

**IMServ response to URN 11D/836 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)**

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Question	IMServ Response?	Response
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.	Y	<p>The timescales for the rollout of smart metering were already optimistic and it's difficult to talk about a completion date for the project when a start date and project plan has yet to be officially announced.</p> <p>If the timescales of the rollout were to be reduced then this would inevitably lead to higher overall costs caused by the need for more dual fuel technicians, etc.</p> <p>The uncertainty about if/when the rollout of smart metering is going to begin, is leading to significantly reduced metering work (advance metering installations, certification meter exchanges, etc) because Supplier/MAPs are worried about stranding any assets they install at the moment. This is making it very difficult for MOPs to build up (or even maintain the workforce that will be required to install smart meters.</p> <p>In short clarity is needed as to when the smart metering project will commence.</p>
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	No comment.
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.	N	No comment.
4. Do you agree that Smart Metering Equipment should be compliant with the SMETS at the time of installation and	Y	As a general principle that approach has worked very well in the half hourly market with changes to the meter Codes of Practice using generic metering dispensations. However the metering dispensations were usually based not only on when they

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that it should continue to be compliant with that version of the SMETS through the operational life of the equipment? Please explain your reasoning.		<p>were installed, but also when they were ordered. Metering dispensations also allow meters to be subsequently installed at a later date (e.g. after recertification).</p> <p>What makes smart metering different is that it introduces the ability to remotely upgrade firmware. This means that it may be possible to remotely modify meter functionality in response to changes in the SMETS as it evolves. To be clear this couldn't apply to all changes, only those that don't require any changes to hardware. And based on our experience of firmware upgrade to modems over GPRS the success rate is not particularly good and some sites visits may still be required.</p> <p>Need to define the set of rules and timescales for changes to SMETS. This should start with the date at which changes to the SMETS are agreed, allow time for manufacturers to modify and test meters, cut off date for ordering meters, cut off for installing meters.</p> <p>One implication of the rich and interconnected nature of the Metering System as it's currently defined (electricity meter, gas meter, communications hub &amp; in home display) is that will a change to one item (e.g. the comms hub) might mean that other parts of the metering system will also need to modified (e.g. in home display unit). Also how and who will coordinate this testing to confirm everything is working properly after changes to the SMETS?</p>
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.	Y	<p>Anyone installing equipment in the foundation phase must already have considered this because a lot of the detailed specification has yet to be confirmed (e.g. HAN/WAN interface). In order to deal with this most meter manufacturers have followed a modular approach to the metering that allows HAN/WAN modules to be installed as they are defined in more detail.</p> <p>Need to define what are the 'exceptional circumstances', how they might be interpreted and what it means for commercial relationships.</p>
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	N	No comment

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your reasoning.		
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	No comment
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.	Y	<p>Current drafting is ok, however as always field issues may complicate matters, i.e. Zigbee is used for IHD and electricity meter install but when gas meter is fitted it fails to connect.</p> <p>This is catered for if the comms hub supports more than one HAN transport technology, but that will increase hardware prices.</p> <p>There is a difference between technical and commercial interoperability too, so what is fine on a commercial level breaks down at the hardware level, this will have a big impact on the MAP</p>
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?	Y	There is a current licence obligation for suppliers to appoint a MAP however it is believed that this is not adhered to and no enforcement is undertaken.
10. What role could a dispute resolution mechanism have a role in ensuring interoperability? What key features should such a mechanism have?	Y	<p>There is the potential for numerous disputes given the number of parties that will be involved in delivering smart metering. Dispute resolution will play a very important role in the quick and efficient delivery of smart metering. For example disputes could arise in the following areas:-</p> <p>2 stage installs – each installer blaming each other. Where there are 2 different suppliers, who would be responsible?</p> <p>Disputes between DCC and MAP over communications issue.</p>
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.	Y	Yes.

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12. Do you think that the licence conditions as drafted effectively underpin the policy intention for Current Transformer meters? Please explain your reasoning.	Y	No, it should be expended to cover all Current Transformer meters, not just domestic ones.
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.	Y	<p>The gas installer would need DNO permission to install a separate Communications Hub and the appropriate skills to carry out this work. This would require a highly skilled workforce. In addition installing a separate Communications Hub is likely to require more time on site than an intimate Communications Hub as in option 3b.</p> <p>Balancing whether to exploit the benefit of waiting until the electricity meter is in place against accepting a potentially more costly and less efficient installation (as explained above) is a commercial decision to be made by the gas supplier. For this reason AMO supports the suggestion that gas suppliers be given the option to wait for the electricity installation as any additional installation costs will ultimately be borne by the consumer.</p>
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.	Y	<p>As previous question – higher skilled (and therefore more expensive) workforce and the longer time it takes to install a standalone comms hub (option 3a) rather than an intimate one (option 3b).</p> <p>Also does the gas supplier would need on</p>
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.	Y	This sounds like the obligation on IGTs to install metering on their networks. The best solution would be to remove the obligation on IGT Remove the need to IGTs to install meters (gas supplier hub principle).
16. Do you think the roll-out of Smart Metering Equipment has any specific implications for the provision of	Y	Not so prevalent in electricity, more of a gas issue. If you assume a 'like for like' replacement, then this makes the whole undertaking more difficult and expensive for IGT and would inevitably lead to higher price for PEMS provision.

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emergency metering services? Please explain your reasoning.		
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	No comment.
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	No comment.
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	No comment.
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	No comment.
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.	N	No comment.
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	No comment.
23. Do you think there are any consequential changes to existing codes needed in order to make the proposed roll-out	N	No comment.

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obligations work correctly? Please explain your reasoning.		
24. Do you think that there are other requirements that the Government should adopt in the SMETS? Please explain your reasoning.	Y	Possibly the hand-held unit that would need to be used by the meter installer where there were no comms?
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.	Y	Yes they should be adopted however there are at least 2 potential rollout scenarios Either a full detailed set of requirements must be finalised and rolled out in a big bang approach, or the requirements should be rolled out gradually starting sooner allowing people to move forwards with at least some certainty.
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.	Y	<p>The overall security requirements are fine as an ideal, however they are far from specific and do contradict themselves when it comes to the level of security.</p> <p>The recommendation to use FIPS is a good one but not specifying a consistent FIPS level (1 2 and 3 are all mentioned) is not a good idea, in addition based on the makeup of the smart metering environment the actual level required would most likely be 4 which is not mentioned at all.</p> <p>The reasoning behind this is that the meters will be at insecure remote locations with little or no protection from tampering so the full FIPS security standard should apply to allow the maximum protection of the consumer and supplier at all times,</p> <p>Also the remote disconnect functionality and 13 months of stored profile data are other key reasons for this level of security as they are new additions to functionality and although disconnect is available currently the wireless connectivity aspect of the SMS is a much bigger risk than existing solutions.</p>
27. Do you agree that the process outlined above is a suitable way forward to develop the SMETS? Please explain your reasoning.	Y	The process is indeed fine, however progress is very slow and is causing hold ups as people are reluctant to move without detail
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?	Y	<p>Ideally the parties that are likely to be financially impacted by changes to the SMETS should be party to its governance. This would ensure changes to the SMETS are done in the most cost effective manner.</p> <p>Who would be involved in the Smart Energy Code? It would need to cover both</p>

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Please explain your reasoning.		electricity and gas markets (there is nothing that does this at the moment).
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	No comment.
30. Do you agree that the Government should include a requirement for a Communications Hub in the SMETS? Please explain your reasoning.	N	No comment.
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.	N.	No comment.
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	N	No comment.
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.	N	No comment.
34. Do you agree with the Government's proposal that fully integrated electricity	Y	Can option 1 be discounted? Yes, but if a foundation meter is compliant with the spec if all other ways other than the comms method (and WAN module), should be

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meters and Communications Hubs will not comply with the SMETS? Please explain your reasoning.		OK.  If the industry thinks option 1 is best way to go, then they would take the risk.
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.	Y	Option B  It is has not been established from a meter manufacturing cost or “time on site” perspective that the communications hub is the best solution.  Even if this were to be the case the industry should still have the option to innovate and provide alternative solutions whilst still meeting the overall requirement of modularisation
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.	Y	Ideally 1, but there might be a need for more if local conditions dictate.
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.	Y	2014 is too late.
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.	?	No MAP is going to risk a large number of stranded assets meaning no one with do any large scale testing without assurances. Also almost all current testing is on so called “sunny day” sites meaning no difficult testing is being undertaken.
39. Do you agree with industry’s recommendation that DLMS should be	N	No comment.



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adopted as the application layer for communications with the DCC? Do you believe there is 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?		
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	No comment.
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	No comment.
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,	N	No comment.

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for example, in multi-occupancy buildings?		
43. Do you think that maximum and minimum demand functionality should be included in the SMETS? Please provide supporting evidence for your response	N	No comment.
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).	N	No comment.
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.	Y	This is essentially turning the metering into a safety device and as it doesn't cater for all floating neutral network faults it exposes the industry to liabilities without completely fixing the problem and for no gain and therefore is not a good idea.
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	No comment.
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.	Y	Would have to be mechanically interlocked to be accepted by the HSE a safe means of isolation.  Why fit this into each meter when it will only be useful for some people? Could fit separate isolators when required – but who would pay for it.
48. Do you agree with industry's proposals for an overall architecture of an application layer standard with	N	No comment.

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translation through a Communications Hub to a HAN? Do you believe there are any consumer, economic or technical issues		
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	No comment.
50. Do you agree that the IHD should only be required to display ambient feedback based on energy usage? Please explain your answer.	N	No comment.
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	No comment.
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	No comment.
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	. No comment.
54. Do you think that an assurance framework, underpinned by regulatory	Y?	The SMETS, Smart Energy Code, SMICoP and licence obligations are sufficient

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obligations, is needed to support the delivery of the required functionality, interconnectivity, interoperability, and security of Smart Metering Equipment? Please explain your reasoning.		
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	Y	Interoperability testing covered here?
56. What are your views on the options outlined for a testing regime? Are there other options that should be considered?	Y	Is there is a good spec. then a market led (self certification – first option) approach would work OK.  Prefer second option.
57. Do you think that a different approach to assurance is necessary for the Foundation and enduring phases? Please explain your answer.	Y	On the face of it there is no reason the foundation phase should have a different approach to the enduring phase, however as there is no finalised specification then how can they be the same? In fact won't the foundation phase by its very nature have multiple approaches while people see what works?
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?	Y	As security is paramount in this network, a full specification of how messages should be securely transmitted between all parties and devices is necessary and the activities outlined should do this if followed completely
59. Do you agree that cryptographic/ key management is necessary to secure the End-to-end Smart Metering System? Please explain your reasoning	Y	Agree, sensitive data will be transmitted over this network including billing information and usage statistics which could be used to compromise both end users and suppliers, in addition the remote disconnect functionality needs to be heavily protected.
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	Y	The assessment is mostly valid, not sure about the increased processing overhead on asymmetric encryption any more, no other options to suggest, however if FIPS (or equivalent standard) is used that may preclude symmetric encryption without a certified assessment of technology used to exchange keys securely.

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consider? Please explain your reasoning		
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.	Y	Not unreasonable, however could a standard certification body be used instead? Or is the intent to keep as few parties as possible in the crypto and certification process?
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.	Y	If means a consumer who has invoked their right to supply their own metering hardware then of course their meter should conform to the standard if it is going to participate in the SMS. However consumers that opt out of SMS (is that possible) should be able to install any MID compatible metering.