to provide maximum and minimum demand registers, which will provide more information than relying on current supplier/settlement data, although less than full half hourly profiles (and less than network energy registers).

More complex analyses of half hourly data could then be undertaken on a selective basis. Given that DNOs will typically have hundreds of thousands of individual LV networks it should be apparent that a 'first pass' monitoring capability would be of considerable benefit in determining the need for more detailed studies and would make a significant contribution towards DNO's continued development of a secure, safe and economic electricity distribution system.

***44. Do you think that 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).***

We are aware that some ENA member companies have made detailed submissions in this area and as such we will not make additional comment other than to point out that members believe there is a strong case for network registers to be included in the SMETS

It is important that Network Operators are able to access relevant data from the smart metering system to perform regulated duties. The ability to access detailed granular consumption (and potentially generation data) has the potential to change existing network planning and investment assessment processes. Whilst separate DNO registers would be one means of achieving this, it is our view that a single set of registers could provide this information as long as appropriate levels of access were granted to network operators and that data access/processing costs were not prohibitive. If additional DNO registers were available and used for Distribution Use of System (DUoS) charges there may be a mismatch between supplier and DNO registers leading to reconciliation issues.

***45. Do you think that 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.***

The majority of ENA members have proposed that the Smart Metering Equipment would send an alarm in the event that abnormally high or low voltages appear at consumers' premises. Although a rare occurrence there are certain conditions that can lead to so-called 'floating neutrals' which can give rise to abnormally high or low voltages and which in turn can cause significant damage to consumers' electrical appliances and electrical wiring, and indeed to electricity meters and associated equipment. While ENA members will always respond promptly to such events, putting in hand necessary repairs and replacements, the impact of such events can be extremely stressful for consumers.

Given that the SMETS and the draft IDTS stipulates the inclusion within the Smart Metering Equipment of a load disconnection switch, ENA believe that the switch should be configured to automatically disconnect the supply to the premises in the event of an abnormally high or low voltage condition. This could provide effective protection against damage to consumers' appliances and wiring and, importantly, automatically remove a potentially dangerous condition in the premises.

ENA members are aware that some meter manufacturers, while supporting the proposal in principle have cast doubts over the capability of the current prepayment meter contactor to successfully interrupt load under a high voltage condition. However, it is our view that the contactor would have been designed with an appropriate factor of safety to deal with credible abnormal voltages such as those arising from a floating neutral condition and that if any doubt exists it should be a straightforward matter to subject meters to laboratory tests to ascertain their capability. Given that the electricity meter is itself likely to suffer irreparable damage in the event of an abnormally high voltage condition at significant cost, then self isolation would obviously be desirable.

In view of the reservations expressed by some meter manufacturers, the ENA has therefore commissioned a short study with the objective of:

- Reviewing the current prepayment meter standards e.g. IEC62055

- Reviewing typical meter contactor (load switch) specifications used in prepayment meters

- Reviewing a sample of current prepayment meter specifications

The intention of the review is to establish the present requirements and current practice relating to the capability of prepayment meters to switch successfully under circumstances where the supply voltage could rise to levels theoretically possible under floating neutral conditions. This review is currently underway and when complete will be submitted to DECC for consideration.

In summary, given the opportunity to provide effective protection to consumers by quickly removing dangerous over-voltages and damaging under-voltages through the automatic operation of the prepayment contactor switch, any necessary testing of the capability of the isolating switch should be put in hand to certify it's capability to operate correctly under such conditions. This duty should then be included in the specification.

***46. 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.***

We agree with the proposed approach since it is a practical solution and the other options will increase the cost of the SMS and increase the propensity for security attacks. This is dependent on the bridging device being certified as having a specific profile on the HAN (similar to that of an IHD), and then this solution protects the SMS from interference by inadvertent or malicious access from the device. Providing more direct physical/radio access to ports on the communications hub offers less protection.

***47. 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.***

The current position regarding electrical contractors achieving isolation to work safely on the consumer unit and other associated equipment has long been considered by all involved parties to be ineffective. At its worse this could present risk to the contractor and the consumer and also to network operator owned equipment.

ENA members recognise the potential additional cost to the base meter specification and as such members hold a range of views on this topic. One thing is clear in all discussions on this topic across the industry however, this engineering solution potentially provides a once and for all answer to the problem.

We believe that if an isolator in the meter is to be selected which can be operated locally by an electrical contractor then the cost of the means of isolation should not be prohibitive. At the moment there is no evidence or work which has looked at this in detail and we would strongly urge a full financial and technical exploration of options available.

ENA members are generally supportive of the case submitted by the Electrical Safety Council on this matter and fully understand the desire for electrical contractors to have available to them an easy and safe means of isolation to enable work.

It's worth pointing out that if this option is not pursued then another solution must be found otherwise every time a cut out fuse is removed by a contractor for whatever reason (without notification to the Supplier or DNO) then through the 'last gasp' facility in the meter a trigger will be sent for a no supply at that particular premise. It may also be the case that the communications equipment is affected by the cut out fuse removal if this is not undertaken by a suitably trained operative.

To set up any alternative means of control, ie an authorisation process similar to a 'MOCOPA Lite' arrangement (which has been discussed widely across the industry) would be very costly, difficult to implement and could be heavily bureaucratic. ENA members have considered this option in detail and should the programme require further information/evidence in this area please contact the ENA.

In short, if through further investigation this can be delivered as a cost effective solution, not only would this be supported by ENA members and the wider electrical contracting community but it would also simplify this whole area of complexity, offering a simple solution to an enduring problem.

**48. 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?**

ENA have no additional comments to make on this question

**49. 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?**

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

**53. Do you agree with or have any comments on the Government's proposals for the outstanding issues from the Response? Please explain your reasoning.**

ENA have no additional comments to make on this question

**54. 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.**

Given the importance of interoperability not just of the Smart Metering Equipment, but the end-to-end smart metering processes, we believe that all reasonable steps should be taken to ensure interoperability; it seems reasonable to develop an assurance framework that sits comfortably with a governance framework.

**55. 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**

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

**58. 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?**

ENA have no additional comments to make on this question

**59. Do you agree that cryptographic/ key management is necessary to secure the End-to-end Smart Metering System? Please explain your reasoning**

ENA have no additional comments to make on this question

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

ENA have no additional comments to make on this question

**61. 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.**

ENA have no additional comments to make on this question

**62. 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.**

ENA have no additional comments to make on this question