

ESTA RESPONSE TO:



SMIP: Consultation on Draft Licence Conditions DECC

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ESTA Energy Services and Technology Association

ESTA is the UK Industry Body representing suppliers of products, systems and services for Energy Management. The 120 members cover Energy Consultants, meter, AMR and controls manufacturers through to full Energy Services/Contract Energy Management.

ESTA is engaged with UK Government policies on Energy and Climate Change, The Green Deal, Energy Performance of Building Directive, Part L Building Regulations, Display Energy Certificates, Carbon Reduction Commitment, Energy Services Directive and the roll-out of smart and advanced meters. It also provides UK input to developing international energy management standards and Chairs several BSI committees.

ESTA members are key to the realisation of a low carbon, secure and affordable energy future. Our members provide equipment, systems and services for energy management to reduce energy demand at source and including renewables.

Our response is a majority consensus of the members involved. Where ESTA members respond directly, they may offer differing opinions on some issues which we respect as expressing their own definitive view.

Key points:-

ESTA

Concern regarding outstanding technical issues to be resolved within timeframe

Transparency in costs for interoperability and switching

A simplified SMETS to allow for innovation, provide for innovation and regulatory comparison for benchmarking

Unfettered access for the consumer to data via HAN/DCC

SMIP: Consultation on Draft Licence Conditions

Response covering specific questions as laid out in the consultation.

2. The content of the licence conditions

2.2 Completion of the roll-out by a specified date (AA1-2)

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.

Outstanding technical issues as highlighted in section 3.3 will require considerable discussion and debate to resolve therefore is 2019 a realistic completion window?

2.3 Installation of Smart Metering Equipment (AA1-2, 9)

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.

Yes, installed Smart Metering Equipment should be compliant with the SMETS extant at the time of installation to ensure adequate provision of Smart Metering functionality recommended at that time. Although SMETS version control needs to be considered as well as the frequency of versions, so that confusion does not arise.

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.

In many circumstances the meter would meet the requirements minus the communications aspect. In this instance surely a comms retrofit would be more expedient and commercially attractive.

2.4 Installation of only Smart Metering Equipment from a specified date (AA3-6)

2.5 Interoperability (AA1-2)

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 condition must refer to the minimum functional requirement for interoperability in terms of required rather than optional information to be displayed on the IHD, as well as service accessible control options within the embedded software to maintain the device. As long as full data access is provided via the HAN, then this should solve the overall interoperability issue and the ability for suppliers to add further benefit as technology develops. Ensuring the HAN interface is comprehensive in nature should allay concerns.

In managing interoperability it is important that transparency of costs for switching supplier is maintained.

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?

Should interoperability issues persist at the end of a contract with a customer, then if costs are transparent and the new supplier cannot operate the smart meter, then the existing supplier should refund the cost of the Smart Meter to the customer.

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

It is important that any mechanism that should be overseen by the Regulator is stakeholder balanced to ensure the complete scope of interoperability discussions. At a minimum level,

checklists as to compatibility across devices needs to be understood. This would also be useful in providing guidance to developers looking to install smart meters without the supplier.

2.6 Exceptions and Policy Issues (AA 10-11)

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

We agree with the licence conditions set out providing non-domestic businesses the option to choose advanced or smart as their preferred metering choice.

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.

Yes. Gas works primarily on pulses and cannot work on mains power. As AMR is more prevalent in Electricity then lead for the systems will come from electricity. Most electric meter specifications contain provision for pulse meter input channels, either hard wired through isolators or through RF. Gas meters can work to these.

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.

For non-domestic consumers the location of gas and electricity meters may not be closely situated, therefore, the cost implications of a „ bridging“ device may be overkill and uneconomic compared to separate comms, so this should not be an issue.

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.

It is essential that non-supplier parties should be able to supply and run smart metering equipment. Without it, and very heavy regulation, there is no challenge to the suppliers on savings performance above and beyond what is mandated.

2.7 Provision of In-Home Displays (BB)

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.

The IHD is likely to become the initial prime interface to the consumer. He will choose it on the basis of how it will best serve him. It is imperative that a new supplier will be able to interface to this, unless they can sell a better one to the customer.

2.8 Consequential changes to legislation, licence conditions and industry codes

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.

Classification of domestic and non-domestic premises should be defined as early as possible. At the border between the two, very small non-domestic premises should have the option to choose their classification. If this differs from historic classification then they will be responsible for meeting the conditions laid out.

3. Smart Metering Equipment Technical Specifications

3.2 Developing the technical specifications

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

There should be the facility to update the IHD functionality as the user becomes more involved in maximizing energy savings.

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.

No. Prepayment should be separate from normal SMART. The issues of security surround prepayment primarily (monies and contactor switching). Excluding prepayment from WAN specifications initially will make the job a whole lot more manageable. What's wrong with giving prepayment customers just an IHD? Suppliers get meter reads through the key and smart card already.

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.

If prepayment and contactor issues were removed, then security proposed in IDTS is an overkill. There is a question of whether such a level is achievable in a reasonable working market. If prepayment were treated separately then the extra security layer proposed in IDTS could be added later.

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

Meter vendors will not be able to develop a meter until the comms/structure has been completely specified, or unless it is excluded.

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.

The SMETS should remain general and not be too specific – this allows for innovation. Innovation first, standards follow. That said the initial standard needs to be scoped properly to ensure innovation can take place. It should enable and not restrict.

We do not yet know what functionality will give the best energy practice. This is important to provide regulatory comparisons for benchmarking purposes and to maintain benefits for a competitive non-domestic market.

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.

Manufacturing costs (parts and assembly) are known and will probably be fairly consistent over the next few years. There may be some variance on world silicon prices, and also some new technologies (e.g. battery, ultrasonic gas flow). However, vendors will want to bundle in development costs to the price of their meter. If the SMETS is too specific and there are many versions, then these costs will be high, against the number of meters issued. However if the SMETS is kept very general and the meter vendors are able add their own functions and features to improve energy practice, they will be able to control costs much better, and commoditize internally, resulting in lower prices to the market.

The requirement for firmware upload is worrying, and unlikely to be necessary. It will either result in much higher up-front costs from the meter vendor to support multiple versions, or in ongoing support costs they will require to maintain it.

3.3 Outstanding technical issues

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

No. A communications hub has arisen from the gas side and is only necessary if the smart programme is being led by gas metering.

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

We do not believe that the DCC should contain any detailed functional requirements, as these are likely to change and are in any case specified in the SMETS. The DCC should provide the transport of unspecified data between meter and supplier/agent. The Open Pipe proposal and Working Group must be established soon to ensure that this happens.

33. Do you think that the Communications Hub should also have the Roll-out obligations consultation August 2011 functionality to send a communication to the DCC when power is restored? Please explain your reasoning.

It would be wrong to make a design requirement rely on a communications hub, which should only be optional for gas-led metering.

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.

The greater the level of integration the less likely interoperability and therefore innovation will be possible.

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.

Caution is advised as to whether a standard is an "industry standard" or whether it is a "closed industry user group standard". For example neither DLMS nor SEP are accessible/appropriate to the level required by the Programme, but they are both generally accepted as "industry standards".

Proprietary protocols if defined and licensed robustly will probably do a better job because they are commercially driven. For example the Microsoft Windows basic API, the Open Office interfaces, iPhone Apps. DECC / DCC would do well to negotiate a UK wide licence for an appropriately scoped and stable API to meter, IHD and other devices in the home, perhaps disseminated through the DCC.

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.

There is little value in standards being "recognised" by original adopters or developers of the standard unless there is practical success in the market.

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.

Yes. HAN accessibility has received little attention so far. The consumer must have as good access to data through the HAN as the suppliers do through the WAN.

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?

No. DLMS does not allow meter vendors to develop their own functionality independently. It should follow innovation, not lead it. Subscribing to DLMS would add delays to implementation of any new feature or function the Program required.

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?

No. Similarly to 39) Zigbee SEP 1.x and the translation equipment provided by the industry will restrict functionality to a fixed data set, which cannot be changed without updating specifications.

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.

IPv6 is a much better approach. It specifies network requirements only, and not data items. With it would need to be included some specifications on bandwidth and technical performance for both HAN and WAN – this is likely to be lower than what is achievable through the internet.

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?

A network only specification is essential for the WAN. Multi-occupancy buildings can surely be included within the scope of IPv6 without having to include meter type data.

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

Probably, but then we will discover more functionality that also should be included. The system should support meters vendors adding whatever they think they need to improve energy practice.

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).

Almost certainly, and again see answer 43). As soon as you carve the SMETS in stone, another requirement will appear. The DCC ↔ SM connection needs to be flexible and scoped accordingly (Open Pipe).

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.

We believe full support of a contactor switch should not be rolled out in the initial phase for non-prepayment customers. Perhaps contained in the meter, yes, but not implemented in the WAN. Any requirement that depends on the presence of a contactor should therefore be avoided.

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.

Consumer access should not be restricted and should consumers wish to transfer data from the HAN to any other device then this should be permitted.

The interface to the HAN should be well enough specified for this to be possible. The fact that a bridging device and its source is being discussed indicates that the HAN interface will be somehow "closed" and requires the bridging device to provide the customer access.

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.

Wherever possible existing procedures should be used with existing trained personnel, although, additional expertise will be required for communications proving/testing. This is a significant driver for a separate comms module that can be hot-wired to a pre-installed “ smart-ready” meter.

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

The presence of yet another interface and its specification just makes another layer a consumer will need to get through to gain appropriate access to the meter. The meter should be the final arbitrator of contract between supplier and customer – both parties should have equal access.

We believe translation should take place using “ drivers” provided by the various vendors of metering, control and display equipment. It should be possible for these drivers to be loaded to provide interoperability / interchangeability. For example, if a customer wants to change his IHD, it should be possible to download a driver for his existing smart meter. Or conversely, if a customer buys an IHD and wants to take it with him to a new premises with a different smart meter. Such “ drivers” are common-place in the PC / App world and not difficult to specify.

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?

Translation will be best managed where drivers are easily installed. This is likely to be at the Head End for the WAN, and the IHD for the HAN. Alternatively the communications hub could be loaded with a number of “ drivers” to provide both WAN and HAN support for the popular IHDs and meters.

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

Demonstrations ESTA members have done showing cost savings in pounds sterling rather than energy or carbon savings have always attracted more interest. Including cost element should not be more costly, if it is made clear to the consumer that it is not the fiscal cost, just an indication.

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?

No. This will escalate support and contractual issues beyond its usefulness. Account details for most people can be obtained on-line.

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?

There are benefits from say, setting £100 block of energy and seeing how long it takes to be used up (i.e. similar to an oil-level indicator). That will help the consumer save. But linking that to the account is unlikely to save in the initial phases.

Note there is probably merit in the future for green energy suppliers to sell (for example) £100 of solar energy which can be used at specific times of the day and year. But then you are into the realms of multiple supplier tariffs etc, which is too much for the first stage.

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.

It is difficult to see how all the issues can be resolved to a prescribed specification within the time-scale. Our recommendation would be to make the specification more general and to include existing installed assets, with for example add-on comms modules to provide IHD and remote access. This would :-

- a) save the Program from re-inventing the wheel
- b) separate specification/installation of meter and comms
- c) make use of existing assets, structures and processes
- d) allow more vendors to remain / become part of the DCC-Smart connection
- e) consequently save cost and enable timely roll-out

3.4 Assurance and interoperability

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.

Yes, however if the regulation comprises only of arbitration between the Big 6 then it will not be effective enough. The Big 6 can agree between themselves that systems are functional, interconnect-able, interoperable and secure, but what happens if a customer (or his appointed agent) disagrees ?

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

Yes, and this should be independent.

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

In the Foundation Stage there are likely to be devices and systems which perform well in energy savings delivery, but that do not meet SMETS. It is possible that they may perform better than their SMETS equivalents. The arbitration as to whether the equipment can remain should go back to the original government objectives for smart – not to a specification that has arisen from government consultation and subject to significant influence by the Big6.

3.5 Security Trust Model

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?

Communications should be separate from metering. In other words cryptographic security should be a function of the DCC alone, and not affect the meter (apart from perhaps areas where keys are stored).

Local meter communications has been in place for over 20 years for reading and programming meters (including contactor switching). The local method has also been replicated to remote methods in industrial metering (the same protocols). There has been no evidence of tampering using this local interface. Part of the reason for this is “ obscurity” - each meter having a different set of data identities to perform different functions make it difficult to do a global “ hack” . The logical extension to this is if the DCC can provide a secure link from meter to head-end, then the specification of the meter and its functionality need not be determined as part of the secure “ trusted” connection. This will be essential for the provision of Open Pipe to (for example) the networks, water and health industries.

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

Such a level of security will only be required if contactor switching is enabled.

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

These are very useful comparisons and give a good basic guide for the different security methods.

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.

If the DCC is responsible for network registration, then it would make sense for them to administer any security keys. However care should be taken that such administration does not impair access by the consumer to his own data.

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.

If the Open Pipe approach is maintained then meter data will be transferred transparently across either the trusted DCC connection or across the opted-out connection. The only difference is that the DCC connection will be more secure, allowing more security sensitive information to be transferred. This is likely to be limited to contactor switching and any future financial transactions.
