



# Consultation Response

By email to [smartmetering@decc.gsi.gov.uk](mailto:smartmetering@decc.gsi.gov.uk)

Ref: URN 11D/838

12 October 2011

Smart Metering Implementation Programme

Department of Energy and Climate Change

3 Whitehall Place

London SW1A 2AW

Dear Sir/Madam

**ELEXON's response to DECC's Smart Metering Implementation Programme: A call for evidence on privacy and data access (August 2011).**

I welcome the opportunity to provide ELEXON Limited's views on privacy and data access.

We have provided responses to questions that are relevant to ELEXON and electricity settlement in the attached table. In addition I would like to highlight four specific aspects where ELEXON either has specific ongoing requirements or can provide DECC insight into future needs:

***Settlement data requirements***

We would like to clarify the requirements for settlement regarding use of electricity consumption data:

From a settlement perspective Suppliers are only required to submit meter reading data at the granularity set out in the Balancing and Settlement Code (BSC).

Above 100kW demand (see BSC Section Annex x-1 for definition) or where a Supplier (or their customer) has elected for their energy to be settled half hourly, the energy is measured and processed as actual half hourly data.

For customers with demand below 100kW, we do not require actual half hourly reads and instead use periodic meter reads. This arrangement applies to almost all domestic consumers, and the target is for 97% of meters to achieve a meter reading interval of less than a year. As settlement is based on half hourly quantities, we need a means of estimating the energy consumption by half hourly period. This is achieved through statistical techniques that can be used to both allocate a meter advance across its constituent half hourly periods, or estimate half hourly consumptions pending a meter reading being taken. This is known as profiling and non half hourly settlement.

The introduction of smart meters does not of itself introduce any change to these arrangements. Thus whilst a smart metering system can measure and transmit consumption data at the half hourly level, the decision on



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whether data is submitted either at a half hourly level or a predetermined non half hourly interval and profiled (say monthly) remains a Supplier decision. To make half hourly or any other interval data the norm would require a change to the BSC. In the absence of a half hourly mandate, profiling will continue to be needed.

## ***The ongoing requirement for half hourly data to support profiling***

Profiling is reliant on load research. We do this through establishing a limited but representative sample of customers and recording their half hourly consumption. Whilst some of this data comes from a central group of domestic and non domestic customers, Suppliers also have an obligation under the BSC to provide half-hourly data from a random selection of their customers drawn from across their customer portfolios and covering their different geographic areas of operation. Suppliers are responsible for any arrangements relating to the recruitment of their customers into the sample and use of the data.

ELEXON collects half-hourly data from these domestic and non-domestic metering systems. Data is collected for around 2,500 metering systems and is captured in a secure database where it is aggregated. Once aggregated the profile sample data is anonymous and cannot be tracked back to individual customers. It should be noted that Suppliers have no access to the half hourly data that is collected from other Suppliers' customers. It is important to ensure Suppliers continue to have the appropriate permission to allow access to data for the purposes of supporting the sampling work for profiling (this may be as a regulated use or through direct customer consent).

As Smart meters are rolled out there will be an ongoing requirement to collect such data to keep profiling data up to date. This need will persist for as long as profiling and non half-hourly settlement continues. If this data could not be sourced from smart metered customers, the overall accuracy of the profiled solution would be diminished. This would in turn impact the accuracy of Suppliers' wholesale settlement bills (and Distribution and Transmission charges which use the same data feeds). Inaccuracies in these areas would inevitably increase volatility in these charges and this would impact customer's bills.

Furthermore, ELEXON require aggregated information for designing the profile samples. This would normally be in the form of frequency distribution data (Customer Counts v Size of Customers by consumption) for each distribution business region. This data is also used for weighting the profile samples. This requirement would need to be maintained and information provided by DCC if registration and/or aggregation is undertaken by the DCC in the future. Again, in order to maintain the accuracy of wholesale and retail settlement, access to this data is paramount.

## ***The need for flexibility in defining data uses***

It is important to ensure there is suitable flexibility in the way that regulated uses of smart metering data are defined and managed. It is likely, indeed it is expected, that smart metering will be a catalyst for the evolution of the energy markets which will be underpinned by new data uses. It is therefore important that changes to market



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rules can be given effect in a timely manner. For this reason we recommend that the detail relating to the granularity of data required to fulfil regulated duties is governed through the mechanisms that support the licence obligations and are subject to appropriate change mechanisms. The Smart Energy Code (SEC) would be the logical home for such detail, any changes to the data access rules would be subject to the SEC change processes and should require Ofgem approval. The SEC could specifically state that, where a change impacts the data access rules, the consultation process shall include the Information Commissioner's Office.

## ***The future of wholesale market***

ELEXON has been working with the industry in undertaking a review of the profiling and settlement arrangements over the past year and half. Recently we focussed on the market for domestic and smaller commercial customers (currently Profile Classes 1-4). This is to ensure the wholesale market arrangements remain efficient, effective and economic in a smart metered world. We are looking to optimise the settlement arrangements for the benefit of consumers and industry and help to reap the benefits of smart metering.

Whilst metering in this sector has historically been settled on Non-Half-Hourly (NHH) meter advances and profiling, we believe the time is right to consider the impact of smart metering and the emergence of enhanced data processing capabilities. We also want to identify any improvements or opportunities for our customers (e.g. Suppliers and Distributors), particularly relating to HH settlement.

We have already undertaken a Cost Benefit Analysis (CBA) of mandating HH settlement for larger commercial customers (Profile Classes 5-8) who are having their meters replaced with Advanced meters. This CBA concluded that there were significant benefits for mandating HH settlement, but that the barriers of HH Distribution Use of System (DUoS) charges need to be addressed and work is underway in this area.

We recently consulted on mandating HH settlement for all customers who will have smart meters. Although the responses showed that it was too early to provide costs and benefits for this sector of the market, we still believe that the 'right way' is to use the half hourly data recorded by the smart meter instead of periodic meter advances which are converted to estimated HH values using profiles and will help ensure we have the right (least cost, most effective, accurate) 'meter-to-bank' process. Further work is underway in this area. We have engaged closely with the Ofgem Smarter Market's team and we would welcome ongoing dialogue with DECC's Smart Metering Implementation Team.

If you would like to discuss any areas of our response, please contact me on 020 7380 4337, or by email at [chris.rowell@elexon.co.uk](mailto:chris.rowell@elexon.co.uk).



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Yours faithfully

**Chris Rowell**  
**Smart Programme Director**



## A call for evidence on privacy and data access

### Question 2

To what extent would different rules for access to data between suppliers and third parties be expected to impact on the development of an energy services market (in terms of product and tariff innovation and / or entry to the energy market by third parties)? What are the particular data uses to which these concerns apply?

All data controllers will need to adhere to the Data Protection Act for data they have a 'right' to access, regardless of whether that right is through direct customer consent or as a regulated use. The DPA is clear that data should only be collected at the granularity required to fulfil the purpose for which it is collected and only used for the purpose for which it is collected. As a result Suppliers and Network Operators should only be collecting data for purposes they are permitted to do so under a regulated duty and all other data uses should have the same access 'rights' regardless of whether it is a Supplier or any other third party collecting data.

Therefore it would appear this is really a question of how compliance is managed? The programme can be reasonably expected to manage data access and monitor compliance where data is accessed through the DCC or collected under a regulated duty. The SEC should contain, as part of its assurance framework, mechanisms for monitoring compliance and a series of management tools to address non compliance, based on the seriousness of the non compliance. This can operate in parallel with the work of the ICO.

Any data misuse for data collected outside of the 'smart metering system/DCC' (e.g. provided by a consumer from their own records) cannot be expected to be addressed by the Programme or the SEC regime and should be managed by the ICO.

The development of 'sector specific' guidance could assist in informing any data controller of consumption (or any smart metering) data, such a document could be developed collaboratively between all potential data controller types, consumer groups and the ICO.

### Question 3



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Are there any data uses, apart from those set out below, where the arrangements for access to data could have an impact on the benefits of the programme. How does this analysis differ for the gas market?

We highlighted in our covering letter that electricity settlement requires half-hourly data from a representative sample of customers to be provided to support the profiling process. If necessary this should be specified as a regulated duty on Suppliers to ensure they can continue to support the settlement process by providing a selection of their customers into the profiling sample as requested.

To protect the future delivery of benefits associated with smart metering the programme needs to ensure revisions to data access rules for 'regulated uses' are flexible (e.g. do not define granularity of data collection in licences ). We have discussed this further in our covering letter.

We make no comment on differences with the gas market.

## Question 5

Should theft management be considered a regulated duty for which suppliers should have access to a certain level of smart metering data? What level of data would be required and how would this be used to manage theft? Please provide practical examples.

Theft management is an issue for consumers as well as Suppliers and networks. The theft of energy leads to increased costs for all consumers. The settlement processes require that all energy is accounted for and any missing or misallocated volumes are recovered through smearing the unallocated volumes across all non half hourly suppliers. Please note changes are being progressed to allow such adjustments to be additionally applied to the half hourly sector of the market. Unallocated energy in settlement arises not only from theft but from issues such as metering errors, line loss factor and profiling estimates and issues with unmetered supplies. These factors are likely to need to be taken into account when determining the gross level of theft.

It is reasonable to expect that a network or supplier should be able to drill down to a specific metering system where theft is suspected and that a series of triggers could be described that may allow for such investigation to occur (e.g. anomalous consumption



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patterns over a defined period).

## Question 6

Does data need to be collected from all customers all of the time, for theft management, or could there be a trigger for accessing more detailed data (for example where theft is suspected)?

Our experience in monitoring settlement across a GSP Group is that only gross errors will be detected. To detect theft at a domestic level is likely to need monitoring and comparisons at levels well below the GSP Group or Distribution System – potentially at the substation feeder level or below. Detection would then be dependent on aggregation of individual metering systems to allow comparisons with feeder flows: requiring knowledge of system topography and data on unmetered and non smart metered supplies. Using data measured over extended periods (e.g. monthly energy volumes) would reduce the processing burden and where discrepancies are detected could trigger a more detailed investigation. Discussions with our service provider Logica have demonstrated how such techniques are currently being applied to good effect in the water industry.

As noted above, it is reasonable to expect that a network or supplier should be able to drill down to a specific metering system where theft is suspected and that a series of triggers could be described that may allow for such investigation to occur (e.g. anomalous consumption patterns over a defined period).

## Question 7

What level of take-up of time-of-use tariffs could be expected under different scenarios for access to data? What information is needed to design time of use tariffs? In particular would sample or anonymised data be sufficient?

Suppliers are best suited to respond to what data is required to design time of use tariffs. We simply note that you need a record of the energy volumes associated with distinct periods such that the correct charge can be applied to the volumes used in each period. It is possible to use sample data to construct generic tariffs. However to be truly innovative for a specific customer, greater detail on their energy usage patterns would permit greater tailoring of tariffs. Presumably a customer wishing to investigate would



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be willing to permit the appropriate data access.

We note the following with regards to the data requirements, once a customer is on a time of use tariff and a Supplier wishes to ensure their customers can be settled according to the tariff offered:

1. Non-half hourly ToU tariffs are likely to be crude as settlement can only allocate data to block periods of the day (varied by season and day-type). Settlement would require feedback on time of use for tariff registers if they are to be switched dynamically.
2. The shorter the read period the more accurate the allocation in settlement. Issues with NHH ToU tariffs may impact on the benefits passed to customers on TOU tariffs as settlement allocation errors will be socialised across Suppliers within a distribution region.

We continue to assert that ToU tariffs are best supported by adopting a HH settlement solution.

## Question 8

Do you agree that individual half-hourly data is not currently required for suppliers to meet their obligations in relation to settlement? Over what timescale are any changes to settlement likely to take place and what might the implications be in terms of data requirements?

Half hourly data is currently only required for premises above 100kW and where a customer has elected to be settled HH. Furthermore, ELEXON is currently processing Modification P272 which seeks to extend the HH mandate to Profile Classes 5 to 8 (medium to large non domestic customers). A report will be provided to Ofgem for their determination in November 2011.

*Need for Half Hourly data to support Profiling:*

As we highlighted in the covering letter, half-hourly sample data is required from Suppliers to meet their obligations under the BSC in relation to the profiling samples. Unless we move to full half hourly settlement encompassing the whole market we will need to maintain (and possibly extend) the profiling processes to maintain the accuracy of the non half hourly settlement processes.





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## *Long Terms Changes to Settlement:*

The Settlement processes will need to evolve as smart metering is rolled out and consumer behaviours change to ensure the meter to bank process remains appropriate. Timescales for more extensive changes to settlement such as moving domestic customers to half-hourly settlement are also being addressed by ELEXON through a current industry consultation. Subject to the appropriate costs benefit analysis it may be that all customers could be settled half hourly in future. In this case we would expect suppliers to have access to the same data that is used for settlement to allow them to validate their settlement liabilities.

ELEXON may require access to half-hourly 'export' data for customers that have Micro-generation. This data may already be collected but not settled, as under the current Feed in Tariff Scheme (FiTs) as there is no obligation to register such export for Settlement. The export is 'spilt' onto the distribution networks and as such impacts Settlement calculations. As the uptake of FiTs increases it is likely that ELEXON would require to collect this data for modelling and/ or Settlement purposes.

## **Question 13**

[Do you consider that use of data by network companies to support them in maintaining an efficient and economic network should be considered a regulated duty?](#)

Yes, the networks currently rely on metering data from Settlement and Suppliers to confirm usage on their network and assess future requirements.

The network companies would continue to receive the data that they currently get from settlement but it is recognised that more granular data would potentially be available after the installation of smart meters.

Aggregated half-hourly data could be a minimum requirement for maintaining an efficient and economic network. Again, data from smart meters will need to be married up with registration or other demographic data relating to the customer to facilitate any aggregation. Aggregated data may be needed by distribution asset type (e.g. Low Voltage) and other levels of granularity.

## **Question 15**

[Would suppliers be expected to advise consumers of network company usage of data](#)



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given network companies do not have a direct relationship with customers?

If the use of such data by networks was a regulated use this may not be necessary. However in the interests of transparency it may be prudent to ensure consumers are informed of known data uses, this could include general references in the terms and conditions of customer to note that energy networks use data collected from metering systems. Additionally there is an opportunity to clarify how data is used by industry in any privacy charter or guidance note that may be developed.

## Question 18

What current and future technical options exist for energy consumption data minimisation / privacy enhancing technologies? How might aggregated or anonymised data be provided in practice? Would this imply additional services to be provided by DCC?

There is likely to be a rich source of data from smart meters, however as this is not held centrally it is likely that trying to share and marshal this data will be more costly than if the data was captured and stored centrally. Technologies exist that can carry out computations within the meter or elsewhere, however this adds incremental costs to the meter and becomes complex if there is different meter functionality across the market. The evolution of a smart grid strategy will require careful consideration of how data is stored and accessed to ensure the rules we develop today do not complicate or frustrate the smart grid opportunities.

The DCC could provide aggregation or sampling services provided such aggregation or sampling can be defined. This could be facilitated by central registration data.

Additional, registration data relating to each metering point could be added to the existing registration requirements to facilitate more agile response to data requests from the DCC. This could raise additional privacy issues depending on the type of information held within the registration database (e.g. address).

## Question 20

What is the most effective way to set out any sector specific protections around privacy (e.g. licence conditions or other alternatives)?

It would seem onerous to put sector specific protections within the licence. As these are



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likely to require further explanation and detail it would appear to make more sense to place such protections in the Smart Energy Code.

In advance of the mandated rollout, early protections could be contained in interim documents. For example a Privacy Charter may apply in advance of the mandated Rollout, this may build confidence in industry practices. This is important as any poor consumer experience during Foundation may damage the success of the roll out.

## Question 23

What sort of arrangements would provide an appropriate balance between providing ease of access for consumers seeking to sign up to new services and adequate protection for consumers' data when accessed via DCC? Do you have any suggestions for alternative approaches?

Users who access data via the DCC, acting upon instruction from the customer, should be required to accede to the SEC. Appropriate access and security obligations can then be applied to the user and fair payment recovered for use of DCC services. As part of the SEC assurance regime users could be audited on their use and monitored to ensure they only access data they are permitted to. DCC will need to keep a register of authorised users. Misuse of DCC services could be managed by the SEC Panel under the assurance framework with a range of corrective mechanisms to address non compliance (e.g. ranging from temporary suspension of access, restriction of access to new meter points through to expulsion from the SEC). Additionally data breaches can be reported to the ICO to deal with.

Outside of the DCC consumers can provide access to data from the metering system as they see fit but the third party will be governed by the agreement with the consumer.

## Question 24

Are there other issues or options that the programme should be thinking about for the Foundation Stage or for non-domestic customers to facilitate access to data?

### *Impact on Profiling*

The ELEXON profiling sample will be directly impacted by the roll out of both Advanced and smart meters, as customers within the sample will have their metering replaced. This will affect the accuracy of profiles for both domestic and non-domestic customers



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unless we can guarantee that those customers can remain within the profiling sample. It may be prudent to allow Suppliers to retain data access as a regulated duty, where this is the case.

For more information on our response, please contact:

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