

# Intellect Response to Ofgem

**Smart Metering Prospectus – Main Prospectus  
questions requiring a response by 28 October  
2010**

**28 October 2010**

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Information Technology Telecommunications & Electronics Association



## Background

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Intellect is the leading UK trade association for the IT, telecoms and electronics industries; industries that generate around 10% of UK GDP and 15% of UK trade. Our 750 plus members include blue-chip multinationals as well as early stage technology companies and play a crucial role in virtually every aspect of our lives. Intellect articulates a cohesive voice for these industries across all market sectors, and is a vital source of knowledge and expertise on all aspects of the technology industry. We do this by fostering improved business performance, encouraging thought leadership, and making the shaping of markets and influencing of policy possible.

Alongside the technology industry's considerable footprint in the UK, Intellect also enables many other industries to operate efficiently in today's economy including:

- utilities
- financial services
- creative industries
- retail
- transport and logistics
- manufacturing
- defence and aerospace
- pharmaceuticals

We are a trusted partner for Government, both in terms of policy development and policy implementation across numerous sectors. We look to ensure that all relevant engagement of policymakers and regulators with industry is both easy and as valuable as possible in order that the technology industry may play the fundamental role it merits in the success of UK plc.

## Overview

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Intellect welcomes the opportunity to respond to this second round of questions from the Smart Metering Implementation Programme Prospectus. The answers to these important questions will help shape the mass deployment of smart meters.

In this paper, we have articulated the industry opinion in the neutral environment of Intellect. As such, we have included suggestions from our members to improve and accelerate the process – these may conflict in some cases and represent the broad membership who we have engaged in this work. We feel our position is strengthened by this and are happy to provide more information about any of the ideas suggested.

The UK has the potential to become a leading light in the development of smarter energy management. However, for this to happen it is essential for government and regulator to take the necessary steps to create the platform to enable the technology industry to innovate and shape the fundamental makeup of the UK energy infrastructure for the future. This encompasses regular engagement with the industry to actively define the requirements of smart meters, taking onboard the suggestions of a broad range of industry stakeholders.

## Intellect's response

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### **Question 1: Do you have any comments on the proposed minimum functional requirements and arrangements for provision of the in-home display device?**

#### **Minimum functional requirements**

Intellect members are broadly supportive of the minimum functional requirements and that these requirements should include interchangeability. This is vital if suppliers should choose to offer a new IHD at a later date if they choose too. The benefit for the consumer is also clear as it will give them the opportunity to add additional devices of their own.

One member has suggested that there might be a need to define the interface between the IHD and the meter. They have suggested that there are at least two ways of doing this: one, by specifying a HAN protocol that will connect any IHD to any meter or; two, by specifying a special "socket" on meters that any HAN modem can be attached to. This member suggested that figure 2 in 3.14 in the Prospectus could helpfully be redrawn to reflect this in more detail.

Another Intellect member has highlighted that the specification outlined within the Prospectus is focussed too much on the read only display function. They note that should future requirements for demand response, pre-payment or other schemes be implemented through the IHD, then the scope of functionality will require changes. In particular, it is highly likely that the two way communication between the IHD and the meter will introduce additional threat vectors which will necessitate assessment to provide an accurate security profile.

#### **Disabled customers**

Intellect members place a high priority on ensuring that the needs of disabled customers are fully taken into account when providing them with display devices. In the experience of our members, some key features that need to be taken into account for disabled customers include: location; intuitive operation; text-size; lighting; button-size (whether real or touch-pad); audible feedback; and tactile feedback. Intellect would be happy to offer Ofgem further assistance on this important area of the consultation.

### **Question 2: Do you have any comments on our overall approach to data privacy?**

Intellect members welcome Ofgem's overall approach to data privacy and security. Our members have further thoughts – on distinguishing between types of data and data storage – which are expanded upon below for Ofgem's consideration.

#### **Importance of distinguishing between types of data**

Many Intellect members point out that special attention needs to be paid to what is meant by "meter data". In the past, the concept of data ownership has not been a major preoccupation because it was typically limited to the current status of a single mechanical register that formed the basis for the calculation of a bill. Smart meters, however, are capable of logging much more detailed information which means that the situation is now very different.

Intellect strongly supports the view expressed in the Prospectus that the entitlement of suppliers to "meter data" arises solely from their obligation to provide accurate bills and does not include by default all data that was ever recorded in a given smart meter. This, wider, dataset should be the property of the consumer and nobody else.

The concept of privacy should therefore include the principle that the wider dataset may not be exploited for profit (or even benevolently at cost) by any third party without the consumer's permission.

Moreover, one Intellect member believes that there should be standard, regulated data sets that define the entitlement of third parties and are limited to what these parties need in order to fulfil their licence terms and other legal responsibilities. They point out that categories of entitlement to data subsets may include the following:

- Data required by a supplier or DNO to meet its licence obligations;
- Data required by a supplier or DNO for grid management;
- Data required by a supplier or DNO to meet the terms of a separate voluntary contract signed by the consumer; summary data helpful to a *new* supplier to understand the consumer's needs;
- Summary data necessary for other third parties (e.g. landlord) to meet legal or regulatory obligations; and summary data for government to monitor the effectiveness of the smart metering program.

### **Data storage**

An assortment of Intellect members have recommended that historical data that resides on the meter should only be made available to the user and the DCC. Real time technical data should be made available to the DCC and to the network operators such as DNO's on a real time basis but as mentioned above the specificity of the data should be obfuscated.

## **Question 4: Have we identified the full range of consumer protection issues related to remote disconnection and switching to prepayment?**

Intellect believes that Ofgem has done well to identify many of the pressing consumer protection issues related to remote disconnection and switching to pre-payment. Additional issues raised by Intellect members are elaborated upon below:

### **New issues arising through future pilots tests**

Intellect does believe that Ofgem could usefully prepare itself for further issues surrounding consumer protection issues related to remote disconnection/switching to prepayment to be identified as pilot tests get underway. In these pilots tests, Intellect members have emphasised the importance for an effective customer support team to be in place in order so that new issues and concerns are appropriately identified and dealt with.

### **'Switching to pre-payment'**

Intellect members did reserve some specific comments for issues around 'switching to pre-payment'.

In particular, it was highlighted that current best practice dictates that the *location* of a meter needs to be taken into account while deciding on the viability of a switch from "credit" metering to "prepay". For example, if the location is unsuitable for user interaction – by being too high, too low, outdoors, in basement, inaccessible, etc - then the need to re-locate the meter has to be considered. The cost of this will likely be high (much higher than a normal meter exchange), and is sometimes prohibitive, so alternative solutions must be found.

One Intellect member notes the importance of the IHD demonstrating significant robustness – particularly if prepayment is going to be proffered as a solution to the vulnerable. In turn, they have specified that some basic requirements for prepayment are: dependency on AA batteries provided by the householder is not acceptable; dependency on other non-guaranteed services

(e.g. phone) is undesirable; and top-up features must continue to work, in the dark, when the household (demand-side) power is off.

### **Question 5: Do you have any comments on the proposed approach to smaller non-domestic consumers (in particular on exceptions and access to data)?**

Intellect supports the notion that the exclusion of smaller non-domestic consumers from the DCC does make sense where advance metering is already installed.

Intellect notes that many “smaller non-domestic consumers” have often been some of the most innovative. For example, some SME consumers have appointed their own meter operators are able to manage their energy usage on-line without any investment in new systems, through new advanced metering technology. These users can already use meter data to control consumption via mobile phones and PC’s, etc that are linked to a whole range of electronic appliances.

Where this is the case, it is important to note that in many advanced metering applications, data is pulled automatically (locally), from meters into metering systems. These systems have versatile data handling capabilities, and can provide most smart functions. From the DCC point of view, it actually connects to the *system*, not the meter. There are well-proven solutions for validation, verification, notarisation, etc that have been tested over several years now. In this case the DCC needs to be able to handle data over the existing general-purpose communications networks.

Some low-cost energy suppliers may wish to make conditional contracts with their customers based on the principle that if the customer provides appropriate meter data free on-line (within the constraints of the proposed ownership and privacy rules), then the supplier will offer a discount for not having to use one of the DCC’s appointed communications solutions. In this case, the DCC needs to be able to handle data via suppliers, rather than exclusively over its own new networks.

Some care will therefore be needed to ensure that over-restrictive compulsory use of the DCC’s own contracted communications channels does not build-in avoidable costs. Put differently, the DCC should not unreasonably reject communications channels that meet the industry need, simply because of the negative effect this might have on its income.

### **Question 8: 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?**

Intellect members agree that the process should be supplier-led but that there may be some confusion over who is responsible for the support and maintenance of the metering elements. One Intellect member was keen to highlight the inevitably large amounts of calls that suppliers will receive from consumers and the need for suppliers to develop a suitably large support framework to coordinate potential issues.

Intellect members thought it would be useful for the different parts of the installation to be identified and the issues associated with their various elements scrutinised.

#### **Meters**

One member notes that due to the long-term effect of consumer switching, all suppliers will have to be able to work with all meters. Meters are therefore not differentiators. In a competitive market, suppliers will purchase these meters at different prices and with different contractual terms and conditions. This means that although a supplier will be able to work *operationally* with all meters (via the DCC), they will have an increasingly complex set of meters

that are governed by externally defined terms and conditions. In a typical case, a supplier might win a customer from another supplier that negotiated a much poorer MAP price from a previously unknown (to him) asset provider. Why should he pay more for this meter than he does for all his others? Could another supplier use this situation to unfair advantage?

This Intellect member does not think it is not acceptable within the spirit of competition law that suppliers should have to negotiate “back-to-back” contracts to cover price fixing in this scenario.

Moreover, they note that there may be a role for the new Green Investment Bank in resolving this issue – a point also contemplated in the Prospectus documents. One Intellect member has suggested a mechanism whereby suppliers would receive a fixed, generous, compensation fee from a new smart meter fund for every smart meter they installed. This would provide an incentive to roll-out quickly. The GIB would then sell - by competitive tender tranches of meters - to asset providers at a reasonable profit, the main selection criterion being the price at which the asset provider would offer all meters in the tranche to all suppliers. The advantages of this approach are outlined below:

- If deployment was profitable, then it would provide an incentive to roll-out quickly
- The Bank’s regular tenders (annual, regional?) would ensure regular competition in asset provision (i.e. meter funding)
- It would level the playing field for smaller suppliers
- It would remove the need for complex peer-to-peer contracting practices among the big 6.

## **WAN**

In the opinion of one Intellect member, the “purchasing” of WAN modems implies that these would become the property of the purchasers, i.e. the suppliers. As for meters, there is no logic in suppliers each owning a completely random sample of the country’s smart WAN modems that bears no relationship to their on-going customer base.

Given that there may be considerable operational risk in WAN modem ownership, this particular Intellect member believes that it is also not reasonable that suppliers should be forced to accept this, especially as the choice of modems will be highly constrained (possibly to 1) by the communications policy of the DCC. They believe that medium-term responsibility for the operational performance of WAN modems should lie with the communications provider.

## **HAN**

A section of Intellect’s membership thinks that if the HAN modems are standardised, then they should be treated the same way as meters. If they are chosen by suppliers as competitive differentiators, then they should be owned and maintained by suppliers.

## **IHDs**

In all scenarios these appear to be seen as competitive differentiators, so they should be owned and maintained by suppliers.

**Question 9: 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 to the effective transfer of smart metering data, such as data access and scheduled data retrieval?**

There is a concern among some Intellect members that the current proposal will *not* lead to an earlier achievement of the Go-Live DCC milestone. Furthermore, some of our members posit that the longer the Go-Live Rollout phase persists the more difficult it will become to reach the next milestone at all. The adoption by the DCC of communications contracts negotiated by other parties (as described in 2.63 of the Communications Business Model) looks particularly problematical.

Intellect members note that by proceeding with limited communications functionality the future benefits to the DNO might be impacted. For example, a communications platform which is adequate for reading retrieval may not be suitable for full implementation of Smart Grid controls and distributed renewable management. Additionally, the use of data and the communications medium for future functionality will introduce a different set of threats and risks meaning the solution may be unsuitable unless these are considered at the design stage.

Intellect notes that a particular solution might be to complete more of the preparatory stages *before* the end of Phase 2 - Go Active. In particular, there could be a great advantage in preparing for the implementation of Meter Registration as early as possible. The preparations should include ensuring that all deployments arising from suppliers' smart meter installations before the obligations in Go-Live Rollout take effect should be recorded and documented in a manner that makes the inevitable later data migration as smooth as possible. There are numerous advantages that arise from co-ordinating the data structures that will be created during the early phases, including:

- Identification of the data fields *actually required*, especially with reference to the various new devices in the system (e.g. WAN modem type).
- Opportunity to test correspondence between data structures produced by different suppliers and other participants in preparation for specifying the requirement for full automation
- Early experience of actual data request and exchange usage patterns
- Early measurable experience of the likely avenues for efficiency improvements over the old system e.g. guaranteed 24-hour switching service
- Opportunity to test the mechanisms for dual-fuel and non dual-fuel customers.
- Early preparation of much tidier "smart legacy" data-sets (arising from pre Go-Live DCC phases) to enable industry processes, than would otherwise be the case. Ensuring cleanliness of in-coming data will be central to the success of the migration to the new Registry.

Intellect agrees with the principle that the scope of activities of the Central Data and Communications Function should initially be limited to core industry processes, but would re-emphasise that these processes *include* change-of-supplier and all other agents. It is vital that the change-of-supplier process is not "frozen" by the arrival of non-compatible datasets from competing suppliers, otherwise smart metering will become perceived as a competition blocker, not an enabler.

A section of Intellect's membership believes that maximising the number of smart-ish meters installed in the short term is the wrong target as it will lead to exponentially increasing complexity and cost thereafter. They suggest that better targets would be (1) the in-home solutions are defined to the point where rollout-scale procurement can begin; (2) the DCC is up



and running and procuring communications services and (3) there is a registry with one version of the truth for non supplier-specific data.

**Question 10: 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?**

Intellect members support the establishment of the DCC as a procurement and contract management entity that will procure communications and data services competitively.

However, there is a view amongst a section of our members that the timescale for establishment could be improved. They suggest, for example, that by taking a practical approach, Ofgem could actually complete the appointments for the DCC much sooner than currently planned in autumn 2012. This could greatly improve the likelihood of success for the otherwise extremely challenging period of “autumn 2012 to spring 2013” during which a newly-appointed DCC is expected to award major new contracts to new service providers, providing new technology to a new system.

One Intellect member was keen that the DCC should not retain control of any asset that it may need to use or procure as part of delivering the DCC service. The exception would be the systems and services that it would require to run its corporate activity and this delineation should be explicitly confirmed.

A further concern was highlighted by another member around the potential for the enforcement of a one standard solution which would reduce the incentives for suppliers to achieve a competitive advantage by providing an improved service to a customer through smart metering.

**Question 11: 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)?**

Intellect members, as outlined above, support the proposed approach with some of our members advocating an accelerated appointment of the initial DCC.

**Question 12: Does the proposal that suppliers of smaller non-domestic customers should not be obliged to use the DCC services but may elect to use them cause any substantive problems?**

Intellect sees no serious problems with this providing there are suitable industry rules to ensure a reliable change of agent process.

A helpful compromise would be that even although SME customers may elect not to use the DCC, their metering arrangements should nevertheless be logged with the central register. This would facilitate the change of supplier process by providing immediate clarity to the new supplier. Special arrangements for SME customers could be included within the Smart Energy Code, thus enabling competing service providers to assert unequivocally that their services are industry compliant.

Intellect also supports the idea that one of the communications channels that the DCC should be obliged to support would be an internet-enabled link to SME service providers, especially those deploying *advanced* metering. This is capable of providing extremely cost-effective solutions, and may in the medium term offer significant potential in the Residential sector too.



By extension, Intellect believes that the DCC should provide scope for suppliers and their agents to use internet-based techniques with *all* customers to collect data as they see fit, and where appropriate, to feed this into the DCC as if it had arrived by a directly-contracted communications channel.

One Intellect member was keen to point out that if the intention is to implement the DCC as an economic mechanism for providing metering communications to deliver smart grid telemetry for the future, then excluding a significant part of the consumer landscape will encourage multiple solutions to a similar problem with increased cost.

The same member notes, that to achieve a future intelligent grid requires snapshots of consumption across the grid no matter the corporate form of the consumer - only in this way can the local demand profiles be understood. If multiple solutions are required to achieve this level of telemetry then this will mean increased cost to the consumer. Thus the technical requirement to be able to gain a snapshot of grid consumption in real or near real time should hold as a central priority, and will require - under these circumstances - integration between the DCC and other non-domestic technical solutions.

### **Question 13: Do you agree with the proposal for a Smart Energy Code to govern the operation of smart metering?**

Yes, Intellect strongly supports the creation of a Smart Energy Code to govern the operation of smart metering.

### **Question 14: Have we identified all the wider impacts of smart metering on the energy sector?**

On the whole, Intellect believes that the Prospectus and its associated documents has done a good job of identifying many of the wider impacts on the energy sector. Intellect also appreciates that much of this has necessarily been done in a high-level way. One general concern is the failure of the Prospectus to pay more attention to the smart grid impact related aspects of the smart metering rollout.

One of our members has identified some more specific issues which are detailed below.

#### **Companies already engaged in efficiency and energy management solutions**

One Intellect member has noted that there are scores of businesses already engaged in energy efficiency and management solutions. Their experience of discussions within five trade associations is that there is increasing concern among these businesses that energy suppliers are being afforded "assisted entry" into what had previously been an open competitive market, and that the market will be seriously distorted as a result.

Many independent service providers have built their businesses on the premise that they are *not* driven by energy sales, and are therefore concerned that the image of authority that accrues to the party that leads on-site installations may undermine the independents' proposition.

The same member notes that it is clear that suppliers are faced with paying for the costs of smart metering, and risking the negative impact of passing these costs through in the form of higher prices to their customers. They see no advantage for *suppliers* in the idea that the industry will make compensating savings by reducing overall consumption. This pressure inevitably leads suppliers to seek wider value propositions to fill the gap.

The Smart Energy Code has a vital role to play in ensuring fair play in these respects for suppliers and independents alike.

## Question 15: Is there anything further we need to be doing in terms of our ensuring the security of the smart metering system?

Intellect thinks it would be helpful for the glossary of specialist terms to be produced for the area of security. Some of our members have noted that certain words are often being used with multiple, different meanings resulting in confusion.

Words and terms identified as requiring definition include:

- Access-control
- Anonymisation
- Encoding
- Encryption
- Integrity
- Notarisation
- Ownership
- Privacy
- Right of access
- Right to copy
- Right to hold
- Right to retain
- Right to use or exploit verification
- Security

Intellect members also note that a useful distinction might be made between individual user data, and grouped or summarised data.

Another member also notes that, as the smart meter rollout is planned to simultaneous support future smart grid requirements, it is very important to bear in mind the additional threat vectors that arise when looking at the grid, rather than just meters.

This Intellect member would recommend a threat model based assessment of potential risk exposure in deploying the smart metering solution and supporting fabric. Once again pilots would be immensely valuable in containing the associated risk given the complexity, integral nature and ecosystem wide scope of the potential threats posed by smart meter and smart grid designs and deployments.

### Intellect contacts

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Please do not hesitate to contact us if you would like any further information; we would be more than willing to host a workshop with our members to discuss this in more detail.

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