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

Response by CE Electric UK

CE Electric UK is the licensed electricity distribution business for the north east, Yorkshire and parts of northern Lincolnshire, operating through its two licensed subsidiaries, NEDL and YEDL. We welcome the opportunity to take part in this consultation. We have taken part already in a number of interactions with DECC and its consultants on the subject of smart metering and look forward to continuing to make a constructive contribution to this initiative.

Our detailed responses to the questions, including an appendix with detailed comments on the Industry Draft Technical Specification, are included later in this response, but it may be helpful to summarise our views on the key issues below.

CE Electric UK has taken a full role in discussions in the various working groups and the Hothouse, often as sole distribution network operator (DNO) representative. Whilst this response does not claim to represent the views of all the DNOs, it is written from the point of view of a full knowledge of the debates and arguments from the DNOs, energy suppliers and manufacturers perspective and should be seen therefore as an authoritative distribution business commentary.

Our key points are:

- Technical interoperability is vital to enable smart meter information to be of practical use to DNOs in the short term and in the future will enable smart grid operation
- Dealing with queries and faults involving smart meters requires a robust 24/7 supplier/MOP response if customers are not to be put at risk
- The technical specification is still not sufficiently detailed to provide a blueprint for a meter manufacturer that will ensure technical interoperability. This needs to be expanded by technical experts with legal assistance rather than by lawyers.
- We understand that other participants also have detailed comments on the Industry Draft Technical Specification. An open and transparent process is now needed for interested parties to share comments on, and resolve differences on this detail.
- Last Gasp may not meet customer requirements and may not be the most cost effective solution. Responding to a customer's "no supply" call by interrogating nearby meters may be preferable.
- Meters should be configured to open the load switch when a configurable voltage threshold has been exceeded, in order to deliver safety benefits to consumers at a nominal cost.
- Minimum and maximum demand registers need to be included. They already are included in the specification of most major manufacturers and hence provide a no cost option that has the potential to minimise WAN / DCC traffic.
- The benefit case for inclusion of network registers is strong but the CBA should be reviewed when there is more information from the manufacturers on the additional costs. This issue is becoming increasingly acute in the parallel debate on DCC volumes and costs.

Comments & draft responses to questions and an Appendix with detailed comments on the Industry Draft technical Specification

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.*
	CE Electric UK believes that it would be able to support suppliers to complete the Smart Meter roll out by early 2019 if that was the Government's timeframe, apart from a small rump (5% or less) of hard-to-treat premises, particularly where the service or meter position has limited access or otherwise requires relocation..
2.	*Do you think the licence 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.*
	n/a
3.	*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.*
	The licence conditions refer to the SMETS being issued by the Secretary of State. We believe that it would be appropriate for a governance process to be established, comprising representatives of all relevant stakeholders to manage changes to the SMETS. If this is agreed, the licence obligation on Suppliers would need to refer to the current version issued by that governance body rather than the Secretary of State. Interoperability is essential for the successful delivery not just of the Smart Meter System but also to ensure Smart Grid functionality. DNOs need all Smart Meters to respond in the same manner to common commands and requests for data. To require different command / data requests sets for different makes or models of Smart Meter would be overly complex and reduce the potential for Smart Grid operation. The interoperability requirements set out in Paragraph 8(b) need to be made more robust than simply a requirement not to 'adversely affect the capacity', possibly along the lines of: …without that replacement affecting the delivery of the functionality defined in the SMETS, or requiring any Authorised Party to make any material change to their system to utilise that functionality The SMETS must be sufficiently prescriptive to ensure interoperability can be delivered to all Authorised Parties.
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.*
	Our response to Question 3 is also relevant here. There is a need to ensure interoperability with Authorised Parties' equipment and systems (including those of Suppliers and Network Operators) during the life of the Smart Metering Equipment (SME). From the Network Operator's perspective each SME needs to respond in the same way to commands and requests for information – to do otherwise would at best result in misinterpretation of information and at worst would result in customer supplies being affected. This would significantly impede implementation of Smart Grid functionality. To help ensure interoperability, the SMETS change process needs to be subject to governance that would assess the potential interoperability impact of proposed changes and the need or otherwise for changes to be implemented retrospectively, potentially requiring firmware upgrades.
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.*

	For the reason given in the final sentence of 4 above, retrofitting may in exceptional cases be required.
6.	*Do you think that 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*.
	n/a
7.	*What period of notice do you think would be appropriate before the new and replacement obligation comes into effect? Please explain your reasoning.*
	n/a
8.	*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.*
	The licence 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-ordinated distribution systems) are also incorporated. This will be essential if Smart Grid functionality is to be delivered.
9.	*Do you think the licence conditions as drafted effectively underpin the policy intention to ensure Smart Metering Equipment is interoperable? Please explain your reasoning?*
	Interoperability is essential for the successful implementation and delivery of the benefits not just of the Smart Meter System but also to ensure Smart Grid functionality. DNOs need all Smart Meters to respond in the same manner to common commands and requests for data. To require different command / data requests sets for different makes of Smart Meter would be overly complex and reduce the potential for Smart Grid operation. The interoperability requirements set out in Paragraph 8(b) need to be made more robust than simply a requirement not to 'adversely affect the capacity', possibly along the lines of: …without that replacement affecting the delivery of the functionality defined in the SMETS, or requiring any Authorised Party to make any material change to their system to utilise that functionality The SMETS must be sufficiently prescribed to ensure interoperability can be delivered to all Authorised Parties.
10.	*What role could a dispute resolution mechanism have a role in ensuring interoperability? What key features should such a mechanism have?*
	Given the importance of interoperability, 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. Such a dispute mechanism could perhaps be integrated with the governance and change management process, since it could be the case that lack of interoperability in a particular case was due to an inadequacy of the SMETS, and an update is therefore required.
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 an advanced rather than Smart Metering Equipment? Please explain your reasoning.*
	n/a

12.	*Do you think that the licence conditions as drafted effectively underpin the policy intention for Current Transformer meters? Please explain your reasoning*.
	n/a
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.*
	There are practical issues associated with providing a power supply to the HAN and WAN modules in the scenario where a smart gas meter is installed (and commissioned as a smart meter) in advance of the smart electricity meter. In the case where the electricity meter is installed first the power supply for the meter (including the HAN and WAN modules) is taken from the incoming side of the metrological elements so that the consumer doesn't pay for the power consumed by the meter. If a power supply to a first install smart gas meter was provided from a consumers' installation, the consumer would pay for the energy consumed by the meter – this would disadvantage such consumers. If the power supply was connected between the DNO cut-out and meter, there would be new technical, safety and theft risks introduced. We believe it would be pragmatic for the first smart meter to be the electricity meter, rather than the gas meter.
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.*
	n/a
15.	*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 a supplier? Do you think mechanisms other than licence conditions should be considered to achieve the policy objective? Please explain your reasoning.*
	We do not recognise the situation described in paragraph 67. When a housing developer applies for an MPAN for a new connection, he has to supply the name of the supplier. It is therefore usual for a new housing estate to have a single supplier initially, with customers being able to switch subsequently. It remains the case, as set out in paragraph 68, that the parties involved may look for the cheapest solution. However, the new and replacement obligations on suppliers should be adequate to deal with this problem.
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.*
	The provision of emergency metering services is clearly the responsibility of the energy suppliers. In the past, DNOs have been able to assist, on an informal basis, with out-of-hours emergencies relating to traditional meters. However, DNOs will not have the knowledge and skills or stock of smart meters to be able to replace a smart meter with another smart meter in an emergency. Energy suppliers therefore need to ensure that a full 24/7 response can be provided to any metering-related queries or incidents. DNOs will help where they can, particularly in issues involving vulnerable customers, but only within the structure of a robust procedure for dealing with emergencies.
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.*
	n/a
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.*
	n/a

19.	*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.*
	n/a
20.	*Do you agree that the Standard Licence Conditions identified above require consequential changes in light of the roll-out licence conditions? Do you agree with the Government's proposed approach? Please explain your reasoning.*
	n/a
21.	*Do you think there are any other consequential changes to existing licence conditions needed in order to make the proposed roll-out obligations work as intended? Please explain your reasoning.*
	It would assist in programming any necessary consequential work by DNOs if suppliers were under an obligation to consult with the relevant DNO about the implementation of a roll out programme in the DNO's licence area.
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*.
	n/a
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.*
	n/a
24.	*Do you think that there are other requirements that the Government should adopt in the SMETS? Please explain your reasoning.*
	n/a
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.*
	CE has been proactively involved in the development of the IDTS and believes that all the Network Operator-related recommendations should be adopted in the SMETS. In addition there are several key requirements, as identified in the consultation document, which should be included as well. In particular we believe that there is a need to include Minimum and Maximum demand registers and the ability for meters to be configured to open the load switch when a configurable voltage threshold has been exceeded; further details are given in our response to the specific consultation question relating to these areas. We are also of the view that the case for inclusion of network registers should be reviewed when there is more information from the manufacturers on the additional costs; again more information is provided in our response to the consultation question. We have provided detailed comments on the IDTS as an Appendix to this consultation response. Whilst many of these comments are of an editorial nature or relate to Supplier-focussed issues, we would like to draw you attention to those comments on the Electricity Specific requirements where we believe that some small, but significant changes are required. These are highlighted in the Appendix.
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.*
	n/a
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 licence requirements. This would be a similar approach to enforcing the detailed technical requirements captured in the Grid Code, which parties are bound to comply with by virtue of distribution, transmission or generation licence 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.*
	We agree that the SMETS needs to be properly governed, and that the Smart Energy Code could be a 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. All stakeholders should be 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.*
	n/a
30.	*Do you agree that the Government should include a requirement for a Communications Hub in the SMETS? Please explain your reasoning.*
	n/a
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.*

	We are not convinced that Last Gasp functionality is either the most cost-effective or customer-friendly way to provide electricity outage detection:
	• We recognise that there could well be a general consumer expectation that Smart Meters should be sufficiently 'smart' to inform the DNO of a power outage and that this might in itself be considered to be sufficient justification for including the functional requirement in the IDTS.
	• However, paragraph 120 points out that this functionality may not be available in the Communication Hubs installed in the foundation phase. Therefore, some customers may not have the Last Gasp functionality installed. So, when deciding what action to take in the event of a power outage, a customer would need to know:
	  o if their Communications Hub had been installed as part of the foundation stage (in which case they would need to call the DNO call centre)
	  o if their Communications Hub had been installed in the roll out state (in which

	case they wouldn't need to call the DNO call centre); o or potentially if the Communications Hub had been installed in the foundation stage and subsequently updated (in which case they also wouldn't need to call the DNO call centre) • In reality, unless all Smart Meter have Last Gasp functionality neither customers nor DNOs would be able to rely on it, and the general expectation that customers need to report a power outage would prevail. • We are therefore not convinced that the CBA takes account of these consequences, and fully explores the alternative of a process which begins as now with a phone call from an affected customer, but then proceeds to an interrogation of the energisation status of nearby smart meters by the DNO to detect the extent of the interruption. Furthermore, the design of the Communications Hub will need to be able to differentiate between faults in the incoming supply to the Hub and faults in the Hub power supply itself to avoid spurious messages being sent to the DNO.
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*
	The response to question 31 is also relevant here. We accept that the Communication Service Provider could provide a cost effective means of providing this functionality, but the usefulness and timeliness of the information that would be received by the DNO remains uncertain especially at times of major system incident. In addition the commercial structures need to be developed to ensure that the DNO needs only to pay for information which it finds valuable and is unable to secure from any other means e.g. via its SCADA system.
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.*
	DNOs have a regulatory obligation to accurately record data relating to customer interruptions. Notification of the start and end time of a supply interruption would enable DNOs to better comply with this requirement. This functionality is currently included in OP3, but there is no explicit requirement for the functionality to be provided by the Communications Hub; indeed it was envisaged that it would be provided via the voltage measurement algorithms in the Smart Meter as this will have the ability to measure and detect the voltage and time thresholds associated with the definition of a power outage (i.e. where the incoming voltage is less than 180V for a period of 3 minutes).
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.*
	n/a
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 suppliers flexibility over options for configuration of the Communications Hub?* *Please explain your reasoning.*
	n/a
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.*
	n/a

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.*
	n/a
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*.
	n/a
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?*
	n/a
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?*
	n/a
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.*
	n/a
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?*
	n/a
43.	*Do you think that maximum and minimum demand functionality should be included in the SMETS? Please provide supporting evidence for your response*
	The inclusion of maximum and minimum demand functionality is a zero-cost option. Maximum / minimum demand capability is offered by all major manufacturers on their electronic polyphase meters. There does not seem to be any hard evidence for not including this functionality in the SMETS. The DNOs' requirement for maximum and minimum demand functionality was debated in the PDOG Tariff WG where it was not considered to be contentious and hence was included as PC.08 part 3 (Peak Flow) in the deliverable from the Tariff WG. For planning purposes, DNOs would ideally like: • access to full half-hourly data from customers; and • for the DCC to provide an efficient and economical solution for (say) quarterly downloads of half hourly import/export profiles. However, the costs of the DCC 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 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). As stated above, this requirement is already provided by all major manufacturers and is therefore an acceptable zero-cost solution.
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 of the view that the benefit case can be effectively demonstrated (see below), and invite the manufacturers to provide more detailed information of the marginal additional cost of providing this functionality. The option of creating network energy registers, to a significantly simpler specification than that required by suppliers to support their tariffs, was discussed in the PDOG tariffs Working Group. There was a difference of views between the WG members and the PC.08 part 2 (Network Registers) was included as an option in the deliverable from the Tariff WG. The cost/benefit analysis from the group showed a net benefit to customers from the provision of network energy registers. The cost / benefit assessment below is based on the analysis we presented to the PDOG Tariff WG. There are two headline options for Network Operators to obtain the initial data sets they need to improve the way networks are designed. In summary, these are to use Time of Use (ToU) registers to compile a summary of the key demand data in the Smart Meter, or to use the full half-hourly demand profiles. It is expected that over the life of the Smart Meters more half hourly demand profile data and less summary data will be needed, but initially we estimate that summary information from most meters would be sufficient. Hence for a simple single-element import meter, that choice becomes either four ToU registers (of summary demand information) or full half-hourly demand profile information. If we assume that ToU registers are read monthly, primarily to match current DUoS billing cycles, reading these 4 ToU registers monthly gives 4*12=48 readings per year. Table 4 of the Ofgem Statement of Design Requirements - mid case (27 July 2010) gives a mid-case data volume per register per read of 50 bytes. At 48 readings per year, this gives a data volume of 48*50=2,400 bytes per meter per year for import ToU registers. Table 4 of the Ofgem Statement of Design Requirements - mid case (27 July 2010) gives a mid-case data volume for a HH profile of 50,000 bytes. The reduction in data volumes from using ToU registers instead of HH profiles for import is therefore 50,000-2,400=47,600 bytes per meter per year. Across 27 million meters, the benefit of using ToU registers for import is 47,600*27,000,000=1,285,200,000,000 bytes/yr, or 1,285,200 Mb/yr. If we assume that one in twenty of our customers also have micro generation and therefore have export registers, this benefit of using ToU registers can be increased by 5%, to 1,349,460 Mb/yr. Electralink's published charges for the Data Transfer Service (DTS), widely used by market participants for settlements and related purposes, are £2.18/Mb-yr. using these established data costs quantifies the benefit of ToU registers as 1,349,460*2.18=£2.9m/yr. This annualised benefit can be capitalised, assuming a 10-year life and applying the same 5.6% rate of return used by Ofgem to regulate the electricity distributors. This gives a capitalised value, to be compared against the cost of modifying the smart meter specification, of £22m.

	The only cost of providing the ToU registers in Smart Meters is in development and testing. If this were less than £22m, it would be cost effective for them to be included. We believe that the manufacturers should be asked to clarify any additional costs of designing and manufacturing meters with Network related ToU registers. We are therefore of the view that the benefit case has been reasonably demonstrated, and perhaps the manufacturers could provide more detailed information of the marginal additional cost of providing this functionality.
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.*
	Floating neutral network faults are costly to network operators and customers and have potentially serious safety implications. With the increasing cost of copper, incidents of copper theft are increasing and the safety issues and cost associated with neutral faults will increase over time. The safety issues arising in these scenarios are material and any opportunity to reduce them has to be taken seriously. CE believes that being able to configure the Smart Meter to open the prepayment meter contactor to open when a configurable high voltage threshold has been exceeded would deliver safety benefits to consumers and financial benefits to DNOs. CE spend in the region of £0.25m per annum in claims associated with out-of-range voltage excursions associated with broken neutral events. This type of network fault can causes significant damage to customers' installations and appliances, the cost of which is reflected in insurance claims and premiums and hence is largely additional to the DNO expenditure above. In addition, the disruption to those affected can go beyond the more typical fault scenarios where customer 'recovery time' is relatively quick. When customers' installations are damaged under neutral fault conditions material damage to their property can occur. As significant as this aspect is, it is not the most concerning aspect of this kind of fault scenario. The damage that results is caused by potentially unsafe over-voltages which get impressed onto the customer's installation. In situations where the consumer's internal earth bonding is poor these elevated voltages appear on the frameworks of domestic appliances which are touched routinely by consumers on the presumption that it is safe to do so. Within the SMETS, there are three relevant requirements: • ES.10 - The smart metering system shall support measurement of other power quality data including; RMS voltage, over/under voltage, sag/swell. • DI.01 – The smart metering system shall support logging of meter events such as faults, tampers, thresholds associated with extreme levels etc. This will include but is not limited to the time and date stamping and recording of the originating device for the event. • ES.12 – The smart metering system shall allow the load switch to be configurable to be open or closed for a range of events. These requirements mean that voltage measurement, logging and reporting of voltage levels and the potential to open the load switch are included as part of the basic meter, and hence the meter has the capability to open the load switch if the voltage is outside configurable parameters. CE believes that being able to configure the smart meter to open the prepayment meter contactor (load switch) to open when a configurable high voltage threshold has been exceeded would deliver safety benefits to consumers and financial benefits to DNOs. We recognise that meter manufactures do have some concerns about the electrical capability of the meter contactor, but at the moment we believe that significant benefits could be delivered using a contactor with the same capability as that presently used in a prepayment meter, and as such can be provided at no additional cost. Our initial understanding is that clause 7.2.1.5 of IEC 62055 Part 31 requires that operation of a prepayment meter at a voltage up to 1.9 times the nominal voltage (437V) to be such that there are no safety hazards. Based on this,

	we believe that the functionality for the load switch to be configured to open when an overvoltage threshold is exceeded should be an integral part of the smart meter specification, such that the functionality can be readily 'switched on' when work has been completed to establish the appropriate threshold voltage. We are proactively working with the ENA to better understand the capability of the contactors currently used in prepayment meters. Depending on the results of these discussions, there may be a need to undertake a further risk assessment that considers the holistic risks in the consumers' premises.
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.*
	n/a
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.*
	CE Electric UK is supportive of any arrangements that lead to an increase in the safety to our staff, consumers and contractors working on consumers' installations, provided that the costs of any new arrangements are proportionate to the benefits delivered.
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*
	n/a
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?*
	n/a
50.	*Do you agree that the IHD should only be required to display ambient feedback based on energy usage? Please explain your answer.*
	n/a
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?*
	n/a
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?*
	n/a
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.*
	n/a
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 SME, but the end-to-end smart metering processes, we believe that all reasonable steps should be taken to ensure interoperability; it seems reasonable for an assurance framework that sits comfortably with a governance framework to be developed.
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*
	n/a
56.	*What are your views on the options outlined for a testing regime? Are there other options that should be considered?*
	n/a
57.	*Do you think that a different approach to assurance is necessary for the Foundation and enduring phases? Please explain your answer.*
	n/a
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?*
	n/a
59.	*Do you agree that cryptographic/ key management is necessary to secure the End-to-end Smart Metering System? Please explain your reasonin*g
	n/a
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*
	n/a
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.*
	n/a
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.*
	n/a

Appendix 1

Document: **Industry Draft Technical Specification, Version dated 8 August 2011**

Comments by: **Alan Creighton, CE Electric UK**

These comments include editorial comments, and some relating to suppliers in addition to comments relating to Network Operators. The key comments from a CE / ENA perspective are identified in blue text.

Serial	Clause/ Sub clause	Comments	Proposed change
1	General	There are many functional requirements where further details are required to ensure that the Smart Meters are interoperable. There needs to be a forward process for ensuring that interoperability of DNO requirements is ensured.	
2	General	Some of the terms used in the Glossary seem to be capitalised where used in the text if the Extended Functional Requirements, yet not in others. It is not clear if this intentional or not	Review and standardise
3	General	There does seem to be some confusion in the document between demand (kW) and energy consumption (kWh).	Review
4	1.9	The SM HAN is depicted by a blue cloud rather than a blue rectangle	Change text to: …denoted by the blue cloud in Fig 1
5	1.11	Reference to parag 1.9 should be 1.10	Change text to: …in paragraph 1.10, in….
6	1.16	Figure 3 is above rather than below the text	Change text to: …half of Figure 3 above
7	1.19	Would it be worth making the point that that there is an explicit requirement for all stakeholders including Network Operators, Supplies and manufacturers continue to liaise to ensure technical and commercial interoperability. In order to deliver network related Smart Meter benefits and pave the way for delivering Smart Grid related benefits there is a need for Network Operators requirements to continue to be included as part of the ongoing development of Smart Meters technical interoperability with Network Operators systems.	Consider expanding paragraph
7	1.26	The IHD ambient display relates to power or demand thresholds measured in kW rather than energy (measured in kWh)	Change text to: …display of electrical demand on minimum specification…
9	1.28	Ditto	Change text to: …real time indication of electricity demand
10	1.29	Whilst there may be a requirement for a multiphase meter to produce aggregate import/export real/reactive e.g. for use on an IHD, there is a requirement for 4 Quadrant data relating to each phase as described in ES6-9. Import and export in a half hour period should not be aggregated / netted off as it would produce misleading information if used for settlements purposes or in network analysts. Its not clear if the requirement to compile aggregated data is actually needed; it is not included as an ES set of requirement	Consider the requirement for arithmetic summation / aggregation
11	Fig 4	The LHS terminal is labelled 'Feed from network fuse' whilst the corresponding terminal in Fig 5 is labelled 'Feed from network fuse'. Consistency would be good.	Change one of the figures to be consistent.
12	1.34	Energy consumption combined with the tariff are combined to calculate the price for the energy used	Change text to: …aligns current consumption with current tariff rate.
13	1.36 & 1.37	I can see these two security requirements are valid, but there are more general ones as physical antitamper devices. Aren't the updated security requirements included in this document (rather than ESoDR).	Consider revising paragraphs
14	1.41 Bullet 2	Has / will the Technical Specification superseded the ESoDR – is reference to ESoDR appropriate	Consider revising paragraphs

Serial	Clause/ Sub clause	Comments	Proposed change
15	1.41 Bullet 4 &5	It seems reasonable that the export related parameters are not required for the second element, but the list of those ESn items that are required needs to be reviewed: ES2 Cumulative kWh import Y ES3 Cumulative kWh export N ES4 Cumulative kvarh import Y ES5 cumulative kvarh export N ES6 half hourly kW import Y ES7 half hourly kW export N ES8 half hourly kvar import Y ES9 half hourly kvar export N	Change text to reflect required ESn's
16	Fig 6 & 7	These two figures are the same.	Replace one of the figures with the correct one
17	Fig 8 & 9	These two figures are the same.	Replace one of the figures with the correct one
18	Table 3 Notes bullet 2	All Smart Meter's do need to be able to measure export	Change text to: …to Export the meter must measure…
19	Table 3 Notes bullet 8	The fact that Variant P0 has been deleted isn't relevant	Delete reference to P0
20	Table 3 Notes bullet 8 Sub bullet 2	Should this be a 2 phase 3 wire system	Change text to: …2 phase 3 wire system…
21	1.58	This paragraph site uncomfortably – is it intended this parag replaces paragraph 1.57?	Clarify
22	1.61	There seems to be some lead in words missing to the set of bullets.	Review
23	1.68	Add reference / link to the Architecture Supporting document	
24	1.71	Reference is made to the provision of a power supply from the 'secure safe access point on the DNO side of the existing 'dumb' meter'. Further clarification is required as to how this might be achieved as at first sight the requirement appears to be unrealistic.	Clarify requirement
25	Fig 25	To clarify which interface in the figure relates to which Scenario add the interface reference GB3 / GB10 to scenario descriptions	Add interface references
26	1.87 Bullet 4	References should be to paragraphs 1.88 and 1.89	Change text to: …paragraphs 1.88 and 1.89 below.
27	1.88 & 1.89	Reference is made to a) b) c) d) which presumably relates to the bullets in 1.87	Update references
28	1.89 Bullet 2	Option (c) could also be used by the Network Operators as well as Suppliers	Change text to: …to/from an Authorised Party.
29	Fig 26	The customer gateway provides the facility for consumers to have local access to data and ability to utilise control signals (as indicated in parag 1.95)	Update figure title appropriately
30	1.95	Is the set of control data that would be available via the Gateway device defined anywhere	Clarify
Extended Functional Requirements			
31	IM1 Page 51	The meter variant descriptions are bulleted, yet there are numbered references to the variants in the narrative	Review referencing
32	IM.2.5	Clarify whether the Smart Meter should be able to revert back to the previous firmware version or a previous firmware version i.e. how many previous versions should the Smart Meter store	Review and clarify
33	IM.2.9 Bullet 2	Editorial	Change text to: …Confirm its status…
34	IM.4.1	The Smart Meter System should resume normal operation without *any* external intervention after a power supply failure.	Change text to: ……operation without external intervention….
35	IM.4.3	On restoration of supply, the Smart Meter should not *continue* with the correct tariff, rather it should implement the correct tariff as there could well be a different tariff corresponding to the supply restoration time.	Change text to: …function, implement the correct tariff…

Serial	Clause/ Sub clause	Comments	Proposed change
36	IM.4.4	As drafted following a supply interruption the Load Switch need to adopt the correct position appropriate to the tariff within 10 seconds, and clarifies that in this case randomisation is not needed. Given that the purpose of randomisation is to reduce the 'shock' on the network when auxiliary load switches are turned on under normal conditions, it seem unreasonable not to require randomisation in the situation descried in IM.4.4 when the 'shock' to the system will be greater than normal. (Cold load pick up)	Review, with a view of including the requirement for randomisation for such events.
37	IM.4 Extended narrative	IM.4.3 requires that the Smart Meter adopts the correct configuration appropriate to the restoration time, whilst the narrative suggest that the Smart Meter should revert to the state as it was immediately prior to the interruption.	Clarify and reword as appropriate
38	IM.11.7 Bullet 2	Clarify that it is data held on the meter that can be validated by the HHT	Change text to: …other data held on the meter, but…
39	IM.11.20	The names used for the 'fitted contactors and fitted relays including the main switch' should be consistent with those used in the rest of the document. In addition it would be good to clarify that the HHT should be able to test the operation of auxiliary load switches fitted internally or externally to the meter controlled directly by the meter and those operated via the Smart Meter HAN.	Change text to: …each of the internal / external switches controlled directly by the Smart Meter, switches paired to the SM HAN and the main load switch…
40	IM.11.21	Similar comments to IM.11.20 re terminology	ditto
41	IM.11.22	Similar comments to IM.11.20 re terminology. In addition clarify that the status indication is required from all the switches connected to the SMS	Change text to: …of switches within the Smart Meter System.
42	IM.11.22	Clarify that the status of the Gas Valve should also be available via the HHT	Clarify requirement
43	IM.11.23	Similar comments to IM.11.20 re terminology	
44	OP.7.3	Confirm that in addition to supplier related registers/indexed needing to operate as normal during a firmware upgrade, the same applies to registers/ indexes used by Network Operators	Change text to: … balances and those used by Network Operators for their purposes, shall operate …
45	OP.7.4	Confirm that in addition to supplier related storage of registers/indexed needing to operate as normal during a firmware upgrade, the same applies to registers/ indexes used by Network Operators	Change text to: …balances and those used by Network Operators for their purposes, shall operate …
46	OP.7.9	Is it clear what a pending communication is, and would it not be better to state what should happen e.g. implement the communication on successful installation of the upgrade?	Review and clarify
47	OP.8.1	Reference should be made to an Authorised Party or Authorised Engineer rather than just 'an engineer'.	Change text to: …a consumer or Authorised Party with a…
48	OP.8.1	The consumer should not have the ability to Arm and Restore supplies in all situations - the permitted functions are specified in ES.1 for elec meters and GS.5 for gas meters	Refer to ES.1 and GS.5 to descr be the scenarios when the consumer can Arm and Restore
49	OP.8.2	Reference should be made to an Authorised Party or Authorised Engineer rather than just 'an engineer'.	Change text to: …a consumer or Authorised Party with a…
50	DS.2.2 & 2.3	Clarify that other associated data storage requirements are captured elsewhere e.g. ES.n	Add note to Extended Narrative: There are associated data storage requirements captured elsewhere in the Tech Spec e.g. ES.6-ES.9
51	DS.4.3	The requirement is not clear. The (elec) meter could indicate if the incoming supply is on irrespective of whether the meter is enabled or disabled. If the incoming elec supply is off, it will be unable to display anything. It would be worth clarifying if the status indication relates to the incoming electricity supply or the outgoing supply to the consumer (which will depend on whether the meter is enabled or disabled)	Review and clarify requirement
52	DS.4 Data Items	Reference should be made to the Load Switch status.	Add: Load Switch
53	DS.5.5	Clarify the data that the meter needs to be populated with.	Change text to: …populated with the Date and Time Change and Time Change Offset for the next 30 years.

Serial	Clause/ Sub clause	Comments	Proposed change
54	DS.6.1 Bullet 4	The reference to personal data in this context is unclear.	Change text to: …Profile data that is not related to regulated duties of the previous supplier (e.g. interval data for consumers who are not half hourly billed) or any other Authorised Party (e.g. DNO)
55	IN.1	To facilitate the connection of DG, isn't the requirement for the Smart Meter System to support three suppliers i.e. Gas (import) Elec (import) and Elec (export)	Change text to: …at least three licensed Suppliers…
56	IN.3.2	Clarify that the registers relate to *net* import, *net* export and generation output	Change text to: …net electricity import, net electricity export and generation output…
57	IN.3.4	Clarity what an Enduring Interface is - its not included in the Glossary	Add description of Enduring Interface to the glossary.
58	PC.3.24	There is a governance issue as to which Authorised Party could configure a meter such that (in PAYG) mode the supply was never interrupted (as opposed to self disconnected). There could be situations when a DNO had a justifiable reason for interrupting such a supply	None in this document however, the issue should be considered as part of a discussion on governance.
59	PC.8.5 Bullet 6	The bullet actually contains two bullet points	Reformat
60	PC.8.15 4th requirement	The configuration of the resettable cumulative counter is unclear.	Change text to: …configurable to be triggered for load limiting events occurring within specific time periods…
61	PC.8.16	The requirement is unclear. Reference should be made to the Load Switch rather than a contactor. The load switch could be configured to open or remain closed.	Change text to: …the Load Switch shall be configurable to open or remain closed…
62	PC.8.41	Requirement includes an embedded requirement PC.8.40	Reformat
63	PC.8	It is noted that the requirements previously referred to as PC.08 part 2 (Network Registers) have not been include in the Technical Specification – see response to Consultation Question 44	Review with a view to reinstating the requirement.
64	PC.8	It is noted that the requirements previously referred to as PC.08 part 3 (Peak Flow) have not been include in the Technical Specification – see response to Consultation Question 43	Review with a view to reinstating the requirement.
65	ES.1.2	Clarify which of the requirements in ES.1 shall be configurable	Review and clarify
66	ES.1.3	Disablement and restoration of the supply is carried out via the Load switch	Change text to: …use of the Load Switch.
67	ES.1.4	PAYG commands are implemented via the Load switch	Change text to: The Load Switch…
68	ES.1.5 (first one)	Clarify that it is the Smart Meter which is Armed and the supply Restored	Change text to: …the meter to be armed or the supply to be restored
69	ES.1.5 & 1.6 (second ones)	ES1.5 and 1.6 references are duplicated	Renumber
70	ES.1.5 (second one)	Clarify that it is the Smart Meter which is Armed and the supply Restored	Change text to: …the meter to be armed or the supply to be restored by an instruction…
71	ES.1.8	There seems to be some words missing in the requirement description	Change text to (several edits): Where the meter has been remotely Disabled by a Network Operator a Remote Restoration command from the Network Operator shall Restore the supply without the need for direct local action. Whilst the meter is Disabled by a Network Operator, any command to change operation mode to credit shall not cause the meter to Arm, or the supply to be Restored.
72	ES.1.11	There are 7 conditions rather than 6	Change text to: …the seven conditions…
73	ES.1.11	Clarify the operation of the Load Switch	Change text to: …change to zero the Load Switch shall open…

Serial	Clause/ Sub clause	Comments	Proposed change
74	ES.1.11	The description of the condition lines should match those of the logic diagram	Change text to (several edits): …In the case of Disablement due to Suppliers Remote Disablement condition, Prepayment condition, Meter Integrity condition or Supplier initiated Load Limiting regime, the supply will not be Restorable until the meter is armed by direct local action.
75	ES.1.12 Item 1	The description of the condition lines should match those of the associated text	Change text to: … Suppliers Remote Disablement condition
76	ES.1.12 Item 5	Comparability of description	Change text to: … Network Operators Remote Disablement condition
77	ES.1.13	The word 'will' is used several times instead of 'shall'	Review
78	ES.1.13	The settings on the Automatic Restoration timeout routine need to be configurable by the DNO	Change text to: …timer (with a configurable time setting); this feature…
79	ES.1.18	Clarify that this scenario relates to a supply failure as described in ES.1.17	Change text to: …re-instated following an interruption as described in ES.1.17 if the…
80	ES.1.24	Clarify that the requirement related to 'the' rather than 'a' Load Switch	Change text to: The Load Switch…
81	ES.1.25	Clarify that the requirement related to 'the' rather than 'a' Load Switch	Change text to: The Load Switch…
82	ES.2.6	The data is cumulative data not half hourly data – it's a constantly incrementing total register	Change text to: …The internal resolution of this register should be 0.001kWh
83	ES.2.11	Each independent element needs to comply with the requirements of ES.2.3 to ES.2.7	Change text to: …of ES.2.3 to ES.2.7
84	ES.3.3	This requirement should be comparable with that requirement in ES.2.3	Change text to: …of being reset.
85	ES.3.6	The data is cumulative data not half hourly data – it's a constantly incrementing total register	Change text to: …The internal resolution of this register should be 0.001kWh
86	ES.3.10	Each independent element needs to comply with the requirements of ES.3.3 to ES.3.8	Change text to: …of ES.3.3 to ES.3.8
87	ES.4.5	The data is cumulative data not half hourly data – it's a constantly incrementing total register	Change text to: …The internal resolution of this register should be 0.001kWh
88	ES.4.7	Whilst it's not currently envisaged that the reactive energy tariffs will be deployed initially, it seems restrictive to prescribe that the Smart Meter shall not support such tariffs – the option should be available.	Change text to: The meter need not support…
89	ES.4.11	Each independent element needs to comply with the requirements of ES.4.2 to ES.4.7	Change text to: …of ES.4.2 to ES.4.7
90	ES.5.5	The data is cumulative data not half hourly data – it's a constantly incrementing total register	Change text to: …The internal resolution of this register should be 0.001kWh
91	ES.5.7	Whilst it's not currently envisaged that the reactive energy tariffs will be deployed initially, it seems restrictive to prescribe that the Smart Meter shall not support such tariffs – the option should be available.	Change text to: The meter need not support…
92	ES.5.12	Each independent element needs to comply with the requirements of ES.5.2 to ES.5.7	Change text to: …of ES.5.2 to ES.5.7
93	ES.6	ES.6 relates to import not export	Change 'Prospectus requirements to: …support export kW…

Serial	Clause/ Sub clause	Comments	Proposed change
94	ES.6 to ES.9	As we indicated to the DECC Smart Meter team in the final stages of the Hothouse discussions we do not agree with the changes made to ES.6 to ES.9. As now drafted the half hourly consumption records are defined as an average Demand rather than Energy consumption. The reason for this is unclear as the units used by the industry, including Suppliers, Network Operators and Settlements are energy related e.g. kWh rather than demand (kW). The Metering CoP 5 does include reference to both Measured Quantities and Demand Values. Section 4.1.1 of the CoP5 states: *'For each separate circuit the following energy measurements are required for Settlement purposes:-* *(i) Import kWh** *(ii) Export kWh** *(iii) Import kvarh** *(iv) Export kvarh** http://www.elexon.co.uk/ELEXONDocuments/bsc_cop5_issue6_v10.0.pdf There may be confusion between "measurement quantities" (kWh, which are used throughout the industry uses) and "demand values" (kW, which are not generally used, as illustrated in the data transfer catalogue): http://www.mrasco.com/mra-products/data-transfer-catalogue In the data catalogue, Annex B are the data flows, annex D the data items In order to avoid confusion in the industry we are firmly of the view that ES.6 to ES.9 need to be redrafted to require that the data items are energy based rather than demand based. The following comments on ES.6 to ES.9 indicate that changes that we believe are required.	
95	ES.6 to ES.9	Given the distinct similarity between the requirements between ES.6 to ES.9, it would be expected that the Extended Requirements would be comparable, yet when they are compared line by line there are some material differences e.g. can the registers be deleted or reset. Even if just different terminology has been used to describe the same function, being consistent would avoid confusion.	Review ES.6 to ES.9 for comparability
96	ES.6.n	See general comments above	Change text to: ES.6.2 The meter shall store 13 months of half hour kWh Import data ES.6.3 Half hour data shall be stored as Import kWh ES.6.4 The kWh shall be recorded over each half-hour starting on the half-hour and the hour be identified by the time of the end of the Demand Period ES.6.7 The internal resolution of this half hour data should be 0.001kWh
97	ES.6.6	Clarify that the registers need to be reset in accordance with ES.6.5	Change text to: …and ES.5 should be capable of being reset at the same time and in accordance with ES.6.5
98	ES.6.10	Clarify term 'cover items'	Review and clarify
99	ES.6.15	Each independent element needs to comply with the requirements of ES.6.2 to ES.6.11	Change text to: …of ES.6.2 to ES.6.11

Serial	Clause/ Sub clause	Comments	Proposed change
100	ES.7.n	See general comments above	Change text to: ES.7.2 The meter shall store 13 months of half hour kWh Export data ES.7.3 Half hour data shall be stored as Export kWh ES.7.4 The kWh shall be recorded over each half-hour starting on the half-hour and the hour be identified by the time of the end of the Demand Period
101	ES.7.5	Clarify if the data can be deleted or 'reset locally or remotely' as per ES 7.5.	Clarify
102	ES.7.6	Clarify that the registers need to be reset in accordance with ES.7.5	Change text to: …of ES.5 should be capable of being reset at the same time and in accordance with ES.7.5
103	ES.7 new	Add requirement re data accuracy	The internal resolution of this half hour data should be 0.001kWh
104	ES.7.10	Clarify term 'cover items'	Review and clarify
105	ES.7.15	Each independent element needs to comply with the requirements of ES.7.2 to ES.7.11	Change text to: …of ES.7.2 to ES.7.11
106	ES.8.n	See general comments above	Change text to: ES.8.2 The meter shall store 3 months of half hour kVArh Import data ES.8.3 Half hour data shall be stored as Import kVArh ES.8.4 The kVArh shall be recorded over each half-hour starting on the half-hour and the hour be identified by the time of the end of the Demand Period ES.8.7 The internal resolution of this half hour data should be 0.001kVArh
107	ES.8.6	Clarify that the registers need to be reset in accordance with ES.8.5	Change text to: …of ES.5 should be capable of being reset at the same time and in accordance with ES.8.5
108	ES.8.10	Clarify term 'cover items'	Review and clarify
109	ES.8.15	Each independent element needs to comply with the requirements of ES.8.2 to ES.8.11	Change text to: …of ES.8.2 to ES.8.11
110	ES.9.n	See general comments above	Change text to: ES.9.1 The meter shall store 3 months of half hour kVArh Export data ES.9.2 Half hour data shall be stored as Export kVArh ES.9.4 The kVArh shall be recorded over each half-hour starting on the half-hour and the hour be identified by the time of the end of the Demand Period ES.9.7 The internal resolution of this half hour data should be 0.001kVArh
111	ES.9.5	Clarify that the registers need to be reset in accordance with ES.9.4	Change text to: …of ES.5 should be capable of being reset at the same time and in accordance with ES.9.4
112	ES.9.10	Clarify term 'cover items'	Review and clarify
113	ES.9.15	Each independent element needs to comply with the requirements of ES.9.1 to ES.9.10	Change text to: …of ES.9.1 to ES.9.10
114	ES.10.6	Revise the upper voltage range to 440 V to align with that in ES.10.4	Change text to: …180-440V
115	ES.10.9	Revise the upper voltage range to 440 V to align with that in ES.10.4	Change text to: …180-440V
116	ES.12.2	The Load Switch need should be configured so that it can be opened – not open.	Change text to: …to be opened, armed…

Serial	Clause/ Sub clause	Comments	Proposed change
117	ES.12.4	Whilst the concept of automatic restoration as defined in ES.1 is a sound high level principle, if it is applied in a simple form it could result in repeated switching on and off of the Load Switch. Additional though needs to be given as to how this would need to work to avoid such cycling. Additional functionality might be: If the consumers load is such that the Maximum Demand Threshold is breached again within a configurable period of time of being restored e.g. 5 minutes, the supply will be disabled again. After three such cycles in a one hour period the meter shall not re-arm and the supply shall remain disabled. In this situation the customer will need to contact the Authorised Party with whom they agreed the Threshold. Limit threshold.	Review and revise
118	ES13.8	The requirement should be redrafted to clarify that the principle applies also when the facility is simply provided by a time switch rather than a load management system per se – although it's not clear is this is an enhancement over present E7 type arrangements.	Revise the requirement along the lines: In the event of a supply interruption outside the control of the Smart Meter System e.g. failure of the Distribution Network, where a customer benefits from defined products such as a mid day boost facility the full benefit should available to the customer on restoration of the supply.
119	Extended Narrative re ES.13.10	Missing words	Change text to: …need to operate in accordance with the main switch defined rules…
120	GS.5.18	Clarify that it is the meter which is enabled and the supply restored	Change text to: …the meter to be enabled or the supply restored.
121	GS.5.22	The 3 conditions in the diagram need to be labelled as the equivalent diagram in ES.1 (They are listed in GS.5.23)	Update
122	GS.5.22	The enabling button is probably more correctly called a 'Restoration Button'	Review
123	GS.10.3	Clarification of requirement	Change text to: …gas shall be capable of being enabled and disables via a …
124	DI.1.6	Include reference to the Events and Definition table	Change text to: Further details are given in the Events and Definition table
125	DI.1.11 &12	The structure and operation of the event logs could probably do with additional thinking – 100 event entries seems to be a low number and some of these may be 'more important' than others such that a FIFO system may not be appropriate	Review
125	DI.1.14	The parties with authority to clear log entries should be more generic	Change text to: …Authorised Parties shall not be able to clear the entries…
126	DI.2.1	Clarify that only the relevant Authorised Party should be able to configure events. The relevant Authorise Party should be define in the Events and Definition table	Change text to: …or inactive, on request by the relevant Authorise Party as defined in the Events and Definition table
127	DI.3.1 Bullet 3	Maximum Demand thresholds would be measured as the peak / instantaneous demand	Change text to: …Maximum Demand (kW)
128	DI.3.1 Bullet 3	Energy is measured in kWh	Change text to: …threshold (kWh over…)
129	DI.3.1 Bullet 3	Clarify the requirement: is it the Volume of gas consumed in a 60 minute period, or the maximum 'instantaneous' gas consumption	Review
130	IH.n	Clarify that all the requirements apply to the Minimum Specification IDH; some of the individual requirements specifically say this whist others don't. This could be interpreted that some requirements only apply to the Min Spec IDH whilst other apply to an Enhanced IHD.	Review
Security			
131	1.108	It appears that this text formed the appendix of another document, but is now in the main body of the Tech Spec	Change text to: …This section presents…
Glossary			
132	General	There may be some terms in the Glossary which are not included in the document e.g. Joule	Review the inclusion of terms in the IDTS

Serial	Clause/ Sub clause	Comments	Proposed change
133	Authorised Party	The parties in the 'for example' list are examples of Authorised Parties – except perhaps for a Consumer – is it intended that Consumers are an Authorised Party	Change text to: …Metering System. Suppliers, DCC, Network Operators are examples of Authorise Parties.
134	Auto restoration	The restoration time should be configurable	Change text to: …after a configurable period…
135	Auxiliary Switches	Clarify that Auxiliary Switches can be internal or external to the meter	Change text to: …Switches, either internal or external to the meter, controlling…
136	Battery Compartment	The glossary seems to describe something that needs to be removed rather than a compartment	Change text to: …A place for retaining a battery that is covered by a door or similar barrier which needs to be removed so that the battery can be replaced.
137	Command	A command initiates an action, where as an event is something that happens	Change text to: …would cause an action to be carried out…
138	Configurable	Parameters and the response to events can both be configurable	Change text to: …Where parameters and the response to events can be set / changed by an Authorised Party, they are considered to be configurable.
139	Component (both terms)	There are two different entries for the term Component	Select one
140	DCC User	A DNO is a Distribution Network Operator	Change text to: …Supplier, Distribution Network Operator (DNO) and Value Adding Third Parties
141	Demand	It may be worth reviewing this term in light the required changes to ES.6 to ES.9. The suggested change is based on that in Metering CoP 5	Change text to: The amount of electrical power (kW) used at a given point in time. This is calculated by: Energy (kWh) consumed in a period of time x (60 / minutes in the period of time). Demand can be an instantaneous value or an average over a period.
142	Demand Response	The term captures User response to both market and network conditions	Change text to: …in response to market and network conditions.
143	Demand-side Management	The term captures User response to both market and network conditions	Change text to: …balance between supply and demand on a electrical system or network constraint, usually…
143	Demand Values	Whilst the term is correctly described (from Metering CoP) without the corresponding description of Demand Period it probably doesn't add much and detracts from the 'simple definition' of demand as proposed above	Delete
144	Disablement (remote)	Disablement can be remote or local	Change text to: Disablement (remote/ local) Opening of the Load Switch / Closing of the Gas Valve remotely or locally
145	Disconnection	Disconnection can also be achieved by removal of the DNO service	Change text to: …meter or DNO equipment.
146	Electricity Meter	Export should also be included.	Change text to: …supplied to or exported from a consumer.
147	HHD	Add definition of Hand Held Device	Update
148	HHU	Should be HHT	Change text to: …HHT
149	Instantaneous demand	This term is covered in the proposed definition of Demand.	Delete
150	Last Gasp	There isn't an expectation that there is a backup power supply available.	Change text to: …communicate this event to the DNO. (delete remainder of sentence)
150	Load Management	Review in light of the terms Demand Response and Demand Side Management.	Review
151	Meter Reading	Would it be clearer to refer to a reading of a meter register rather than a meter index?	Review
152	Micro-generation	Clarify	Change text to: …generation of electricity…
153	Peak Instantaneous demand	This term is covered in the proposed definition of Demand.	Delete

Serial	Clause/ Sub clause	Comments	Proposed change
154	Purge and relight	Clarity	Change text to: …visits a consumers premises and ensures ……or a meter is reconnected….
155	Reactive power	There is no intention to charge for reactive power	Change text to: …Consequently Smart Meters are designed to measure reactive power. (delete remainder of sentence)
156	Remote disablement	Duplicate of Disablement	Delete
157	Remote interruption	Duplicate of Disablement	Delete
158	Restoration	Unless a customer is classed as Authorised Party, the consumer may also Restore supplies once the meter is armed	Change text to: …Authorised Party or consumer…
159	Sensitive	The definition doesn't seem to relate to the term	Review
160	Simple Flat Rate	Clarify if there is a difference between rate and price	Change text to: …(a flat price may…
161	Smart Meter	Update the definition to refer to the latest version of the Functional Requirements Catalogue	Review
162	Supply Interruption	The definition cited is from BSEN50160, however the voltage trigger in the Smart Meter is 180V	Change text to: …lower than 180V, for…
Appendix D Events Table			
163	Event Code 1 (Under voltage stage 1)	The comments field is incorrect (enthusiastic Copy and Pasting)	Change to: The event occurs when the 30min mean rms voltage falls below the under voltage threshold (XX Volts) for YY half hourly periods in a defined period (ZZ days) i.e. to indicate longer term changes.
164	Event Code 2 (Over voltage stage 1)	The comments field is incorrect (enthusiastic Copy and Pasting)	Change to: The event occurs when the 30min mean rms voltage is above the over voltage threshold (XX Volts) for YY half hourly periods in a defined period (ZZ days) i.e. to indicate longer term changes.
165	Even Code 3 (Under voltage stage 2)	The comments field is incorrect (enthusiastic Copy and Pasting)	Change to: The event occurs when the rms voltage falls below the under voltage threshold (XX Volts) but exceeds a lower voltage threshold of (X'X' Volts) for ZZ seconds
166	Event Code 4 (Over voltage stage 1)	The comments field is incorrect (enthusiastic Copy and Pasting)	Change to: The event occurs when the rms voltage is above the over voltage threshold (XX Volts) for ZZ seconds
167	Event Code 10	Refer to the Load Switch rather than Contactor	Change to: …i.e. the Load Switch has opened.
168	Event Code 11	Refer to the Load Switch rather than Contactor	Change to: …i.e. the Load Switch has closed.
169	Event Code 12 -14	There were discussions in the hothouse which concluded that Load management could be implemented by Suppliers and Networks. These requirements were incorporated in a version of the Event and Definitions Table (e.g. dated 19 July 2011) but these have nor been incorporated into Appendix D	Include the Network Load management events: 1 Network Maximum Demand in a 30 min period exceeds threshold - Indicates that the Elec Meter has detected a threshold set by Networks has been exceeded - this could lead to the supply being disabled. 2 Network Energy Limiting Threshold kWh over a definable period - The kWh consumption over a definable period has exceeded the threshold set