

Title: **Response to Ofgem's Smart Meter Implementation Programme – Prospectus (Oct Questions)**

Synopsis: To document the AMO members' response to the Ofgem's Smart Meter Implementation Programme - Prospectus.

Date: 1st Nov 2010

Prepared by:

[REDACTED]

Contact:

www.MeterOperators.org.uk

AMO@PowerDataAssociates.com

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1. Introduction

1.1. Purpose

This document is the response to the information request from Ofgem dated 27th July 2010, seeking views on the “Smart Meter Implementation Programme - Prospectus”¹.

This response is not confidential.

1.2. Background

The Association of Meter Operators (AMO) is a trade association representing the interests of its members. There are twenty-one members on the AMO who include all of the active electricity Meter Operators and the largest gas Meter Asset Managers. Many of these companies also own significant quantities of metering assets, either directly or through associated companies.

1.3. Member Involvement

Many of the AMO members are undoubtedly providing their own response directly to Ofgem. This AMO response does not necessarily represent the agreed views of every member on each issue. This response has been prepared by the AMO Consultant on behalf of the AMO members based on views expressed through individual discussion, meetings and written comments provided by members. A draft response has been circulated to members and their comments incorporated into the final submission.

For the avoidance of any doubt the AMO view is that the proposed competitive roll-out of smart meters is the appropriate model and nothing in this document is seeking to alter the proposals reinforced in the recently issued Prospectus.

The AMO is grateful for being invited to participate in the DCG & SMDG and many of their sub-groups. Further detail on the points raised in this response will be provided in these meetings. The AMO has also submitted a response to the Ofgem Open letter with respect to the roll-out, which has further detail on these issues.

The AMO membership is grateful for the ongoing dialog with Ofgem (and DECC), including attendance at our meetings to discuss the smart meter programme. The AMO membership would welcome the opportunity to provide any further clarification or discussion of any of the issues raised by this response.

1.4. Key Issue

1.4.1. Clarity of Technical Requirements

It is important that the functional and technical requirements of the components of the smart metering system are stabilised quickly. This will enable the benefits to ‘UK plc’ of smart metering to be realised as soon as possible; the equipment needs to be designed/manufactured/tested/procured, commercial arrangements between stakeholders agreed and meter operatives trained to install the equipment. Over time and practical experience the requirements will undoubtedly evolve further.

1.4.2. Party to Smart Metering Code

DCC functionality should record where there is a direct contractual relationship between the Customer and their Meter Operator for the provision of metering. The relevant suppliers(s) will then be able to direct faults and repairs directly to the Meter Operator, and not ‘double charge’ customers for the provision of metering services.

¹ www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=40&refer=e-serve/sm/Documentation

2. Chapter 2

2.1. Q1 Do you have any comments on the proposed minimum functional requirements and arrangements for provision of the in-home display device?

Assuming suppliers will try to influence consumption through time of day tariffs, it will be essential to ensure the customer is aware of the current active charge rate, the pence per unit rate being applied, and the times/days when the different rates apply.

The In Home Display (IHD) should repeat the meter displays to confirm that the IHD is working and allows the customer to read difficult to read/access meters (in locations such as communal metering points, under stairs, over doors, etc.) and also allows customers to easily validate the supplier's bills. It should include non-billing registers, such as debt settings on prepayment meters. The display for gas meters will require resolving, whether the IHD displays m³, or kWh, in which case the IHD or meter will need a regular update of calorific values. The gas meter 'wake up and message' cycle, proposed at 30mins, will have a consequential effect on the refresh rate on the IHD.

Should the IHD be capable of displaying more (such as the ½ hour consumption profiles), or of being upgraded by the supplier? If this is the case will need to specify whether the IHD asks for readings from meter, or whether meter broadcasts and IHD listens out for the information. If the meter broadcasts, then the meter may need upgrading to broadcast more data.

Prepayment/Re-enablement – the IHD should be capable of initiating switch/valve closure, following credit update or activating emergency credit. For safety reasons any trigger for enabling the supply (gas & electric) must be from *within the premises*, either via the IHD or at the relevant meter. Enabling the supply remotely from the premises could result in gas appliances passing gas into an empty property leading to fire/explosion, or turning on electrical appliances (iron, electric fire, cooker, etc.) which could lead to fire, or simply unexpected energy consumption. Where the IHD is used as the means to re-enable the supply it is essential that the IHD is paired by the correct meter, otherwise there is the danger that one customer could inadvertently re-enable a supply of a neighbouring premises.

If the IHD is part of a payment system (access to debt displays, activating switch/valve closure, activating emergency credit, locally inputting credit purchases), then the supplier must be obliged to provide and maintain an IHD whilst in prepayment or 'pay-as-you-go' mode. This requirement should also apply on change of tenancy where the new tenant does not have an IHD available. There is some debate as to whether a single 'basic' IHD would provide all the functionality required as an energy display, and as a pre-payment IHD. It will need to be considered if the use of a single 'higher spec' IHD will provide the interoperability required by suppliers to be able to transfer customers to a 'pay as you go' arrangement without the need to provide a further IHD to replace the 'basic' version.

If the IHD is to form part of a communications relay between the customer's meters and their IHD then it will need to be provided and maintained throughout the life of the premises. However, on balance, it is felt that the IHD should not be part of the communication infrastructure as the customer will have the right not to deploy it which could interrupt the communications between a WAN and a meter.

As the Prospectus states, the IHD is an essential part of the customer understanding about their own energy consumption and for the reasons above it would seem appropriate that the supplier should provide and maintain an enduring 'basic' IHD. Clearly customers may want to procure their own to a higher specification and this should be enabled, which subject to HAN standard compliance, their meter system should be capable of accepting in the form of newly paired equipment. Equally is if a customer abuses their IHD and requests a replacement IHD "too often" then they should be directly charged for the damage through their energy bill.

In certain metering positions it may be appropriate to 'hard wire' an IHD, or remote meter display, from the meter to an accessible location. A common example may be where the gas or electricity meter is positioned at high level over the front door. If an IHD was wired from this position to an accessible position then the need to climb on chairs, etc. would be minimised. Hard wiring has the advantage that the IHD is explicitly 'paired' with the correct meter, it will always be powered and is less likely to be removed on change of tenancy. If the IHD is battery powered then there is a possibility that the battery will

be exhausted/missing when seeking to use it to restore supply. If the IHD is mains powered then it will not operate when the electricity supply has been interrupted. Provision of a functional IHD also avoids the legal obligation on the supplier to pay for a meter move under the electricity and/or gas act to meet the needs of disabled customers.

If suppliers intend to send messages to IHDs to inform customers of price changes or impending site visits then the IHD must be capable of supporting messages, and acknowledging receipt. If the customer does not acknowledge such a receipt (customer never look at it, or battery exhausted) within a certain timeframe then other routes to communicate with the customer will have to be used, e.g. email, SMS, phone, letter.

The IHD and smart metering system must have the capability of displaying Feed In Tariff (FIT) metering consumption information, sourced from the FIT meter. The current FIT metering requirements do not currently mandate a 'smart ready meter', but to enable the reading to be collected it is essential that the FIT meter is incorporated into the smart metering system.

2.2. Q2 Do you have any comments on our overall approach to data privacy?

Who owns what data? A clear statement that the customer owns it (but is obliged to provide minimum data to the supplier and distributor for the purposes of trading and network operations) may then help to frame the controls required – taking data without authority can be theft. Putting the customer in control of his data would improve the public perception of Smart Meters and intrusion.

There appears to be three fundamentals:

- 1 How to manage legitimate players accessing the data (and this could be agents for customer contracted added value data services), and only to the limit agreed (e.g. if the customer does not want load profile data collected by his supplier, if it is not wanted for billing purposes)
- 2 How to prevent individuals within legitimate organisations misusing data
- 3 How to prevent others "hacking" into the data.

There will be a conflict between having the communications to open standards, and yet secure.

The difference in legislative protection between 'domestic' customers and non-domestic customers will need to be explored and resolved.

2.3. Q4 Have we identified the full range of consumer protection issues related to remote disconnection and switching to prepayment?

Currently, personal debt values/setting can only be revealed on a prepayment key meter when the key is inserted, i.e. when the customer is present, or has knowingly left his key in the meter. As there will no longer be a key, this will need to be generally suppressed, yet somehow displayed when the customer wants to see it. (see Q1)

Concerns on privacy associated with a customers' credit/debit position have been highlighted in various forums. For example, a baby sitter may be able to see the householders credit/debit position from the IHD. Or a communal meter arrangement may reveal credit/debit position to all their neighbours.

It will be technically possible to switch from credit to prepayment mode, without accessing the meter. It would therefore be possible to do this without explicit permission of the customer. Currently access to the premises is usually required or a warrant served, thus there is some enforced 'understanding'.

Prior to switching to a prepayment mode an IHD could be proven, via the WAN/HAN, to be working in the customers' premises. Otherwise one should be provided and installed prior to conversion of payment mode.

Whilst in prepayment mode, the supplier should be required to maintain a working prepayment IHD, if the customer asks for one (or the supplier knows the meter is difficult to access). As with the existing prepayment infrastructure, there should be nothing to stop the supplier charging for frequent replacement of IHDs through the energy account.

Currently, where a meter is exchanged, the customer can ask the operative where/how to vend (leaflets/booklets may be left). This information needs to be made available, especially if the vending options and outlets may be different from the current infrastructure.

Tamper alarms are to be welcomed, although any feature like this can lead to 'false' alarms the risk/benefit of these features in practice will need to be configurable on a particular meter installation or types of installations.

Meter systems should include a feature, like security systems, where the meter operative can disable the alarms while they are legitimately working on the meter installation. All such events must be logged and be clearly traceable for audit purposes to the individual concerned. Safeguards will be necessary ensure that methods of working, passwords and user codes cannot be fraudulently misused, where the code is found to be abused, then that code should be able to be cancelled so that it cannot be used again.

2.4. Q5 Do you have any comments on the proposed approach to smaller non-domestic consumers (in particular on exceptions and access to data)?

Many non-domestic customers already utilise sophisticated metering arrangements across the whole portfolio of their estate. The arrangements for smart meters should enable them to utilise common business metering/data solutions in all their premises. The boundary between smart, advanced, and larger metering requirements need to be carefully defined so that practical metering solutions can be adopted. For example a *domestic* customer with a large property with a 110kW electricity supply would require half hourly metering through settlement requirements (being over 100kW), but could also be required to have a 'smart meter' incorporating a contactor to enable remote disablement of supply (being 'domestic'). Similar examples apply in gas installations but the governance should ensure appropriate metering taking account of the technical installation.

The use/misuse of data outside those authorised parties regulated by "Settlements" will be the same concern as for domestic, so similar regulation will need to apply on use of data by "third" parties.

Where businesses have the need to access consumption data in 'real time' from a smart meter this should be facilitated by the direct use of the HAN access to meter(s). In a secure way customers must be able to access the HAN communications of real time consumption data from their meters. This will be more difficult for gas meters if they only 'wake up and communicate' every 30mins.

Smaller commercial users may want the same functionality of an IHD and some suppliers may want the same ability to disable the supply to ensure payment. In which case a 'standard' smart meter should be utilised.

Meter Operators contract directly for provision of metering services with customers. This is the normal approach in the larger non-domestic sector, and becoming common in the 'advanced' sector. Non-domestic metering services contracts will increasingly be applicable to the 'smart sector', particularly promoting the increased functionality of the metering and associated data. Meter Operators should be a party to the code.

DCC functionality should record where there is a direct contractual relationship between the Customer and their Meter Operator for the provision of metering. The relevant suppliers(s) will then be able to direct faults and repairs directly to the Meter Operator, and not 'double charge' customers for the provision of metering services.

3. Chapter 3

3.1. Q8 Do you have any comments on the proposals that energy suppliers should be responsible for purchasing, installing and, where appropriate, maintaining all customer premises equipment?

Clearly this statement should not be taken literally, but only refers to the smart metering system equipment at the premises. i.e. meter(s), IHD(s) and WAN communications link. Where the existing metering system provides additional functionality, these should be replicated if still required (e.g. off peak load control).

The Prospectus does not make clear which supplier (gas or electric) provides the WAN, and if shared, how its cost is to be shared. It would have been preferable to have had a statement "The electricity supplier shall provide the primary WAN, which shall be available for use by other parties". The gas supplier will be responsible for either connecting to the primary WAN (if necessary with HAN repeaters) or for providing a secondary WAN.

The principle that the suppliers should be responsible for equipment located in the home is supported. Where there are different suppliers for each fuel becomes an issue of how the costs (provision, maintenance and installation) of the common equipment (HAN, WAN, IHD, radio repeaters or wired equipment) are shared across suppliers is the real issue. This then becomes an issue for the owner for all this equipment (Meter Asset Provider or MAP) upon change of supplier. One member has expressed the view that the WAN should be owned by the DCC who should also pay the relevant supplier/agent for its installation.

In the initial installation phase there will be instances where the gas meter is fitted in advance of the electricity meter and there may be a desire to fit a separate WAN communications. Rapidly through the roll-out phase this will become less common as increasing electricity meters are fitted. So fitting a separate WAN device should be an option, but not a mandated or probably a commonly enduring solution.

A separate WAN module may be appropriate where there is a series of gas (or electricity) meters in a communal meter cupboard. But a module approach fitted in the electricity meter would appear to be the most effective design solution. Irrespective of this whatever method is used e.g. separate WAN unit or WAN unit incorporated into electricity meter, the unit must be of a modular design in which a WAN module can be replaced/upgraded without the need to interrupt the electricity supply.

3.2. Q9 Do you have any comments on the proposal that the scope of activities of the central data and communications function should be limited initially to those functions that are essential for the effective transfer of smart metering data, such as data access and scheduled data retrieval?

The government are setting very ambitious targets to roll-out smart metering. The implementation of the DCC for data communications is a key part of the overall smart metering system. The initial scope of the DCC should be as narrow as possible to ensure early and successful delivery of the essential DCC functions.

Later development can then extend the scope of DCC based upon a cost/benefit in a similar way to all other industry developments.

It is unreasonable to expect a full 100% coverage of every meter position within GB by the DCC communications at the time a meter is installed. There will be situations where meters will be fitted prior to the DCC communications being available in that local area and where the meter is located in a position within the premises where the communications are inoperable without further subsequent installation work. So functionality must be included to allow for a 'basic' meter operation (record energy, interact with an IHD, etc.) to allow meters to be installed and made operational in advance of communications provision. Meters will need configuring with a 'basic' set-up prior to communications. This could either be

before attending site or on site by the operative, or perhaps preferably by temporary remote communications. The DCC will therefore need to allow programming access by the meter operator.

Where permanent communications cannot be provided to a particular meter position, then enduring regular reading/data collection will need to be provided.

3.3. Q10 Do you have any comments on the proposal to establish DCC as a procurement and contract management entity that will procure communications and data services competitively?

Appropriate arrangements will need to be in place at contract signing stage to allow re-procurement and transfer of assets to a new service provider. It is not feasible to revisit each premise to recover and replace communications equipment on change of service provider.

If the communications technology is replaced during or beyond the initial contract then the old and new technology will need to be co-existent *for a number of years* to enable a programme of customer visits to replace the premises communication equipment. Any bulk change would need substantial notice.

3.4. Q11 Do you have any comments on the proposed approach for establishing DCC (through a licence awarded through a competitive licence application process with DCC then subject also to the new Smart Energy Code)?

The DCC will determine the WAN technology. This means that any smart meter installed before the DCC makes this determination is at risk of requiring a revisit to change the WAN module (if the supplier wanted to use the smart meter functionality), or to fit one (if the supplier had not wanted to take the risk of a stranded asset communications at the time of meter installation).

If suppliers are already installing and communicating with meters at the time DCC commences operation, it will take time to migrate them to the DCC, and de-appoint their existing agents. It is unreasonable to require a supplier to use the DCC on day one of its operation for all its smart meter installations. There will need to be a time period to transfer to commence using DCC for all new meter installations; and to migrate all pre-installed equipment to DCC.

3.5. Q12 Does the proposal that suppliers of smaller non-domestic customers should not be obliged to use DCC services but may elect to use them cause any substantive problems?

This will allow existing AMR installations/investment to remain in place. The optional use of the DCC communications infrastructure for new meter installations will be driven by relative cost, service, simplicity, etc. Keeping this optional (at least initially) will demonstrate whether the DCC is providing a competitive solution against the other competing communication options.

3.6. Q13 Do you agree with the proposal for a Smart Energy Code to govern the operation of smart metering?

Yes. Care will be needed to ensure the scope of the new code is compatible with the scope of existing codes.

The Prospectus envisages an agreement between the DCC and users of its services. Will that extend to other users (e.g. water suppliers reading their meters) and other 'non-core' uses of the DCC communication infrastructure?

Meter Operators contract directly for provision of metering services with customers. This is the normal approach in the larger non-domestic sector, and becoming common in the 'advanced' sector. Non-domestic metering services contracts will increasingly be applicable to the 'smart sector', particularly promoting the increased functionality of the metering and associated data.

Meter Operators should be a party to the code. DCC functionality should record where there is a direct contractual relationship between the Customer and their Meter Operator for the provision of metering.

The relevant suppliers(s) will then be able to direct faults and repairs directly to the Meter Operator, and not 'double charge' customers for the provision of metering services.

3.7. Q14 Have we identified all the wider impacts of smart metering on the energy sector?

Meter Operators can contract directly for provision of metering services with customers. This is the normal approach in the larger non-domestic sector, and becoming common in the 'advanced' sector. Non-domestic metering services contracts will increasingly be applicable to the 'smart sector', particularly promoting the increased functionality of the metering and associated data. Meter Operators should be a party to the code. DCC functionality should record the direct contractual relationship between the Customer and their Meter Operator for the provision of metering. The relevant suppliers(s) will then be able to direct faults and repairs directly to the Meter Operator, and not 'double charge' customers for the provision of metering services.

Currently the MOP and MAM have obligations to install, maintain, configure the metering and maintain the data relating to it through various industry codes and legislation. In future, the supplier could, possibly via their agent, remotely reconfigure the meter (change switching times/SSC, credit to prepayment, etc.). The role and obligations on the MOP & MAM will need reviewing with the introduction of the smart meter.

Feed in Tariff metering is currently outside of the settlement arrangements, although with the planned substantive increase there is value in including within the smart metering system. It is important that FITs equipment with metering is required to install a smart meter from the similar time that the utility meter is mandated. Even if the smart FIT meter cannot communicate at this time, it will be 'smart ready' to be interrogated at the time of the smart meter communications installation in that premises being commissioned.

3.8. Q15 Is there anything further we need to be doing in terms of our ensuring the security of the smart metering system?

Whatever security arrangements are in place it must be possible for customers, through appropriate processes, to access the HAN system to obtain meter consumption data and price signals. This information may then be used by building management systems, smart appliances and electric vehicle charging. In time the HAN would also control 'off peak' load like immersion heaters, storage heaters, rather than via contactors included in the metering equipment.

Other users, such as the fire service, are interested in being notified of smoke alarm batteries running low, maybe only notified on the IHD. There will be many more possible uses emerging in the years to come. Where appropriate, these safety devices should be accommodated without considerable difficulty on the part of customer, or equipment installer.

It will be an interesting challenge to establish a sufficiently robust security system which is suitably supportive of a customer's 'plug and play' experience.