SBGI Response

To

Smart Metering Implementation Programme: Consultation on Draft License Conditions And Technical Specifications For The Rollout of Gas And Electricity Metering Equipment

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Contact Information:

The SBGI Response

SBGI Utility Networks is pleased to provide this response to DECC's response to the consultation as an important step in moving towards the UK's low carbon economy.

SBGI is a trade association representing over 200 UK-based companies in the energy and utilities sector supply chain. It has two operational divisions; Utility Networks and the Heating & Hotwater Industry Council (HHIC) and works in close cooperation with trade associations within the sector.

Our Utility Networks Division represents gas distribution network owners and the "beach to meter" products and services supply chain thereto, in particular meter manufacturers and installers.

Many of our members will have responded separately to this consultation. The response below highlights views held common by our member companies. In cases where a common viewpoint has not been possible, this clearly stated and our members' range of views has been documented for information.

SBGI Digest of consultation questions:

1.

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

We are concerned that there is the potential for a penalty for late provision of network, but a lack of clarity or an outline proposal to explain "Completion", and how this is verified.

A penalty (10% of turnover) on Supply businesses for failure to roll out to 100% of their customers has been set for a specified date. It is however unclear how any impact or delays will be resolved between the DCC and Supplier during the roll out to ensure adherence to pre-agreed plans.

How will accountability be apportioned with split responsibility between the Supplier and DCC?

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.

Supplier question

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.

Supplier question

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 the smart metering equipment will need to be compliant with SMETS (smart metering equipment tech spec) at the time of its certification and manufacture prior to installation, when full rollout begins.

There may need to be a time window here to support the certification process, manufacturing build and logistics management of goods prior to installation.

The meters may be firmware upgradeable for changes in SMETS where this is needed to support the Energy Supplier or Network requirements, but we should not insist on compliance to new SMETS versions where there are hardware impacts other than in exceptional circumstances.

Maintaining equipment to evolving specifications will result in higher additional costs of manufacture to compensate for unforeseeable options and the stranding or replacement of the equipment in the event of unforeseen options meeting the changing specification. Therefore any equipment should comply with the extant SMETS at time of installation.

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.

Yes but this will depend on appraisal of the exceptional circumstances and the associated commercial impacts. E.g. if it's for Network benefits who will pay for the upgrade exercise?

Clauses 50-52 define the meters that might be subject to this requirement - so industry should be able to assess their potential financial exposure risk under the "new & replacement" obligation, and advise government accordingly. Any additional deployment should be at the suppliers own risk.

It is clear, therefore, that government must put a system in place for controlling the specification, such that the costs of a change that may require meter replacement is fully considered as part of the change control process.

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.

Supplier question

7.

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

Supplier question

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 intention should be to ensure Energy Suppliers align on the supporting technology and specifications where these are beyond the SMETS. E.g Short list of SM HAN and preferred technology for SM HAN where this is functional within the household. Agreement on checks for SM HAN suitability for the whole house even if it's only initially being fitted for 1 fuel.

We assume the Application layer and documentation identifying the data objects and command will be in referenced from SMETS,

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?

Supplier question

10.

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

In order to achieve interoperability, SBGI believe that any test regime and any subsequent claim by DECC that interoperability has been achieved must take into consideration that the test and claim are backed by a critical mass of manufacturers and devices, so that the claim is underpinned by as wide and diverse product mix as possible, thus capturing possible variation and interpretation of the specification (IDTS). SBGI believe that fulfilling these criteria will require manufacturers to reach the same technical benchmark with their products and therefore must be consulted as to how and when this can be achieved. SBGI believe that DECC must state clearly the rules by which interoperability will be justified so that the industry has an agreed basis to support the aggressive programme timetable.

We therefore believe that full interoperability is likely to evolve during Foundation phase, as the interface specifications are agreed and completed. There will be then be work to get new data objects in these GB companion specifications approved through the relevant standards bodies. In parallel test specifications can be started to provide common reference points for manufacturers and a full test assurance process can follow. The target should be to ensure this is in place for the "enduring" phase.

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.

Supplier question. Perhaps BEAMA could comment further.

12.

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

Supplier / BEAMA question.

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.

This is mainly a Supplier question.

It's possible that there are a range of reasons where suppliers will wish not to install smart meters at the routine replacement time. While "gas first" may be one of those reasons, others include difficult meter positions, etc., and a process will be needed to ensure that efficient use of installer resource in these difficult situations.

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.

Yes, suitable access to power supply for a Comms Hub. Should suitably qualified staff have access to network side of electricity meter to facilitate the install? - May need changes to codes.

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.

Supplier question,

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.

There will inevitably be implications and there needs to be in-field interoperability with authenticated HHTs etc that allows emergency services to get customer on supply due to any metering faults minimising exchange of meters. . – DECC needs to hold a workshop to involve all parties eg: networks etc.

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.

Supplier question

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.

Supplier question

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.

Supplier question

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.

Supplier question

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.

Supplier question

22.

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

Supplier question

23.

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

Supplier question

24.

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

We believe the core requirements from the IDTS and, where directly related, the Industry supporting documents should form the basis for the SMETS. These will also need to take into account:

- Outputs from the Business process work in the DCCG groups,
- Resolution of Comms Hub (see below), Push Pull and security discussions,
- Further inputs from industry to ensure the data modelling is more closely aligned with the preferred application protocols to avoid excessive rewriting of protocol standards to fit the GB model
- Further definition of the HHT interfaces in a separate section including the direct impacts of security and privacy.
- Security algorithms, accreditation etc need to be considered.

Our Data Comms group members have specific concerns on the Comms Hub. We appreciate some of this is linked to the ownership question and some aspects of the standardisation may be more applicable for the mandated rollout rather than for foundation installations.

The Comms Hub specification should be specifically identified within the SMETS. The requirements should include physical, mechanical, electrical, logical functions specifications. Physical characteristics (minimum envelope) should be identified so an assessment can be made of its suitability for installation. The mechanical requirements, separable WAN & HAN module should be identified for example. Electrical specifications, the smart electric meter specifications calls for a number of electrical safety measures - do these also apply to the Comms Hub? The Comms Hub is recommended as the preferred option for the enduring market and will therefore be a major component of the SMETS, yet presently does not have a dedicated section which explicitly identifies its functional requirements of this component within the technical specifications. These requirements will be required to manufacture a standardised comms hub to achieve interoperability.

We believe that the security risks around push and pull communications are basically equal. Other markets have taken a different view to DECC.

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.

Yes we believe a lot of work has been done by industry experts in the IDTS. It is still though a raw document in a number of aspects and the following should be addressed in generation of the SMETS:

- Check for requirements that may have become over specified in the requirements by industry committee process e.g. those that could significantly impact development time with little benefit as these will delay delivery of compliant interoperable equipment.
- As described above carry out an exercise to assess the data model with the preferred application protocols to avoid excessive rewriting of protocol standards to fit the GB model. This should include assessment by experts within SSWG which is already doing this for DLMS and SEP1.x
- Ensure requirements are not repeated in other requirements (present in a number of cases and SBGI will highlight where they believe this is the case).
- Clear identification of the degree by which the requirement affects each device in the SMS. The architecture supporting document holds a reference for this which now need further assessment with the detailed ESoDR requirements in the IDTS.
- Editorial work to ensure a thorough review and alignment of detail.

Normative References table ; the table has been extracted improperly from the Draft European Technical Report, in that there are a number of caveats around the table that should be reproduced. The most important of these is that this is not an exclusive list of standards. This aligns with the Government position in the consultation that standardisation will need to have started by early 2014.

SBGI Have included an assessment of the IDTS attached to this consultation. This identifies sections as:

- "Major" where we believe changes are required to the IDTS to clarify the requirements so they can be understood by manufacturers, , in some cases expand the requirement detail and In some cases simplify to ensure the core requirement can be realised without delaying the programme and achieving technical interoperability

- "Minor" where there is further editing work required e.g, removing repeated requirements and clarifying sub-requirements.

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.

SBGI have provided an assessment of the Security requirements in the IDTS in our attached assessment of the overall IDTS associated with question 25.

We believe the security requirements in the main are appropriate to the level of risk but that DECC should focus on the core high level requirements. We have some concerns that the IDTS proposes details that will cause some problems for manufacturers and we propose that the determination of appropriate security mechanisms should be done jointly with Industry group work on selection of the appropriate HAN and WAN application profiles. Our views on this are expanded in the answers to questions 58 to 61.

We agree that the cryptographic cipher functions need to conform to a standard (e.g. FIPS), however the specification, as written, might be interpreted to require additional hardware security modules which will add cost and potential delay to the programme. It is preferable that the cryptographic algorithms for the GB solution conform to standards within the preferred application profile and we believe the option should remain for these to be implemented in firmware inside physically sealed devices. We have further details on this in the answers to questions 58 – 61.

27.

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

We support work along the lines of the example shown but would urge consideration of the answers to questions 24, 25, 26, 27 above.

In terms of delivering an unambiguous response to a set of requirements, the greater the granularity of each specific requirement, the less ambiguous the response: The ideal requirement statement is completely atomic - containing just one requirement. The generation of such atomic requirements is generally accepted as best practice by industry. Whilst this may not look "good English", it is considered to be "good engineering". The exhibited proposal showing the output post- government legal and regulatory review would appear to be taking the "well written" relatively unambiguous requirements from the IDTS and aggregating them to provide a consolidated but potentially more ambiguous requirement.

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.

Governance of the SMETS is not straightforward to achieve. A requirement that suppliers use SMETS – compliant equipment can be achieved by Supplier Licence Condition, however, managing, maintaining, and providing guidance on the SMETS will require a technical panel with representation from across industry. A past example of this has been the relationship between MAMCoP and the standards organisations, IGEM, BSI, etc; and it may be that a similar structure is best suited to the SMETS.

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.

SBGI has requested that its members should share this information with DECC directly as it is of a commercially sensitive nature.

The benchmark should be against similarly regulated industries.

30.

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

Architecture group fairly unanimous with this idea across industry and DECC representatives.

Yes, a Comms Hub is needed to:

1) Enable /support Gas first as an option,
2) Avoid gas data being buried in an electricity meter (raising suspicion on independent supply of electricity and gas to a property),
3) Cater for different power supplies to different WAN technologies
4) Cater for HAN technology options
5) Simplify compliance with the Security requirements which need strong WAN and HAN access controls

It should be noted, however, that there are a range of technical solutions that could provide lowest cost solutions to the gas first and difficult property scenarios. Experience during foundation should be gathered, and installers given the flexibility to ensure that effective, low cost architectures that maintain the principal benefits are employed.

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 believe the £1 figure for costs is conservative. The actual figure will depend on the WAN comms it is supporting and the accuracy of the voltage threshold and time limit for reporting required. For PLC it is arguably £0, LRR, Mesh its reasonable, GPRS will be higher. Also the IDTS proposes that as part of last gasp the Comms Hub should check connection with the electricity meter and this could increase costs further.

The comms Hub or comms module or WAN Module is best positioned to detect an outage and send a notification. However the electric meter is best positioned to detect the loss of power being the measuring device. The loss of power indication from the electric meter will start the process of detection of a power outage within the comms hub, comms module or WAN module.

The requirement written in OP.3 is written in the technical detail of a network specification. If it is the intention to blend network specifications within the IDTS then the justification must show all alternative methods available to the network operators to obtain the same or similar information, since we believe the same information can be obtained at strategic nodes within the network and thus reducing the overall cost. If similar information is required for the consumer then we believe the technical requirement should be adjusted to a more affordable level.

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 agree it is the communications service provider's responsibility to define the requirements for outage detection, as these requirements will need to be defined by the industry, "what characterises an outage" e.g. difference between momentary interruption and an outage. It is the responsibility of the communications provider to send the outage notification.

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.

This would be subject to standard specifications being agreed where components are exchangeable between different manufacturer's products and excluding the option of a fully integrated electricity meter and Communications Hub.

SBGI Data Comms members stated that; on a meter/ comms hub this is really a standard event that is then configurable as an alarm with immediate report or as part of the next scheduled comms session; it's not a big deal.

Yes "First Breath" should be included in the requirements. This will allow correlation to happen to between premises where power has been restored and those that have not responded, so remedial action can be taken to identify those premises which have been identified as still off power. This will reduce costs of cable or lines crews by identifying secondary faults. These scenarios are becoming more prevalent with global warming.

The comms Hub or comms module or WAN Module is best positioned to detect a restoration and send a notification. However the electric meter is based positioned to detect the voltage within limit being the measuring device. The power indication from the electric meter will start the process of detection of a power restoration within the comms hub, comms module or WAN module

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.

We agree that initially these would not comply with the reasons set out in question 30. However we propose this is reviewed as there is progress with the rollout and more knowledge on the term and performance of WAN and HAN technologies.

It seems a fallacy that the consumer won't be affected by any form of WAN change - for all will require a visit to the premises (to swap a module, or a Hub, or perhaps an entire meter). It is believed that it is the additional visit that could irritate the consumer, not the actual nature of the work being undertaken! Where the WAN technology is devoted to a SM solution, then unless the metrology comms requirement changes, the WAN is as implicitly enduring as the rest of the meter.

We note that the two most favourable options in Table 5 on the Cost comparison show the Fully Integrated and Intimate Comms Hub to have the highest NPVs. Integrated Comms Hubs should therefore be considered if the requirement to field upgrade the Comms Hub in the meter lifetime is minimal.

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.

SBGI Data Comms, Architecture group from Hot house position and supported by us is:

Suppliers should have the choice of technology to fit for the Comms Hub to be stand alone or intimate to the electricity meter. We believe the Foundation and Mandated DCC needs both options to maximise the rollout volumes and optimise the installations for whether electricity only, gas only or dual fuel, whether the meter cupboard is suitable for an electricity meter with intimate hub or smaller base meter with a separate hub etc.

To avoid issues arising from field upgrades we recommend

1) For Intimate Comms Hubs to be compliant they should be field upgradeable so the installation can be switched to a mode to work with a new stand alone Comms Hub

2) Where an alternative HAN transceiver is needed for problem sites the Comms Hub should also support the standard SM HAN transceiver for interoperability with the field staff's HHT.

3) We support further work on standardisation of the Comms Hub to meter interface the ERA are proposing. We have some concerns on the time to develop such a standard so this should be in parallel with using existing available interfaces.

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.

For technical interoperability we need the main SM HAN to be common across the deployment unless limited by problem sites. We would therefore like to see agreement by Energy Suppliers to do this unless the Government takes the initiative to mandate a technology in the SMETS.

We do not believe there is such a technology that is currently an approved standard as defined above for the network and application layers that will meet the GB requirements across all of the property types.

The HAN working group assessed this and they proposed that there should be a timeframe for standardisation e.g. demonstrate that the proposed HAN is formally identified as a work item by a European or International Standards Organisation.

Additionally the HAN working group proposed to use the European definition of openness in the shorter term:

- All stakeholders have the same possibility of contributing to the development of the specification, and public review is part of the decision-making process
- The specification is available for everybody to study
- Intellectual property rights related to the specification are licensed on Fair, Reasonable and Non-Discriminatory (FRAND) terms, or on a royalty-free basis in a way that allows implementation in both proprietary and open source software.

SBGI support this approach.

We perceive HAN standards to be a much more pressing area for regulation than WAN - as some (many?) of the benefits of SM, as perceived by the public, will come through the use of HAN equipped products. It is therefore essential that HAN enabled devices interoperate reliably from the earliest possible time, and are simple to put into service.

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.

Yes we support this. Smart Metering standardisation is rapidly advancing as is expected with the markets reacting to the US and EU regulatory initiatives. This is a suitable timeframe for assessing appropriate standards in HAN technologies.

The governments research has shown none of the existing recognised standards are fully fit for purpose.

Clearly earlier standardisation would be better however the GB requirements should drive standards rather than the other way round. Hence support the HAN working group recommendation on ensuring openness as defined above.

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.

For technical interoperability we need the main SM HAN to be common across the deployment unless limited by problem sites. We would therefore like to see agreement by Energy Suppliers to do this unless the Government takes the initiative to mandate a **technology** in the SMETS.

We believe industry is converging on a main SM HAN technology (ZigBee) that will be suitable for a large majority of consumer properties. The nightmare scenario of each Energy Supplier deploying a separate HAN technology in Foundation is therefore highly unlikely.

We support further work to build evidence on HAN performance across different property types and in particular solutions of difficult property types. This could initially be by industry co -ordinating with DECC on radio module testing.

Any test approach needs to be careful to avoid delays to foundation deployments that will provide real field evidence as well as testing other parts of the processes that need to be robust for high volume deployments.

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?

Not clear that the hothouse clearly recommended DLMS. There was discussion of both approaches below.

SBGI data comms views on this – app layer group output below as I think we have 2 views

We understand there are 2 views on this arising from the application layer group work.

1) WAN application layer is DLMS only

2) WAN application layer is Dual protocol so supporting DLMS for the electricity meter and native SEP 1.X for gas meter/gas mirror, Comms Hub configuration & data items could be either.

We recommend these are both assessed further with DCC work and industry application layer groups (DLMS UA, SSWG and others) to ensure the protocol is an open standard, suitable for the scalability and cost targets and service levels of the DCC as well as meet the SMETS data object requirements

We recommend only one clearly defined application layer should be active on any communications hub. This could be a dual protocol, or a single technology. Having more than one application layer could cause conflict with accessing the same hardware within the hub or smart metering system. The inclusion of multiple applications layers adds to the cost and complexity of the communications hub with added routing capability.

This does not rule out the support for multiple applications layers, to allow for the evolution of technology within the smart metering system. The application layer could be different across different communications hubs, allowing newer versions of communications hubs to be supported

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?

We support this assessment.

From a gas metering view we believe SEP 1.x is a suitable standard to meet the IDTS data requirements although is needs a number of enhancements in data object definitions to achieve this. We do not believe DLMS is a suitable protocol for domestic battery powered meters. Although it can support gas it is typically used for much larger gas metering applications today.

We support the use of DLMS for electricity as this is common with other markets in Europe

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.

We agree with clause 154 – the transport layer should be left to the communications provider to allow innovation as per M441. The communications provider should be responsible for the end to end communications provision.

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?

Ok for single occupancy homes suggest it needs further review for multi occupancy buildings as does the LAN/HAN within these.

43.

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

This question is really aimed at electricity network monitoring, we do not see any benefits for Gas.

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).

This question is really aimed at electricity network monitoring, we do not see any benefits for Gas.

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.

One for BEAMA

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.

Yes, likely interaction with consumer networks is low at least initially and preferred consumer network is unknown so this is the most cost effective.

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.

One for AMO

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

See the answer to question 39, Both are valid options in our view.

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?

We believe there will inevitable need to be some translation at DCC to interface between metering, IS systems and DCC users.

It is likely that some level of translation or similar data processing will take place in the comms hub. This is likely to be functionality related to the Gas Mirror. Our view is that translation is permitted in the Comms hub subject to security requirements being met. This allows flexibility in the delivery of an efficient comms network.

50.

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

Question for consumer groups.

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?

Supplier/Consumer group one

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?

Supplier/Consumer group one

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.

Real Time gas Demand - We agree with the clause 202 on gas usage information on the IHD however we're concerned this is not reflected in table 6.

Smart Metering Equipment Data Items – SBGI have significant concerns on the proposed data catalogue. To date there has not been any work carried out to assess this against standard application protocols for WAN and HAN (e.g. DLMS and SEP 1.X). We propose that DECC consider the approach here and request assessment from groups looking at metering equipment protocols e.g. SSWG as well as DLMS UA and ZigBee UA.

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.

We believe an assurance framework should be developed for the Enduring phase, using the recommendations of the Interoperability Test working group as the start point.

However we have concerns on this approach for foundation phase as its likely the underlying standards will be still be developing and we risk the volume benefits to UK PLC set out in the impact assessment in these early years.

The foundation phase should be a test ground for enduring phase and we expect manufacturers to be working with protocol groups to agree the interfaces to meet the DECC/Industry IDTS/SMETS requirements. Many SBGI members are already very active in SSWG to ensure solutions meeting the IDTS are based on common open specifications. We are also active in CEN TC 294 and its UK mirror in BSI, DLMS User Association and the ZigBee Alliance to support standardisation of this work.

During foundation we would expect to see the shift in the work within SSWG (and others) from agreeing GB companion specifications to existing standards, through to work defining test specifications for interoperability which can then provide a basis for an initial level of interoperability and the work to define an assurance framework for enduring. This needs a critical mass of manufacturers and devices to develop and prove the process.

DECC and Energy Supplier input to the process will be required to prioritise the interoperability requirements and meet the timetable for "enduring".

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 – testing regime will be needed as set out above.

We would recommend development of test specifications aligned with the use cases, and interface definitions defined down to protocol, and data object level. These can then be used together with "golden units" as the basis for certification. The output from the Interoperability Test Working group is a reference point together with the current process for ZigBee certified devices.

As set out in the responses to Questions 10 and 54, we believe it is premature to expect to get this in place for foundation and it requires a critical mass of manufacturers and devices to develop and prove the process.

56.

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

Please see the answer to Q55

57.

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

We believe a different approach is required for Foundation phase which will allow the convergence and completion of interface specifications, initial agreement on common test specifications and the process to put assurance in place for the "enduring" phase.

Please see our answers to Q54 and Q55 for further details.

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?

While we broadly support the work to-date outlined in this section we have a number of concerns relating to clauses 219 to 214:

219: While STEG was initially open to a wider review body, the DCC procurement restrictions make it difficult for most manufacturers to be part of the current process. We urge DECC to reconsider how manufacturers can be engaged in any further work to ensure the requirements will be applicable to embedded metering devices.

224: We support the development of an overall trust model. However we do not believe the cryptographic key management needs to be designed at Government level. Instead, only high level requirements on functionality shall be given to the DCC operators and manufacturers (e.g. "devices shall support a hybrid scheme using FIPS approved ciphers"). Industry can then support the development of detailed specification along with work on the application profiles for WAN and HAN.

Regarding the specification of cryptographic primitives:

- The development of common cryptographic interfaces will only significantly support interoperability as part of the Application Layer protocol and associated data items linking the devices on the WAN and HAN.

- A number of SBGI member companies are already working on addressing these requirements based on application layer protocol standards and where available European standards. Industry groups are well placed to take on this level of detail for the WAN and HAN protocols. E.g, via the protocol user groups in DLMS User Association, ZigBee SEP, supported by companies focused on GB requirements via SSWG.

- UK Manufacturers in SSWG are already proposing a set of cryptographic primitives to be supported following the *hybrid* model. This should be an area where industry can lead the definition with validation by appropriate DECC personnel..

59.

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

We agree that key management is necessary. Amongst others, these functionalities will enable a secure firmware update mechanism of devices, the provisioning of trust, on and offline key establishment.

However as set out in Q58 above we do not agree that the mechanisms for key management need to be defined at government level. Instead industry groups are best placed to take forward the technical implementation specification aligned with the work on extending application profiles. The resultant standards or proposals for standards can then be referenced from SMETS.

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

We agree with the advantages outlined for the solutions and manufacturers are already developing and defining open interoperable solutions based on the hybrid scheme. We do not believe that further hardware is necessary to be mandated to realise the "asymmetric" or "hybrid" functionality for any mains powered devices and there are already meters and Comms. hubs becoming commercially available that utilise the hybrid scheme completely in firmware.

Battery powered devices (e.g. Gas Meters) may also be able to use the hybrid scheme depending on the appropriate use of symmetric and asymmetric algorithms. We agree that, compared to a symmetric operation, the invocation of any asymmetric operation could significantly drain energy from those devices. Therefore, asymmetric operations are only proposed to be applied to critical commands (e.g. monthly billing meter reads, prepay top ups and tariff configuration). This is already the basis of the Security requirements in IDTS and is recognised in manufacturer work on application protocol extensions.

Additionally we do not believe that mandating the use of a dedicated hardware security module will significantly improve security of an architecture where all devices use unique credentials and are physically sealed (tamper evidence). i.e. a physical attack will only affect one particular device. However, a mandatory use of dedicated hardware security could significantly increase the unit price as well as delaying design processes and foundation volumes. The required reliability of the cryptographic function can be achieved with the use of approved cipher implementations (e.g FIPS).

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.

We agree that DCC is the most suitable location for key management responsible for the Smart Metering System although we suggest this does need to be tightly linked to meter registration. instance. However further consideration will be required to ensure that links to manufactures are effective to support use cases for secure firmware updates and for return/repair.

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.

We propose that advanced meters continue under existing schemes, once devices are opted in they should be capable of aligning with the security schemes outline above.

We also recognise that the work to date in STEG and in the IDTS has focused on domestic customers to date. More work is required reviewing the non-domestic market and avoiding unnecessary constraints on the existing deployments of advanced metering which in turn could delay the benefits to this market.