Promoting choice and value for all consumers

Email: smartmetering@ofgem.gov.uk

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Dear Stakeholders,

Smart Metering Implementation Programme – Functional Specification Workshop 1 March 2010

We have attached a summary of information that we plan to use as the basis for discussions at our Smart Meter Functional Specification Workshop.

The following information is included:-

- information about workshop structure; and
- suggested discussion material for workshop breakout sessions including a spectrum of options for smart meter functional specification and a draft smart metering services list which is based on government decisions in respect of functionality required.

Invitations were issued for this event which is now fully subscribed. We ask that workshop participants consider this material before the workshop.

We would also welcome views from other stakeholders who are invited to submit written comments to us at smartmetering@ofgem.gov.uk ahead of the workshop.

Yours sincerely

BRIDGET MORGAN
Head of Smart Metering Delivery

- **Workshop Structure**

  The draft Smart Metering Services List and the spectrum of options for the definition of design requirements (included as part of this letter) are key background materials for the workshop. The draft Smart Metering Services List sets out a wide range of services that could fall within the broad categories of the functionality requirements defined by Government. However, we recognise that the Government decision was presented in the context of minimum functional requirements. Our initial view is that not all of the services within the draft Smart Metering Services List can be considered to be minimum functional requirements.

  During the day, time will be allowed for full workshop plenary sessions but also smaller breakout group sessions. There will be four breakout sessions, two covering Smart Metering Services and the other two covering Technology Solution Options.

  One Smart Metering Services breakout session will focus on requirements for gas and the other will focus on requirements for electricity. One Technology Solutions Options breakout session will focus on equipment within premises and the other group will deal with technology options for the Wide Area Network.

  Each workshop participant will be allocated in advance to a specific group. Our aim is to ensure that a range of interests are represented in each breakout group.

  We plan to use the same format for both Smart Metering Services breakout groups. The morning breakout session will be used to assess the range of services that can be delivered from a smart metering system that meets the scope of the minimum functionality requirements set out in the Government decision. During this session, each breakout group will evaluate which services within each broad category can be classed as minimum design requirements within the context set out by Government.

  The afternoon breakout sessions will be in two sections. The first section will review the range of smart metering system services in light of the output from the technology solution options morning breakout sessions. In particular the breakout group should review the categorisation of smart metering system services between "must have" and "desirable" in light of information about possible solution options and the potential benefits that the service may deliver.

  The second section will focus on the spectrum of options for defining the design requirements for the priority "must have" services in terms of the elements needed to deliver the service, the responsibilities for service provision, commercial and payment arrangements for service provision and the governance arrangements needed to allow for future development of the range of services available from the smart metering system.

- **Smart Metering Services – Morning Session**

  Review of the draft Smart Metering Services List

  - Does this list cover all of the functionality requirements within the government decision? (Gas – Group A, Electricity – Group B)
  - Which services are "must haves" and should form part of a minimum functionality specification for the smart metering system?
  - Which services are "desirable" and should be offered as optional choices?
  - For each service, who will need to use it and for what purposes?
  - Who should be permitted to:
    a. Have access to customer data?

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b. Send signals to a customer's meter?
- What security measures are needed to protect customers and to ensure customers feel protected?
- What information (such as energy consumption, payment credits) should be provided directly to customers via the in-home display?
- What services are necessary to meet the needs of other government initiatives?

- **Smart Metering Services – Afternoon Session**

Review the output from the morning session from the Technology Solution Options breakout groups

- Are the technology solution/cost implications of the overall range of "must have" services justified by the potential benefits identified?
- Do any of the "must have" services fall into a "must have in the future but not now" category?
- Are the cost implications of any of the "desirable" services considered to be sufficiently marginal to justify the service being included within a minimum design requirement?

Review of spectrum of options

- Are there other options for specifying design requirements that should be considered for the smart metering system that fall outside of the spectrum of options?
- For each activity listed within the spectrum of options, what is the group's preferred option within the spectrum for the nature and scope of the design requirement specification?

The two Technology Solution Options breakout groups will look to order, during the morning, the services in terms of benefits delivered / realised and technology options required. One breakout group will focus on technology solutions within the customer premises up to the gateway to the Wide Area Network. The other breakout group will focus on technology solutions from the gateway to the wide area network (i.e. in the customer's premises) to the data transfer service user.

The afternoon breakout sessions will be in two sections. The first section will review the list of "must have" services from the morning breakout sessions to establish any risks that the services cannot be delivered through the use of current technology solution options.

The second section will focus on the spectrum of options for defining the design requirements for each technology solution element, the responsibilities at the interfaces between elements of the smart metering system (including commercial and technical interoperability), associated commercial arrangements and governance arrangements needed to allow for future development.

- **Technology Solution Options – Morning Session**

Review of the draft Smart Metering Services List

- What are the options for technology solutions for the smart metering system that can deliver each of the range of these services?
- What are the known pros and cons (technology, commercial, economic, others) for these technology solution options?
- What are the likely costs of each technology solution option (indicative/comparative view)?

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- How much flexibility is there for interface between different technology solution options?
- What combinations of technology solution options are workable? Which combinations of technology solutions are in compatible?

- **Technology Solution Options - Afternoon Session**

Review the output from the morning session from the smart metering system service breakout groups

- Are there "must have" services that cannot be delivered using currently available technology solutions from a quality or cost perspective?
- What are the technology solutions that can deliver the "must have" services?
  - Can these technology solutions also deliver the "desirable" services?
- Would a modular approach better enable the range of services from the smart metering system to evolve over time?
- How can security measures best be provided within the smart metering system to ensure an appropriate level of customer protection?

Review of spectrum of options

- Are there other options for specifying design requirements that should be considered for the smart metering system that fall outside of the spectrum of options?
- For each activity listed within the spectrum of options, what is the group's preferred option within the spectrum for the nature and scope of the design requirement specification?

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Discussion material

The following information should facilitate discussion and stimulate the forming of viewpoints from all stakeholder perspectives:

a. A spectrum of potential options

Activity	Market	Facilitated	Mandated
Coordination of design of smart metering system	Driven by market desire for services	Duty for datacomms and suppliers to cooperate	Requirement for design developments of elements of the smart metering system to improve overall design coordination
Design of linkages within customer premises	No minimum specification defined for design of interfaces between equipment within consumer premises	Minimum functional specification defined in terms of commercial interoperability between key interface points (e.g. HAN, WAN, meters, IHD)	Require suppliers to meet a single HAN solution standard
IHD Design	Supplier choice in respect of the design of the IHD device	Standard minimum functionality defined for information provided on an IHD with suppliers able to provide additional functionality	All IHDs should meet (but not exceed) a minimum functional specification for information provided on an IHD
Responsibility of maintaining IHD service	No standard requirement for maintenance or replacement devices defined beyond initial smart meter rollout installation	Supplier responsibility within a standard guarantee period	Enduring requirement for supplier to maintain customer IHD facility when requested by the customer
Specification of HAN technology	Rely on market participants to find a solution that works within each customer premises	Require use of HAN technologies with open standards	Require suppliers to align to a single HAN solution standard
Meter functionality	Suppliers able to choose how smart meter functionality is delivered (within existing metering accuracy requirements)	Industry develops code(s) of practice defining minimum requirements for meter functionality and interfaces	Mandatory meter design requirement are defined
Provision of WAN Gateway	Supplier choice only limited by ability of Datacomms entity to use the gateway	Datacomms entity sets out the range of WAN gateways that it can interface with in a public document	Single type of WAN gateway mandated
Selection of WAN technology	Datacomms choice to meet specific user requirements	Datacomms defines standard range of technology options that it may use	Single technology option selected that Datacomms may use

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a. Draft Smart Metering Services List - This draft list is a range of services that may fall within the high level functional requirements defined by Government. The last column provides a link to the (A-H electricity and A-E Gas) list within the Government decision. The Government proposals for high level functionality are also included for reference.

ELECTRICITY SPECIFIC SERVICES	Description	DECC A-H
Service 12.0	Electricity Meter Read (Consumption import & export)	A, B, G
Service 13.0	Remote Energisation / De-Energisation of Electricity Supply	F
Service 14.0	Switch Between Credit and Prepayment Electricity Payment	F
Service 15.0	Prepayment top-up for Electricity	A,F
Service 16.0	Electricity Credit Balance Update	A
Service 17.0	Electricity Tariff Update	A,D
Service 18.0	Electricity Supply Fault Alarm Triggered	
Service 19.0	Consumer Meter Interaction	B, C, F
Service 20.0	Maximum Demand Read	A, B, D, E
Service 21.0	Notification of Failure to Obtain Reading	B

GAS SPECIFIC SERVICES	Description	DECC A-E
Service 22.0	Gas Meter Read	A,B
Service 23.0	Gas Calorific Value Delivered to Meter	
Service 24.0	Remote Isolation / De-Isolation of Gas Supply	F
Service 25.0	Switch Between Credit and Prepayment Gas Payment	F
Service 26.0	Prepayment Top-up for Gas	A, B, C, F
Service 27.0	Gas Credit Balance Update	A, B, C, F
Service 28.0	Gas Tariff Update	A, B, C, D
Service 29.0	Gas Supply Fault Alarm Triggered	
Service 30.0	Consumer Gas Meter Interaction	A, B, F
Service 31.0	Notification of Failure to Obtain Reading	A
Service 32.0	Maximum Demand Read	A, B, D

NB: F applies if gas valve is mandated

GENERAL AND OPERATIONAL SERVICES	Description	DECC A-H
Service 3.0	Registration of Smart Meter	B
Service 4.0	Check Accuracy of Master Clock Data	B
Service 5.0	Tamper Alarm Triggered	
Service 6.0	Meter Fault Alarm Triggered	
Service 7.0	Diagnostics	B
Service 8.0	Firmware / Software Upgrade	B
Service 9.0	Test Meter Communication Line	B
Service 10.0	End of Calibration Life / Service Life Notification	
Service 11.0	Message to Consumers (IHD)	B, C

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SMART GRID SERVICES	Description	DECC A-H
Service 1.0	Electricity Quality Read	A
Service 2.0	Messages to Appliances for Load Management	B, D, E

MICROGENERATION SPECIFIC SERVICES	Description	DECC A-H
Service 33.0	Read Microgeneration Data	A, B, E, H
Service 34.0	Feed in Tariff Update	A, D, H

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	High level functionality	Electricity	Gas
A	Remote provision of accurate reads/information for defined time periods - delivery of information to customers, suppliers and other designated market organisation	✓	✓
B	Two way communications to the meter system - communications between the meter and energy supplier or other designated market organisation - upload and download data through a link to the wider area network, transfer data at defined periods, remote configuration and diagnostics, software and firmware changes	✓	✓
C	Home area network based on open standards and protocols - provide "real time" information to an in-home display - enable other devices to link to the meter system	✓	✓
D	Support for a range of time of use tariffs - multiple registers within the meter for billing purposes	✓	✓
E	Load management capability to deliver demand side management - ability to remotely control electricity load for more sophisticated control of devices in the home	✓	
F	Remote disablement and enablement of supply - that will support remote switching between credit and pre-pay	✓	✓
G	Exported electricity measurement - Measure net export	✓	
H	Capacity to communicate with a measurement device within a microgenerator - receive, store, communicate total generation for billing	✓	

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