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Your reference
Our reference Smartmetering
Date 23 April 2010

Dear Emma, Steve,

Review of Current Metering Arrangements

Thank you for your letter of 01 Apr 2010 seeking our general views on the current metering arrangements and the bearing these might have on the smart metering implementation program. Throughout this response we have marked in **bold** any references to the topics that you raised specifically. We have addressed them where possible in the same order as your letter.

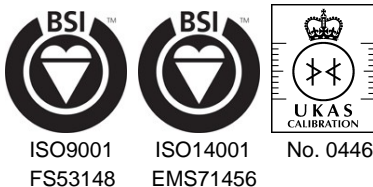
Statement of interest

You may know that Siemens, through its Metering Services division, is one of the largest independent providers of metering services to the electricity gas and water industries in the UK. It serves all segments from individual consumers through SME and commercial up to major energy users. Through its other divisions Siemens provides generation, grid, distribution, and connection solutions on a large scale. Its industry division also provides smart-home white-goods and smart building control solutions from a residential up to an industrial level. Finally it provides Secure Data Management and IS services to government departments, local authorities, health services, and other major institutions. Siemens is active in these segments throughout Europe and much of the rest of the world.

Brief summary of our response

- The competitive market in metering has not developed, except to the extent that it is transferring from the Distribution domain to the Supply domain. We believe that Suppliers are well-placed to serve their existing customers, but they have no natural incentive to invest in creating an efficient market.

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- Alongside the Supplier Hub Principle, there is a need for both a System Interoperability Principle and a Commercial Interoperability Principle that will guarantee access to a regulated core of smart metering functions for all Suppliers (and other authorized parties, eg DNOs).
- There is a need for some basic standards. Without a few reliable reference points, creative investment becomes excessively risky and innovation is stifled. In particular there needs to be a clear statement of the UK's attitude to European Standardisation Mandate 83-2008 EN.
- Arrangements for electricity and gas should be aligned.
- There would be positive benefit for the market as a whole if there was a "thin" central registry. The inefficiencies arising from existing data-flow inter-dependencies demonstrate that the various competing parties cannot be relied upon to act in the best interests of each other.
- Absolute clarity is essential on the data-ownership question. Smart metering data belongs to the consumer except where stated otherwise in regulations. Failure to provide this assurance will fuel growing alarmist concerns about intrusions into privacy.
- Current metering arrangements take no account of the now foreseeable need to accommodate Feed-in Tariffs, Smart Grid Applications and Electric Vehicle Charging.

Re your Introduction

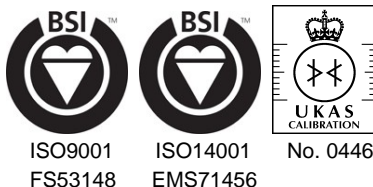
We support Ofgem's belief that **competition** can deliver significant benefits while driving down costs and are confident that competition in metering services, while it lasted, *did* deliver lower costs and better service. Perhaps the clearest indication of this is summarised in Ofgem's publication 27/08 p87 which shows that the introduction of competition in meter operations produced lower prices even when measured against an incumbent with large purchasing power that had recently been through a price review. We think it unlikely that the new competitors were able to purchase meters at a lower price due to their lower volumes, or were able to pay their field staff less since many of these were covered by TUPE. The difference lies in the relentless drive for innovation, overhead reduction and general efficiency that continuous competition produces.

It should be noted that both customer service and safety standards *improved* when competition was introduced.

With traditional metering, **accurate billing** is highly dependent on both meter-reading access rates and the frequency of attempted reads compared to the frequency of billing. Many utilities found it most economical to work with only one accurate reading per year. With smart metering near-100% accuracy is possible at billing frequencies of once per month or even more.

We believe that the **Supplier-hub principle** remains strong, not least because Suppliers operate the call-centres that provide for most consumer interaction. We do not believe however that this should extend to Suppliers using uniquely-specified meters as differentiators. Given the long-term effect of consumer "churn" we see no sense in each Supplier owning a random sample of the country's meters.

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It is fundamental to the efficient operation of the competitive market that **all Suppliers need to be able to work with all meters**. Without this principle, consumers will be locked-in to their meter-providing Supplier.

Alongside the Supplier-hub principle we therefore need the “**System Interoperability principle**” which may be stated thus:

A component of a smart metering solution that is intended for use by *all* Suppliers must be procured to a common specification.

We may then say that, *by definition*, any component of a smart metering solution that is chosen at a Supplier’s sole discretion or is intended as a differentiator is not covered by the System Interoperability Principle and therefore lies outside the scope of smart metering regulation.

We believe that the clear definition of the set of components falling within the interoperability principle will provide the maximum scope for **Innovation** for solutions both inside and outside the interoperability domain.

Re your Background section

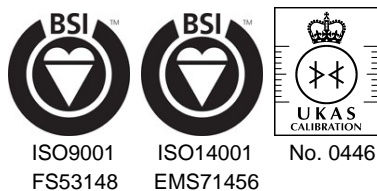
The main structural issues with current arrangements are (1) the asymmetry between the arrangements for electricity and for gas and (2) the inefficiency of some of the industry rules – for example those that create a dependency on the cooperation of an out-going service provider for information needed by an in-coming provider.

The current **asymmetry** between electricity and gas simply reflects the state of evolution of the industries rather than any deep-seated need to do things differently in each domain. Clearly the introduction of new more streamlined arrangements for smart metering can resolve these problems. We believe that a key feature of the new smart metering market model is that the Central Communications Service should be underpinned by a “thin” Registry which contains a minimum of structured data necessary for industry use. We have explained elsewhere¹ how clear regulation of rights of access by authorised parties to specific data-sets can facilitate the provision of an efficient solution. It would be helpful to state explicitly who these “interested parties” are the outset, but we would expect the list to include, the consumer, the present or out-going Supplier, an In-coming Supplier, the DNO, the Settlements process, plus maybe the Regulator or the ONS.

With reference to the inefficiency of **industry rules**, we believe that the experience of recent years has demonstrated that Suppliers can be relied upon to take into account the needs and wishes of their target customers, but Suppliers cannot be relied upon to act in the interests of each other, or the industry as a whole. The same applies to more or less *all* competitive participants. There is therefore a need to regulate activities that are fundamental to the new national smart metering concept. In other words, from the industry governance point of view, the concept of smart metering is *defined* by what is

¹ See for example Siemens’ response of 11 Jan 2010 to Ofgem’s *Request for Updated Submissions* of 16 Dec 2009.

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regulated; the rest is up to the competitive energy market. We believe that a natural and obvious distinction between what lies inside the regulated domain and what lies outside is provided by the test: *is it part of the level playing field on which all competitors must depend?*

A further complication of the present legacy situation is that the **commercial interoperability** arrangements that need to be made among suppliers due to the churn process remain opaque. We believe that it is a bad principle to expect competitors to have to make back-to-back arrangements to cover services (eg asset provision) that were supposedly procured in the competitive domain. A much better principle is that competitive suppliers should not be forced to trade with each other at all¹.

Thus, to the System Interoperability Principle we should add the **Commercial Interoperability Principle**, which may be stated as follows:

A component of a smart metering solution that is intended for use by *all* Suppliers must be available to all Suppliers at a fair price.

As with the System Interoperability Principle, we may then say that, *by definition*, any component of a smart metering solution that is chosen at a Supplier’s sole discretion or is intended as a differentiator is not covered by the Commercial Interoperability principle and therefore lies outside the scope of smart metering regulation.

Similarly, we believe that the clear definition of the set of components falling within the commercial interoperability principle will provide the maximum scope for **Innovation** for solutions both inside and outside the interoperability domain.

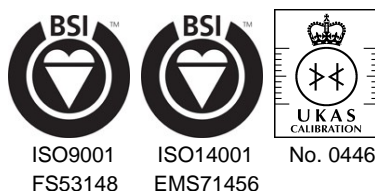
Re your overview of Issues and Scope

Competition in electricity metering has taken a new direction since Ofgem’s decision of Sep 2006 to remove many of the DNO obligations, although we believe this change was not due to the 2006 rule changes themselves. After some twists and turns, the industry norm is now that “in-area” metering services are provided in-house by the suppliers while asset provision, with few exceptions, remains with the traditional sources. For “out-of-area” metering services, nearly all suppliers are now running on ad-hoc extensions of legacy arrangements pending clarification of the new smart metering market model. Competition in metering is consequently almost 100% frozen.

With reference to **Vertical Integration**, we believe components of services offered by regulated businesses should either (a) be provisioned from within their own regulated resources or (b) be procured by competitive tender in the open market under the normal procurement rules. We do not believe regulated businesses should procure such components directly from group affiliates outside the public process.

¹ We have not completed a formal legal assessment of private back-to-back trading among suppliers of competitive services, but there may be a need to ensure that all offers are available to all suppliers.

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Similarly, we believe regulated businesses that wish to offer services to group affiliates, should be obliged to offer the same services under equivalent conditions to competitors of its group affiliates. Finally, we believe that non-regulated businesses should be free to determine their own procurement and partnership policies provided they are consistent with the constraints on regulated businesses.

Commercial **interoperability** remains problematic for independent competitive asset providers. In our experience, suppliers preferred to have no Asset Provision contract at all (and therefore potentially a deemed contract) than to sign agreements that would cover their need to use meters provided by ourselves. It took *years* of mutual familiarisation before proper contracts were signed. As far as we are aware, actual asset ownership has *never* transferred as a consequence of churn. Moreover, this unsatisfactory impasse arose out of each supplier having to accommodate only two gas meter providers and two electricity meter providers in each region. This situation could quickly become unmanageably complex if there is no common governance to cover “n” asset providers serving “m” suppliers all over the country, especially as both of these numbers can increase or decrease over time.

Our conclusion, as outlined above, is that there should be a **Commercial Interoperability Principle** to cover this. This raises the question of how fair prices are fixed and we believe that any mention of price-control implies a degree of regulation and that consequently, and to this extent, Meter Asset Provision needs to be regulated¹.

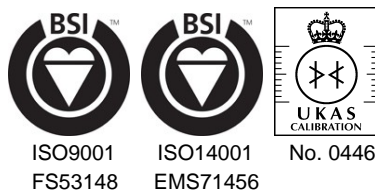
Similarly the **System Interoperability Principle** raises a question over how the necessary specifications and standards are to be agreed. This, we believe, is one of the main functions of the Design Authority as described in our paper quoted above. In the short term, the Design Authority will need to manage the transition from the *ad hoc* standards that are presently proliferating across the industry, to the more formal ones that may be expected to arise from European Standardisation Mandate 83-2008 EN (generally referred to as “M441”) which states:

The general objective of this mandate is to create European standards that will enable interoperability of utility meters (water, gas, electricity, heat), which can then improve the means by which customers’ awareness of actual consumption can be raised in order to allow timely adaptation to their demands (commonly referred to as ‘smart metering’).

CEN, CENELEC and ETSI are requested to develop a European standard comprising a software and hardware open architecture for utility meters that supports secure bidirectional communication upstream and downstream through standardised interfaces and data exchange formats and allows advanced information and management and control systems for consumers and service suppliers. The architecture must be scalable to support from the simplest to the most complex applications. Furthermore, the architecture must consider current relevant communication media and be adaptable for future communication media. The communication standard of the open architecture must allow the secure interfacing for data exchanges with the protected metrological block.

¹ There may be other options that fall short of full Regulation, eg “accreditation”. The core requirement is that the terms and conditions of contract should be open to appropriate Regulatory scrutiny.

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Acceptance by CEN of this mandate starts the standstill period referred to in Article 7 of the Directive 98/34/EEC of 22 June 1998 which means that no individual states are allowed to develop their own interoperability standards until this work is complete. We believe that a clear statement is required concerning the UK's position on this process.

With reference to the question of **Scope**, we would argue that the two principles described here (the System Interoperability Principle and the Commercial Interoperability Principle) are all that is required.

At this stage we believe it would be sufficient to say that appropriate standards *will* be adopted, as and when the European process delivers its results. This would have the effect of concentrating efforts where they belong, rather than in the costly "land-grab" which is already looming. We believe it is *not acceptable* that consumers could discover that their future ability to benefit from competition in energy supply has been compromised by a failure of Regulation to provide clear and strong leadership in this respect.

Re your note on Other topics

We also think it necessary to consider the situation for present **PAYG consumers** especially because vulnerable and fuel-poor consumers are over-represented in this group. In the long term (ie when nearly all PAYG consumers have been moved over to smart metering) we believe that metering technology will no longer be an important segmentation factor. By separating the means of payment from the means of metering, utilities will be able to provide a whole spectrum of innovative new contractual models to meet the differing needs of their customers, and the old credit/prepayment debate will be seen as a thing of the past.

The uniquely-defining features in present PAYG meters are:

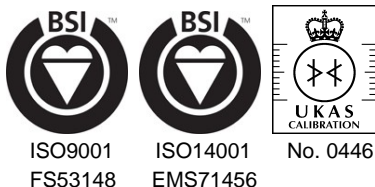
1. they have a breaker/valve that can interrupt the supply.
2. they have a means of re-enabling the supply under the sole discretion of the customer.
3. they offer a wide range of helpful features and information displays, designed to help with budgeting.
4. they are conveniently (relatively) sited.

Item 3 can relatively easily be met by smart metering by careful drafting of standards for the meter, the HAN and the home display.

Item 1 is already "in" the proposed smart electricity meter specifications, but the situation remains unclear for gas. Valves must be included if mode-switching between prepay and "other" is to be possible. There are however other factors, like meter location, to be taken into consideration before mode-switching becomes a viable proposition (see Item 4).

Item 2 is slightly more problematic. The worst case is when a meter that had "switched off" due to exhausted credit also temporarily loses communications with the centre. The consumer has no phone and no batteries. Under present prepay systems, after he has exhausted the various local emergency credit options, he has the final choice of going to a nearby shop, buying some energy and using his

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smart card to open up his supply again. In other words the meter communications, although inconvenient, are extremely robust. With new smart remote communicating systems it may be necessary to devise some new rules that will cover these unusual instances, especially those involving communications failures. We would be pleased to offer an appropriate set of such rules based on our experience of supporting millions of prepayment meters for many years.

A consequence of getting this wrong, is that a temporary communications failure might have no effect whatsoever on the majority of "account" customers, but might cause widespread denial of service to the vulnerable and fuel-poor.

Item 4 is also difficult. Most Suppliers today go through a process of evaluation before installing a PAYG meter. This includes an assessment of the suitability of the meter location, and may result in the need to move it. Clearly if *all* meters were to be remotely mode-switchable for PAYG, then *all* of them need to take location into account. In order to avoid a mass relocation program, some "best practice" rules are required to guarantee minimum standards of accessibility for smart PAYG customers. Putting much of the PAYG functionality into the In-Home Display unit may be helpful, but care has to be taken to ensure that a lack of AA batteries cannot lead to an unwanted disconnection.

Finally, it should be remembered that **industry needs are changing**. The present metering arrangements were not designed to accommodate Feed-in Tariffs, Smart Grid Applications and Electric Vehicle Charging. These new requirements are now clearly foreseeable, and a well-organised roll-out of smart metering presents a unique opportunity to ensure that these exciting new developments are delivered efficiently to the lasting benefit not just of the industry, but of the population as a whole.

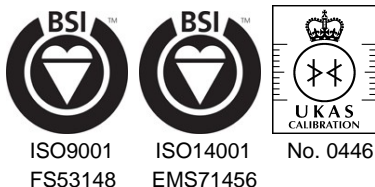
Re your overview of Next Steps

With reference to your proposed Next Steps, we look forward to continued engagement in the smart metering market development process and, as ever, remain keen to contribute our constructive inputs.

Best Regards,

Martin Pollock

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