Smart Metering Prospectus

Early Questions

SBGI Response

Smart Metering Prospectus Answers to Early Questions

The SBGI Response

SBGI Utility Networks is pleased to provide these responses to the prospectus questions on Smart Metering for Gas and Electricity.

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 other 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 metering services providers and data and communications system and services providers.

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 has assessed all responses received from members and we present below some key issues and priorities of our members below. SBGI is committed to being an active participant of stakeholder workshops and meetings on all matters concerning Smart Metering to ensure that we are able to properly continue to represent our members' common views.

SBGI Responses to Prospectus Early Questions:

Main Prospectus Questions:

Chapter 2:

Question 3*: Do you have any comments on the proposed approach to ensuring customers have a positive experience of the smart meter rollout (including the required code of practice on installation and preventing unwelcome sales activity and upfront charging)?

Answer:

To facilitate a positive experience the programme must ensure that there is:

- *Minimal number of visits (Single wherever possible)*

- *Whole experience – install, training, meter data, bills are all joined up, including coordination between gas and electricity*
- *Ease of installation- Any issues with existing installation must be resolve quickly and efficiently without customer involvement, or cost, wherever possible.*
- *Timely home visit*
- *Ease of use of IHD*
- *Clarity of processes and instructions*
- *Interoperability – e.g. change of supplier or change of WAN must not provide issues for the customer. This need to be defined right as early as possible to avoid issues later.*
- *Clear customer support is available and there is clear ownership and management responsibility of the connectivity in all circumstances: meter change, supplier change, WAN or HAN change.*
- *Clarity of Code of practice in the spring package*
- *Whilst there is some concern that over-selling or cross-selling by suppliers during meter installation may affect the customer experience, opportunity needs to be allowed in the COP for suppliers to highlight to their customers opportunities to further improve their energy efficiency, for example by identifying particularly inefficient heating system, or other aspects relevant to 'The Green Deal'. The COP should also encourage the identification of any unsafe gas appliance installations, and support remedial action under existing codes. In this respect absolute industry clarity is needed on what an unsafe installation is.*

Note: MAMCoP and SMOG are currently reviewing many of the "Old Chestnuts" surrounding meter installations. It is essential that the output from these groups is reviewed and adopted where appropriate ahead of the early roll out start.

Chapter 3:

Question 6*: Do you have any comments on the functional requirements for the smart metering system we have set out in the Functional Requirements Catalogue?

Answer:

We strongly support the work undertaken to date in developing the Functional Requirements Catalogue and believe this represents a good basis for wider industry involvement to complete the technical specification. However, we have highlighted a number of detailed points on the current draft:

- *HA11 and IH2: There are inconsistencies between the various references to interval periods. In other European markets there is a trend towards hourly or half hourly updates from battery powered meters whereas the Functional requirement states 15 minutes and 30 minutes in different places. For a minimum specification to maximise the battery life we would recommend the figure of 30 minutes is used for gas. This would not prevent meters providing more frequent updates as battery saving communications algorithms evolve.*

- *3.33 And DS.2: Memory costs and 12 months data storage. We believe the memory costs are underestimated for high reliability, long life metering components. The technology for non-volatile data storage in meters is typically EEPROM devices whereas the assumption in 3.33 is based on SD card technology requiring supporting processing not normally contained in meters. The incremental cost for additional memory carries a cost significantly higher than that assumed in 3.33. Functional requirements for additional data storage should be subject to cost benefit analysis. DS.2 proposes 12 months (perhaps this may actually need to be 13 months to allow complete back analysis) storage of half hourly data to support customer switching for time of use tariffs on gas and electricity. This may be justified but will increase the cost. The location of this data storage should be defined, e.g. it could be in the meter (response could be slow for battery devices), on the WAN Hub or IHD. In reality, customers using this feature are more likely to be comfortable accessing this data from secure storage via the web and this will be the most flexible and economic storage location. Meters could then store 3 to 4 months metrological data in line with SRSM and to support normal billing periods plus query time.*
- *GS.4: 5 second consumption data capture for potential data analysis. This requirement will reduce battery life and could conflict with MID. It should be subject to cost benefit assessment and SBGI recommend that this is removed from the minimum specification.*
- *GS.8: We believe there should be further work in defining the meter life and minimum battery life. MID work is likely to set the minimum battery life to 10 years for gas meters. This would mean a meter life of 20 years could still be achieved with 1 battery change and it may be more economic in battery costs.*
- *We believe that both gas and electricity meter should be able to communicate directly with the WAN to ensure security and this should be in the catalogue. However, we feel that this does not need to be mandated as minimum specification.*
- *Last gasp (interrupt) and first breath (restoration) technology should be used if this can be justified as a cost to benefit*

Question 7*: Do you see any issues with the proposed approach to developing technical specifications for the smart metering system?

Answer:

We support the proposed approach of Option 2, i.e. industry drafted and programme facilitated technical specification. We believe that the technical specification must be developed quickly and efficiently in order to properly facilitated early roll out of the first meters. Delay in this part of the programme will delay the whole programme.

Early RFIs for WAN communications and DCC are essential to ensure that the options can be narrowed down early on and less time wasted analysing unnecessary options.

Question 16*: Do you have any comments on the proposals for requiring suppliers to deliver the rollout of smart meters (including the use of targets and potential future obligations on local coordination)?

Answer:

SBGI supports the proposals for suppliers to organise the rollout but recognise that the "hard to do" sites need to be planned and will require industry agreed solutions. Any applied targets and obligations need to be real and effective. It is essential that responsibility for hard to do sites still remains with the suppliers.

There needs to be coordination between gas and electricity together with the communications infrastructure rollout (both pre and post DCC) with an obligation for up front info on sites and a high level of first time installs.

Chapter 4:

Question 17*: Do you have any comments on our implementation strategy? In particular, do you have any comments on the staged approach, with rollout starting before DCC services are available?

Answer:

SBGI is in agreement with this approach as we believe this is the only way to achieve the deadlines. Providing the following conditions are met the transition through the stages should present no negative impressions to the customers:

- *Early installs must be suitable and enabled to join the DCC when available.*
- *DCC must support communications and protocols of the early installs.*
  (These two conditions must be possible without disruption to the customer).
- *There must be an early issue of an RFI for the DCC to ensure that only the most appropriate options are considered.*
- *The procurement and end to end testing phase is far too tight and therefore there are 3 possible options:*
  - *Bring forward the procurement of DCC and its testing.*
  - *Potential DCC candidates should be involved as soon as possible*
  - *Expect programme to be late.*

Question 18*: Do you have any other suggestions on how the rollout could be brought forward? If so, do you have any evidence on how such measures would impact on the time, cost and risk associated with the programme?

Answer:

SBGI would suggest the following goals for early rollout and completion:

- *Early agreement of the technical specification.*
- *Ensuring that the meter approval process is ready and able to respond to the number of new meters requiring approval at this critical stage of the programme. This will require*

Question 19*: The proposed timeline set out for agreement of the technical specifications is very
dependent on industry expertise. Do you think that the technical specifications can be agreed
more quickly than the plan currently assumes and, if so, how?

Answer:

*The biggest issue for meter design is agreeing the Protocols and interoperability of the HAN.
Therefore, an early decision on the HAN will facilitate a speedier resolution of the overall meter
specification. Note: most interim solutions appear to be based on Zigbee 1.1. This may be a
speedy and efficient way forward although we do recognise that there will inevitably be
additional functionality required.*

*For the WAN communications we recommend an early RFI so that only the most appropriate
options are then considered and for the technical specification an early agreement on the WAN
protocols.*

The technical specification could then be based on elements of existing specifications.

Question 20*: Do you have any comments on our proposed governance and management
principles or on how they can best be delivered in the context of this programme?

Answer:

*A firm and robust approach will be necessary if the programme is to be delivered on time and
within budget.*

Statement of Design Requirements:

Chapter 3:

Question 1: Should the HAN hardware be exchangeable without the need to exchange the meter?

Answer:

*SBGI believes that the HAN module should be exchangeable without the need to exchange either
the gas or electricity meter as this process must not require disruption to the customers supply.
However, although we feel that this is a sensible and obvious approach we are not inclined to*

suggest that it is part of the minimum specification because we believe that HAN communication technology may stabilise in future.

Our concerns are:

- *Interoperability – e.g. change of supplier or change of WAN must not provide issues for the customer. This needs to be defined correctly as early as possible to avoid issues later.*
- *That clear customer support is available and there is clear ownership and management responsibility of the connectivity in all circumstances: meter change, supplier change, WAN or HAN Change.*
- *We do feel that the responsibility should end at the IHD and not include connectivity throughout the property*
- *We also note, however, that such modularity may increase the initial cost, which needs to be weighed against the risk of communications changing.*

Question 2: Are suitable HAN technologies available that meet the functional requirements?

Answer:

There are suitable HAN technologies available that meet most of the required functionality but there are situation s (e.g.: multi-occupancy buildings and cellars) where this may not be so. There may be further development required to resolve these particular situations; Zigbee is being planned with current deployments and with ongoing enhancements to the application protocol e.g. for battery powered "sleepy" gas meters and prepayment could then deliver the technical interoperability requirement for the GB market.

Question 3: How can the costs of switching between different mobile networks be minimised particularly in relation to the use of SIM cards and avoiding the need change out SIMs?

Answer:

SBGI does not believe that mobile technology should be presumed. However, if it is then the SIMS should transferable between networks. Note: This is really an issue for Ofcom to comment on.

Question 4: Do you believe that the Catalogue is complete and at the required level of detail to develop the technical specification?

Answer:

SBGI believe that the catalogue is at the required level of detail but feel that there are some inconsistencies and areas for clarification:

- *HA11 and IH2: There are inconsistencies between the various references to interval periods. In other European markets there is a trend towards hourly or half hourly updates from battery powered meters whereas the Functional requirement states 15*

- *3.33 And DS.2: Memory costs and 12 months data storage. We believe the memory costs are underestimated for high reliability, long life metering components. The technology for non-volatile data storage in meters is typically EEPROM devices whereas the assumption in 3.33 is based on SD card technology requiring supporting processing not normally contained in meters. The incremental cost for additional memory carries a cost significantly higher than that assumed in 3.33. Functional requirements for additional data storage should be subject to cost benefit analysis. DS.2 proposes 12 months storage of half hourly data to support customer switching for time of use tariffs on gas and electricity. This may be justified but will increase the cost. The location of this data storage should be defined e.g.: it could be in the meter (response could be slow for battery devices), on the WAN Hub or IHD. In reality, customers using this feature are more likely to be comfortable accessing this data from secure storage via the web and this will be the most flexible and economic storage location. Meters could then store 3 to 4 months metrological data in line with SRSM and to support normal billing periods plus query time.*

- *GS.4: 5 second consumption data capture for potential data analysis. This requirement will reduce battery life and could conflict with MID. It should be subject to cost benefit assessment and SBGI recommend that this is removed from the minimum specification.*

- *GS.8: We believe there should be further work in defining the meter life and minimum battery life. MID work is likely to set the minimum battery life to 10 years for gas meters. This would mean a meter life of 20 years could still be achieved with 1 battery change and it may be more economic in battery costs.*

- *We believe that both gas and electricity meter should be able to communicate directly with the WAN to ensure security and this should be in the catalogue. However, we feel that this does not need to be mandated as minimum specification.*

- *Last gasp (interrupt) and first breath (restoration) technology should be used if this can be justified as a cost to benefit.*

- *Assessment of cost/benefits should involve services providers.*

Question 5: Do you agree that the additional functionalities beyond the high-level list of functional requirements are justified on a cost benefit basis?

Answer:

We support the additional functionalities with the exception of the following:

- *Last gasp on WAN – The ability to provide a "last gasp" report on a power failure for the WAN is included as it has been assumed this is a no cost item. Dependent on the communications technology deployed this may not be the case and will have an associated cost.*

- *12 months interval data storage - not in the list of additional functionalities but included in the catalogue. For further information see answer to question 4 above.*

Question 6: Is there additional or new evidence that should cause those functional requirements that have been included or omitted to be further considered?

Answer:

We agree with the functionality omissions in section 3.38. See Q4 and Q5 above for evidence on last gasp and memory costs as we do not agree with the observation in 3.33 regarding non-volatile memory for long life high reliability embedded meter electronics. This assumption appears to be used to justify including increasing functionality and data storage.

Chapter 5:

Question 7: Do you agree that the proposed approach to developing technical specifications will deliver the necessary technical certainty and interoperability?

Answer:

We support the proposed approach of Option 2, i.e. industry drafted and programme facilitated technical specification. We believe that the technical specification must be developed quickly and efficiently in order to properly facilitated early roll out of the first meters. Delay in this part of the programme will delay the whole programme.

An early RFI for WAN communications DCC is essential to ensure that the options can be narrowed down early on and less time wasted analysing unnecessary options.

Assessment of cost/benefits should involve services providers.

Question 8: Do you agree it is necessary for the programme to facilitate and provide leadership through the specification development process? Is there a need for an obligation on suppliers to co-operate with this process?

Answer:

Yes we do agree that it is necessary for the programme to facilitate and provide leadership.
We do not believe that it will be necessary to oblige the suppliers to cooperate with this process as many of them will wish to be involved without the need to instruct them to do so.

We also believe that it is essential that all suppliers are given equal opportunity to co-operate with the process.

Question 9: Are there any particular technical issues (e.g. associated with the HAN) that could add delay to the timescales?

Answer:

The biggest issue is probably agreeing the Protocols and interoperability of the HAN. Therefore, an early decision on the HAN will facilitate a speedier resolution of the overall meter specification. Note: most interim solutions appear to be based on Zigbee 1.1. This may be a speedy and efficient way forward although we do recognise that there will inevitably be additional functionality required.

There are suitable HAN technologies available that meet most of the required functionality but there are situation s (e.g.: multi-occupancy buildings and cellars) where this may not be so. There may be further development required to resolve these particular situations.

An early WAN communications and DCC RFI is essential to ensure that the options can be narrowed down early on and less time wasted analysing unnecessary options.

The issues of security and privacy need to be addressed early on as do the extra issues of pre-payment.

Question 10: Are there steps that could be taken which would enable the functional requirements and technical specifications to be agreed more quickly than the plan currently assumes?

Answer:

- *Early agreement of the technical specification. This should be reviewed and assessed using key parts of available existing industry smart meter technical specifications where these are aligned with the catalogue – this could save time on specification drafting.*
- *Ensuring that the meter approval process is ready and able to respond to the number of new meters requiring approval at this critical stage of the programme. This will require further bodies able to carry out approvals as many new smart meters will require processing through a fully approvals process.*
- *An early WAN communications DCC RFI is essential to ensure that the options can be narrowed down early on and less time wasted analysing unnecessary options.*
- *The issues of security and privacy need to be address early on as does the extra issues of pre-payment.*

Implementation Strategy:

Chapter 2:

Question 1: Do you have any comments on our proposed governance and management principles or on how they can best be delivered in the context of this programme?

Answer:

A firm and robust approach will be necessary if the programme is to be delivered on time and within budget.
The DCC should move as quickly as is possible from regulatory to operational governance.

Chapter 3:

Question 2: Are there other cross-cutting activities that the programme should undertake and, if so, why?

Answer:

Yes, the programme should also consider:

- *Any forthcoming legislative or standards changes*
- *Feed-in Tariffs*
- *Micro-Generation*
- *Renewables*
- *Other cross system analysis e.g. does the sum of smart meters equal measurement at substation etc*
- *Other national communications procurement programmes could be coordinated within this approach*
- *Electric vehicles*
- *Pre-payment impact on DCC*

However, we believe that these items could better be considered after the first wave and thus not delay the production of the technical specification.

Chapter 5:

Question 3: Do you agree with our proposal for a staged approach to implementation, with the mandated rollout of smart meters starting before the mandated use of DCC for the domestic sector?

Answer:

Yes SBGI fully supports this approach. However, our data and communications management members believe that the operational form of DCC must be brought forward to lessen the potential for interoperability and that adoption issues are considered.

Question 4: Do you have any comments on the risks we have identified for staged implementation and our proposals on how these could best be managed?

Answer:

The greatest risk that SBGI have identified is the potential shortage of resources to install the vast quantity of meters. Several reports have highlighted a serious shortfall by 2012. The skill sets and training recruitment and deployment still need to be clearly defined. Also, there must be cross boundary (both DNO and GT) recognition of qualifications to ensure efficient migration of personnel. The availability of all component parts of the Smart Meter Systems will also be a risk if installation rates are to be maintained.

Question 5: Do you have any other suggestions as to how the rollout could be brought forward, including the work to define technical specifications, which relies on industry input?

Answer:

The biggest issue for meter design is agreeing the Protocols and interoperability of the HAN. Therefore, an early decision on the HAN will facilitate a speedier resolution of the overall meter specification. Note: most interim solutions appear to be based on Zigbee 1.1. This may be a speedy and efficient way forward although we do recognise that there will inevitably be additional functionality required.

For the WAN communications we recommend an early RFI so that only the most appropriate options are then considered and for the technical specification an early agreement on the WAN protocols.

The technical specification could then be based on elements of existing specifications.

Question 6: Do you agree with our planning assumption that a period of six months will be needed between the date when supply licence obligations mandating rollout are implemented and the date when they take effect?

Answer:

This seems to be a reasonable time period providing all milestones leading up to this are met on time. However, this is really an issue for suppliers to answer or comment.

Question 7: Do you have any comments on the activities, assumptions, timings and dependencies presented in the high-level implementation plan?

Answer:

We have no comment on this question.

Question 8: Do you have any comments on the outputs identified for each of the phases of the programme?

Answer:

We support the aims but achieving this will require strong leadership.

Rollout Strategy:

Chapter 2:

Question 1: Do you believe that the proposed approach provides the right balance between supplier certainty and flexibility to ensure the successful rollout of smart meters? If not, how should this balance be addressed?

Answer:

SBGI believes that the current approach is correct providing that the programme is properly monitored and reviewed. Ofgem should also ensure that there is no functional creep.

Question 2: Would the same approach be appropriate for the non-domestic sector as for the domestic sector?

Answer:

The Small Non domestic sector requires far more planning and liaison with the customer as shut down of either gas or electricity supplies at a business premises needs prior agreement and proper timing and coordination to prevent unnecessary disruption to the business.

Question 3: Is there a case for special arrangements for smaller suppliers?

Answer:

We believe that all communications options may not be readily available in some regions at the required time.

Chapter 3:

Question 4: What is the best way to promote consumer engagement in smart metering? As part of broader efforts, do you believe that a national awareness campaign should be established for smart metering? If so, what do you believe should be its scope and what would be the best way to deliver it?

Answer:

SBGI supports a national awareness campaign as the best way to achieve full customer understanding and engagement. However, the information must be correct and consistent across all regions and demographic groups. If suppliers are tasked with this the material should be subject to the same code of practice as selling during the installation visit.

Question 5: How should a code of practice on providing customer information and support be developed and what mechanisms should be in place for updating it over time?

Answer:

SBGI believes that although the development of a code of practice should be supplier led, it is also essential that there is input from industry stakeholders including the data and security sectors. These stakeholders should include (but not be limited to):
- *Consumer groups*
- *Local authorities*
- *Age UK*
- *Trade Bodies*
- *Energy Management Services and Associated Products Suppliers*

Chapter 4:

Question 6: Do you agree with the proposed obligation on suppliers to take all reasonable steps to install smart meters for their customers? How should a completed installation be defined?

Answer:

SBGI agrees that there should be an obligation on the suppliers to take all reasonable steps to install smart meters for all their customers using all available technology

A complete installation should be defined as:

- *Meter installed and operational and registered at DCC (current timescales of two hours for registration is not practical for efficient and speedy completion)*
    - *HAN installed and tested end to end*
    - *WAN installed and tested end to end*
    - *Proper training and instruction given to customer*
    - *All manuals and contact information handed to customer*
    - *Meter data available to customer.*
    - *All industry processes for meter exchange completed.*
  All of the above <u>must</u> be completed whilst engineer is on site.
- *Where the installation is incremental to an earlier installation then there is a responsibility on the second contractor to ensure functionality and interoperability.*

Question 7: Do you think that there is a need for interim targets and, if so, at what frequency should they be set?

Answer:

Yes there should be interim reports which should be at quarterly intervals throughout programme. This process should be monitored to ensure that targets are realistic and achieved.

Question 8: Do you have any views on the form these targets should take and whether they should apply to all suppliers?

Answer:

They should apply to all suppliers and should be appropriate for each supplier's individual businesses. However, targets should demonstrate reasonable endeavours to achieve the programme completion date.

Question 9: What rate of installation of smart meters is achievable and what implications would this have?

Answer:

SBGI are not able to give an accurate estimate of the rate that will be achieved as there are too many unknowns. However, we have provided some facts and figures that may assist in the ongoing evaluation of this issue:

- *Maximum number of installs per fitter = 5 per day (if all facts are OK e.g.: meters available, access available etc).*

- *To achieve rollout targets over 8,000 meters per day need to be installed.*

- *This is at least three times the numbers that have historically been achieved.*

    - *Lack of resources will slow the programme down and delay completion date. The critical factors will be:*
        - *Meters and their components*
        - *Training of meter fitters*
        - *Access to premises*
        - *Availability of appropriate communications mediums and technologies.*

Chapter 5:

Question 10: Do you have any evidence to show that there are benefits or challenges in prioritising particular consumer groups or meter types?

Answer:

Communications drop out in the early stages of rollout need to be managed. In particular, for prepayment, there can be a considerable impact on the customer if supply is loss due to poor communications.

Chapter 6:

Question 11: Do you agree with our proposed approach to requiring suppliers to report on progress with the smart meter rollout? What information should suppliers be obliged to report and how frequently?

Answer:

SBGI agrees with this approach

The information reported should include (but not be limited to):

- *Number of abortive visits*

- *Number of first time installs*

- *Number of revisits*

Chapter 7:

Question 12: Do you agree that there is already adequate protection in place dealing with onsite security or are there specific aspects that are not adequately addressed?

Answer:

We believe that current standards are adequate but care must be taken to ensure that these standards do not become less stringent in order to facilitate to need for large increases in work force to install meters.

Question 13: Do you agree with our proposal to require suppliers to develop a code of practice around the installation process? Are there any other aspects that should be included in this code of practice?

Answer:

Yes, we believe that the instruction and training in the use and operation of the IHD must be included as part of this code of practice.

SBGI will also be submitting answers to the further questions and SBGI and all its members are committed to supporting this consultation and all phases of the smart metering programme. SBGI will provide representation at all expert groups, technical subgroups and workshops to which we receive invitations.

For and on behalf of SBGI- Utility Networks