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ENERGY NETWORKS ASSOCIATION RESPONSE TO –

Smart Metering Implementation Programme: A call for evidence on privacy and data access (August 2011).

October 2011

Responses to consultation questions:

1. Please submit any further evidence, such as surveys or consumer research, regarding privacy issues and smart metering. In particular is there evidence available about the effects of the availability and aggregation levels of more granular data (for example daily)?

As mentioned in the accompanying letter, please refer to the enclosed detailed Privacy Impact Assessment (PIA) as Appendix 1 to this response. This report has been undertaken by Engage Consulting Ltd. on behalf of the Energy Networks Association and its members. The report includes a summary of comments received by stakeholders surveyed as part of the study. ENA members have been substantially involved in the production of the report and Appendix 1 therefore represents the current views of our members in this topic area.

In general, consumers understood and supported the need for Network Operators to have access to data necessary to perform their regulated duties. Such regulated (and statutory) duties include an obligation to develop and maintain efficient, coordinated and economical systems of electricity and gas distribution. The ability to uphold such obligations - particularly during a transition to a low carbon economy where, as a consequence of the Government's Low Carbon Transition Plan and Renewable Energy Strategy, electricity networks are expected to experience higher (and two-way) power flows - and where data from Smart Metering Systems would assist electricity network operators to uphold such obligations for the benefit of consumers as a whole, then such data should be made available. This would, for example, include aggregated half-hourly consumption data.

As network operators require aggregated consumption data to perform their regulated (and statutory) duties, this should alleviate concerns over privacy - provided that robust audited processes are developed for ensuring that consumer-specific half-hourly consumption data used for aggregation is properly protected.

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?

The Energy Networks Association believes that UK businesses who are authorised Smart Energy Code (SEC) users should adhere to the same rules for access. By approaching the market in this way a 'level playing field' will be maintained and will increase customer choice and access to services. If Government introduced different SEC rules, or processes (not process steps), that were adopted, this could erode the Security of the DCC/metering system that is part of the rationale for the access being via DCC in the first instance. The SEC should include relevant and appropriate obligations on all parties in relation to the security and privacy of the end-to-end smart metering infrastructure, putting in place robust governance processes with appropriate sanctions for non-compliance. With appropriate

sanctions in place (i.e. removal from the SEC) this should prove to be a sufficient incentive on all parties to ensure compliance.

3. 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?

Future services which will become part of the everyday domestic market such as demand response, which in future could be based on the aggregated responses of many domestic consumers and micro-businesses, could form the basis of fast and short term operating reserve ancillary services. This might be particularly valuable for transmission system residual balancing as well as for local distribution network constraint management in a future where electricity consumption is expected to increase as a result of electrification of heat and transport and where electricity production becomes increasingly dependent on variable (and to a considerable extent unpredictable) wind generation.

By its nature, the gas market is not subject to the combined impacts of intermittent production (and forecast errors) and energy storage limitations that the electricity market will be increasingly exposed to. The need for a more granular level of data is much more limited.

4. What types of energy services and energy advice could be provided by the market (by suppliers and/or ESCOs/potential new entrants) that requires access to specific levels of data?

What level of data granularity (frequency, time-lag) are needed to provide such services and what is the potential impact of these services in terms of percentage energy savings?

Please provide empirical examples and explain the basis of any assumptions and distinguish between gas and electricity.

The Energy Networks Association have been working closely with DECC to determine the data sets, volumes, frequencies and latency (speed) requirements in respect of data from the Smart Metering System. This data availability will be necessary for ENA members in future to properly manage their networks in support of fulfilling their statutory obligations and distribution license standard conditions. Following a number of face to face discussions and tele-conferences between ENA members and DECC, a summary data sheet indicating these requirements has been prepared and retained by DECC. We assume this data sheet will be referenced as part of the consultation process, particularly in consideration of the question above, however if this information is not readily available please contact [REDACTED] at the following address: [REDACTED]

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.

It is clear that theft management is currently a regulated duty for energy suppliers. There are also safety and financial implications associated with identifying theft. The Smart Metering Equipment will be fitted with tamper alerts in order to identify possible instances of theft. In addition a thorough explanation to customers regarding the availability of this information could help act as a deterrent to many customers. Prevention is better than cure in this instance and if consumers are clear about the access to this type of data, it is likely that this will reduce theft substantially.

With respect to ENA members, the regulated duties of network operators include an obligation to develop and maintain efficient, coordinated and economical systems of electricity and gas distribution it follows that network operators should have access to the data necessary to fulfill that obligation, including data to enable them to identify those parts of their networks exhibiting higher than normal losses so that remedial actions can be taken to address inefficient and uneconomical operation.

Additionally, it might be possible from studies of half hourly demand patterns for suppliers to determine suspicious energy usage behavior, for example abnormal consumption patterns and/or low overall volumes of energy usage. As well as identifying examples of possible theft of energy, such analyses might also lead to the discovery of illegal activities which depend on high levels of energy usage (and which therefore perpetrators have an incentive to not expose by revealing true energy usage) such as cannabis farms.

It follows that both network operators and suppliers have a legitimate need to access, as a regulated duty, such data as is necessary to identify technical non-technical losses (including theft).

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)?

ENA believes that network operators would need access to energy profiles from as many metered customers as possible in order to determine losses accurately. In terms of suppliers being able to identify suspicious behavior, it should be possible to establish energy usage thresholds to highlight suspiciously low consumption so that arrangements to access more granular or detailed data can be put in hand.

Illegal abstraction of energy can take place on gas service pipes or electricity service cables upstream of the consumers premise. In such circumstances, a meter tamper alert would not be triggered and the supplier would be completely unaware the theft is occurring. We believe that this type of theft would become more likely if wider access to data was not available as consumers looking to steal energy would learn the least problematic route.

In addition peaky load profiles will give rise to higher levels of losses than relatively smooth or flat load profiles for a given level of energy delivered by a given electrical conductor. It follows therefore that access to half-hourly profiles is necessary in order to derive the daily load shape (i.e. half-hour by half-hour) and hence the expected level of technical losses.

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?

It is likely that time of use tariffs will become a significant element of demand side management in consumer's homes, at least in the short to medium term following the smart meter installation. If used effectively ToU tariffs will help change consumer behavior and offset local load peaks. Higher demand for electricity as a consequence of electrification of heat and transport will give rise to additional investment in electricity distribution and transmission networks and additional electricity production capacity.

It is envisaged that this electrification of heat and transport will be largely in the form of electric vehicles and heat pumps. Both of these applications have the potential to give rise to large increases in electricity consumption at existing times of peak demand (i.e. in the early evening on winter weekdays) since a natural behavior pattern for typical consumers

would be to recharge electric vehicles and turn up room thermostats on returning home from work.

This has clear implications for electricity distribution and transmission network capacity since such networks are necessarily designed to accommodate peak electricity flows. Taken in conjunction with the need for additional electricity production capacity as described above, the implications for investment in the end-to-end electricity supply chain are onerous.

Persuading consumers to deviate from their natural behavior patterns will require incentives in the form of more (marginal) cost reflective tariffs. The primary purpose of such tariffs would not be to encourage energy saving per se (though that might be an important secondary benefit) but to encourage consumers to switch or shift energy, usage where practicable, to times of day where the impact on both electricity production capacity, and electricity transmission and distribution network capacity, would be lessened, or indeed zero. Such tariffs are therefore likely to be in the form of time-of-use tariffs that provide very clear incentives for customers to avoid discretionary consumption during daily peak demand periods. Such tariffs have the potential to significantly reduce the cost of low carbon transition.

In terms of the data required, and design and optimisation of time-of-use tariffs, it will be important for both suppliers and electricity network operators (who have a need to design-in appropriate marginal cost signals to energy and use of system tariffs respectively) to have access to half-hourly profiles in order that the impact of time-of-use tariffs can be monitored.

It follows from the above that while access to half-hourly consumption data is essential for both suppliers and electricity network operators such data need not necessarily be retained as half-hourly data on an individual consumer basis. Electricity network operators would need to retain half hourly consumption profiles for network monitoring and demand management purposes, but only at an aggregated level (i.e. groups of consumers); and while suppliers would need to retain consumer specific consumption profiles for billing purposes, this need only be at the summated (for each time-of-use time band) level.

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?

ENA have no additional comments to make on this question

9. How far would aggregated or sample data provide suppliers' with what they need in the area of wholesale hedging? Please provide examples of how the data would be used and where possible quantify potential benefits and costs.

ENA have no additional comments to make on this question

10. What level of data would be required and how would this be used to manage debt? Please provide practical examples.

ENA have no additional comments to make on this question

11. How would suppliers envisage using daily data to support debt management and what evidence do they have to support claims of additional savings that could be achieved with access to daily data as opposed to less frequent data?

ENA have no additional comments to make on this question

12. How could smart metering data be used to identify and protect vulnerable consumers? Should such activity be considered a regulated duty and are any license changes needed to create particular duties on suppliers in this area?

In addition to monitoring self-disconnection, smart metering information can be used to help identify consumers who may have suffered a power outage due to a network fault or main fuse failure. This might be particularly important during periods of severe or very cold weather, or (depending on the nature of vulnerability) in hours of darkness. Consumers who have dependency on medical equipment (for example kidney dialysis or assisted breathing equipment) might have a specific vulnerability in the event of any unplanned power outage.

The ENA has therefore called for the IDTS for Smart Metering Equipment to include functionality that would enable:

- (a) a smart meter to be polled in order to check energisation status; and
- (b) the smart meter to signal a loss of supply

The benefit of (a) would be that under severe weather conditions where networks can suffer high volumes of damage due to falling tree branches etc. it would be possible to proactively check supply energisation at properties where vulnerable (or special needs) customers are known to reside.

The benefit of (b) would be in the event of a loss of supply to a property where it is known that a vulnerable customer resides, it would be possible to take immediate action, without, for example, the customer having to make a telephone call (which might in some circumstances be difficult impractical for a customer with a particular disability or dependency).

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?

ENA Member companies have both statutory and regulated duties to develop and maintain an economical, efficient and coordinated system of electricity and gas distribution. Maintaining this regulated duty in a smart world will help ensure that efficiencies are derived from the use of data in order to maximise the benefit to customers.

Electricity Network Operators will need to respond to changing requirements as more distributed generation is connected to their networks and as individual consumer load patterns change and become more diverse through take up of electric vehicles and heat pumps.

As previously stated ENA have commissioned a Privacy Impact Assessment in order that DNOs can understand any consumer concerns over the use of data for this purpose and the measures necessary to protect that data.

14. Do you agree with the requirement for such data to be anonymised or aggregated wherever possible, and how should this be monitored?

Wherever possible data should be anonymised or aggregated though in certain situations where this is not possible to achieve, Network Operators should be able to access data from general metering points rather than information regarding individual customers. It is important that data of sufficient granularity is available to gas and electricity network operators to support the operation of all future network planning and operational

requirements. Monitoring of data made available to network operators could be undertaken by DCC, following a predetermined set of rules, to ensure that common reporting practices are in place.

15. Would suppliers be expected to advise consumers of network company usage of data given network companies do not have a direct relationship with customers?

ENA believe that in practice this risk will be managed by extending existing controls to cover smart metering data issues and thereby compliance with the Data Protection Act. We can therefore see no purpose in instructing suppliers to advise customers regarding network company use of data derived from smart metering equipment. In addition information provided by suppliers regarding DNOs use of smart metering data could cause customer confusion as the majority are not aware of the split between distribution companies and energy suppliers.

It may be sensible to give consideration to network operators' use of data and their arrangements for ensuring data privacy and security to be described in an industry Privacy Charter which would cover data access and usage of consumer data by all parties.

16. Are there any alternatives to a basic opt-in or opt-out approach to consumer choice such as some form of prompted choice? What are the practical and consumer protection considerations in relation to different options (for example when and how)? From a consumer perspective what alternative approaches and vehicles (for example letter, email, phone) to seek customer consent are there?

ENA believes that 'regulated duties' must as a minimum allow all regulated industry participants to have access to such data as is necessary to maximise consumer benefits consistent with the delivery of low carbon transition. Where data is not considered to provide information necessary to undertake regulated duties, but which has the potential to deliver consumer benefits and affordable low carbon transition, then an opt-out approach should be pursued. The opt-in option should apply in respect of a consumer's right to decide whether they wish to receive marketing information or approaches from companies regarding energy related services or products.

It is worth pointing out that to achieve the objectives of the roll out programme, the installation of Smart Meters is not just a mechanical exercise, it is very firmly a human behavior issue. However this 'discussion' with the consumer takes place it should be simple, well explained and produced in a way which helps people to 'buy in' to the project as a whole. Any complexity of the explanation or difficulty for the consumer to understand could seriously affect the integrity of the overall programme.

17. What evidence is there of likely take-up rates that could be achieved through different approaches to consumer choice?

ENA support DECC's observations regarding behavioral science but we also believe that the great majority of consumers are sufficiently wary not to be persuaded to agree to something which they have reservations about or are lulled into agreeing access to data which they are uncomfortable in sharing.

We would also suggest (and we believe that behavioral science would support our view) that if presented with an opt-in rather than opt-out choice, consumers may become unnecessarily suspicious and concerned that there might be hidden implications of providing access to data. Whereas an opt-out approach would be more consistent with their instinct that providing such access should be generally to their benefit.

As identified in 17. above ensuring the consumer has clear information, are supported and educated effectively about the roll out programme and their individual behaviors are taken into account is vital to the success of the programme and to customers buying into the whole process. ENA members would be happy to work with DECC, suppliers and others to ensure that whatever approach is decided upon is made as effective as possible. The customer at the end of the day is critical to the success of the roll out, and without behavioral change the programme becomes purely a mechanical exercise of installing meters.

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?

ENA have no additional comments to make on this question

19. What parts of the privacy policy framework do you think should be delivered by regulation and why?

ENA believe that it may be necessary for the industry to produce a Privacy Charter that would demonstrate clearly how data is to be used and the provisions that would be put in place to ensure privacy and security of private data.

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

ENA have no additional comments to make on this question

21. What practical options for authentication would provide the right balance between allowing easy access to consumer data in the home while providing the necessary privacy protection? Are there any other issues or options that the programme should be considering in developing the approach in this area?

ENA members support the view that protecting the security of the smart metering system is of paramount importance – to the extent that this must take precedence in any consideration of the benefits to customers of being able to obtain Information from the smart metering system other than via the IHD. For example, any arrangements which resulted in a compromise to cyber security would be unacceptable, since cyber attacks could have very serious consequences for the industry and consumers alike.

ENA have recently published a Smart Grid Cyber Security report and have established a Cyber Security group to oversee all issues within this space. This group will cover all smart applications of the smart grid including the network operator interface with the Smart Meter.

[REDACTED]

22. Are there other issues that need to be considered to make using the HAN a viable route for access to data in the home, from either a process or consumer perspective?

ENA believe that the wider aspect of the 'Smart Home', ie home automation, smart appliances, enhanced IHD's, remote equipment control etc will help the consumer buy into the 'smart' concept and ultimately make full use of the ability for wider energy control in the home. We believe that this area should be significantly further explored than is currently the case.

Electric vehicle charging and heat pump operating cycles would be ideal applications for controlled switching or for responding to tariff price signals. So called 'wet' appliances such as dish washers, tumble dryers and washing machines would also be adaptable to 'smart' operation, helping consumers to avoid higher electricity unit charges associated with peak demand periods.

ENA and ERA are currently working together to understand the opportunities for Smart Demand Side Management for both the customer and the industry. This work is currently ongoing and it is believed that outputs from this work will be available for discussion with DECC in the early part of 2012. ENA members would welcome further dialogue with DECC in this area which, as has already been stated, is fundamental to the overall success and acceptance of the Smart Meter concept by the consumer.

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?

A balance needs to be struck between ensuring that Security and Privacy are maintained, and that there is a minimal amount of effort required by consumers. Arrangements must also allow for the energy services market to develop, ensuring there are no perceived barriers to market entry through complex or complicated processes.

Allowing accredited or licensed third parties to have access to consumer data in order to be able to offer new consumer or industry ancillary services would have to be carefully managed and controlled. However if managed appropriately benefits could ultimately flow through to consumers in terms of lower electricity prices and potentially increased security of supply.

Given appropriate governance as outlined in the consultation, a requirement to be a signatory to the Smart Energy Code would be an important and effective provision in controlling third parties operating in this space.

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?

Energy Networks members believe that the Foundation Stage is of great importance in terms of refining processes and systems in readiness for mass roll out commencing during 2014 and DCC go-live. It is of particular importance that early and effective progress is made in developing WAN and HAN communications standards and ensuring both technical and commercial interoperability of installed smart meters and communications technologies.

25. Do you have any suggestions as to how the Foundation Stage can be used to further learn about our approach to data access and privacy?

As part of the Foundation Stage preparation, it will be essential to embark on a carefully considered programme of customer engagement so that customer awareness is raised, interest is developed and trust (in terms of data security and privacy, the smart meter programme, and the consumer's relationship with the industry in general) is secured.

The development of an industry privacy charter will be an important deliverable during the early part of the Foundation Stage.