

Smart Metering Implementation Programme – Roll-Out Team  
Department of Energy and Climate Change  
3 Whitehall Place  
London  
SW1A 2AW

13 October 2011

Dear Sir

**Smart Metering Implementation Programme: a call for evidence on privacy and data access  
(August 2011) (consultation reference: URN 11D/838)**

UK Power Networks is pleased to respond to the above consultation and provide views on the call for evidence on privacy and data access.

UK Power Networks believes it is important that the privacy and data access requirements in the smart metering framework strike the correct balance for all industry parties between customers' privacy and maximising the benefits of the programme. Ensuring that DNOs have access to relevant smart metering data will be important to ensuring that DNOs are able to continue to efficiently perform their regulated duties, in particular their duty to develop, maintain and operate an efficient, coordinated and economical system for the distribution of electricity.

An approach that is based on appropriate aggregation of potentially sensitive smart meter data, coupled with robust procedures for protecting such data, should allay consumer concerns over protection of privacy. UK Power Networks has been actively engaged in the Energy Networks Association's development of a Network Operator Privacy Impact Assessment, a copy of which we have included as evidential support to our response to this consultation.

We hope that you will find our detailed answers in the Appendix useful and confirm that we have no objection to this letter being published on DECC's website. [REDACTED]

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# Appendix

## **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)?**

Please refer to the attached Privacy Impact Assessment (PIA) undertaken by Engage Consulting Ltd on behalf of the Energy Networks Association (ENA), which includes a summary of comments received by stakeholders surveyed as part of the study. UK Power Networks has played a leading role in the development of this PIA with Engage Consulting Ltd.

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 electricity networks are expected to experience higher (and two-way) power flows – would be facilitated by data from smart metering systems. This would result in benefits for consumers as a whole and accordingly we believe that data such as aggregated half-hourly consumption should be made available.

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 to ensure 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?**

UK Power Networks believes that the development of an energy services market – including a market for ancillary services – will be an important contribution to an economical transition to a low carbon energy economy. New entrants and intermediaries could play a key role in developing new products that could help improve energy efficiency, beneficially modify consumer energy usage behaviour, and leverage the full potential of flexible demand to optimise the whole of the electricity supply chain.

While concerns might arise as a result of a degree of proliferation of companies offering services to consumers: provided such companies are properly accredited and/or licensed to undertake such services and can demonstrate adequate systems and procedures for the protection of private or sensitive data, then such concerns should be alleviated.

In summary, it will be important that privacy and security concerns that can be adequately addressed do not give rise to rules that unduly restrict the legitimate activities of third parties in terms either of their access to data or their interaction with consumers in managing their energy consumption. Unnecessary restrictions on third parties could give rise to missed opportunities for a more economical transition to a low carbon economy and result in higher than necessary energy bills for consumers.

**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?**

Services 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. Such services 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 electricity production becomes increasingly dependent on variable (and to a considerable extent unpredictable) wind generation.

Apart from more effective utilisation of electricity distribution and transmission network capacity, a further benefit lies in the mitigation of suppliers' imbalance risk. Ultimately the development of such services would be beneficial to consumers in terms of being rewarded for supporting such services and in terms of lower costs of electricity production and delivery being reflected in their energy bills.

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 more granular data is therefore relatively 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 require 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 development of an effective responsive demand market will be a major factor in achieving an acceptable cost of low carbon transition. Such a market might be enabled through more flexible time-banded and cost-reflective tariffs, but in order to be fully effective the market will require a degree of interaction between the consumer and the service provider.

The ENA has 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 that will be necessary in future for electricity network operators to properly manage their networks in support of fulfilling their statutory obligations (including distribution licence standard conditions). Following a number of discussions between ENA members and DECC, a summary data sheet indicating these requirements has been prepared and retained by DECC. We presume this data sheet will be referenced as part of the consultation process, particularly in consideration of the question above.

**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.**

Smart metering data will provide many opportunities for improved overall management of the energy supply chain, in particular electricity and gas distribution. Access to half-hourly consumption data, for example, would enable electricity network operators to make more accurate assessments of losses by assembling aggregated profiles for specific sections of their networks and comparing these with energy volumes delivered from the relevant distribution substation over the same period of time (taking due account of unmetered supplies such as street furniture). Such losses will be both 'technical' (i.e. due to the heating effect on conductors of passing an electrical current) and 'non-technical' (i.e. due to both inaccuracies in settlement data and theft) in nature. Comparing the derived level of overall losses with the expected level (from modelling) would highlight sections of network that were exhibiting high levels of non-technical losses.

Since 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 fulfil 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 behaviour; 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 and 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)?**

It will be clear from our answer to question 5 above that network operators would need access to energy profiles from as many metered customers as possible in order to determine losses as accurately as possible.

Moreover, while total losses could be derived by comparing total volumes over a period of time (not necessarily half-hourly profiles), it is only by comparing aggregated time series data at a high level of granularity with respect to frequency of the time series data that accurate assessments of technical losses can be made (and hence the contribution of any non-technical losses to the whole derived). This is because losses due to current flows in conductors have a quadratic relationship with that current flow. In mathematical terms,  $L = I^2R$  (where  $L$  is the losses in watts,  $I$  is the current in amperes and  $R$  is the electrical resistance of the conductor in ohms).

It follows that 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 further 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.

In terms of suppliers being able to identify suspicious behaviour, 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 developed.

**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?**

UK Power Networks believes that in order to deliver low carbon transition at an affordable price to customers, the development and consumer take-up of time-of-use tariffs is essential. Indeed we see this as being possibly the greatest benefit to be gained from smart meters and an area that could have been given greater attention in the original impact analyses to establish the overall business case for the smart metering programme.

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.

Moreover, the investment in new forms of low carbon (including nuclear and fossil fuelled generation with CCS) and renewable electricity production necessary to achieve carbon emission reduction targets, together with the investment needed in non-intermittent generation to establish a higher safe level of plant (capacity) margin, will inevitably lead to higher electricity market prices. Furthermore, studies have indicated that wind output variability will lead to significant volatility in market spot prices.

The manifestation of 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. between 1700 hours and 1830 hours on winter weekdays) since a natural behaviour 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.

However, both electric vehicle charging and electric home (space and water) heating are potentially very flexible forms of electricity consumption in that the time of day of usage is capable of a great deal of manipulation, and certainly to a sufficient extent to very significantly reduce their contribution to daily electricity peak demand.



Persuading consumers to deviate from their natural behaviour 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 and have the potential to significantly reduce the cost of low carbon transition.

In terms of the data required and the 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.

In order for suppliers to enable consumer charges for electricity consumption to be reconciled within the specific time bands pertaining to the tariff, it would be necessary only to summate individual consumer consumption over each separate time band.

For settlement purposes, suppliers would of course aggregate the data to specific half-hourly time bands. UK Power Networks believes that half-hourly settlement using actual measured half-hourly data has such obvious advantages for all market players over longer periods of settlement using super-customer profiles that the universal support for half hourly settlement is inevitable.

It follows that while access to half-hourly consumption data is essential for both suppliers and electricity network operators (and with reference to question 4 above, new third parties providing energy services), 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?**

Since settlement is currently built around super-customer profiles (i.e. those profile customers who will be generally eligible for a smart meter), access to actual half-hourly consumption is not necessary. However, UK Power Networks is aware that super-customer profiles do not necessarily provide an accurate representation of true demand profiles. This is very clear from the levels of losses derived from current settlement, which can vary to an extent that is beyond any possible scientific explanation; indeed losses have even been known to have negative values, which is impossible.

Even today, there would be clear benefits from (more accurate) half-hourly settlement, but given the inevitable changes to daily consumption patterns that will materialise as a consequence of increasing penetrations of electric vehicles, heat pumps and micro-generation, existing super-customer profiles will become increasingly inaccurate and unsatisfactory. It follows that access to half-hourly consumption will be essential – but noting that such data can be held in aggregated/summed form, as described in our answer to question 7.

UK Power Networks believes that the industry will move to half-hourly settlement as soon as practicable.

**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.**

For the reasons outlined in our answer to question 7 above, we believe suppliers will have an increasing need for wholesale hedging as more variable and less predictable forms of electricity production (such as wind generation) make an increasing contribution to national electricity production capacity. Indeed we believe that suppliers will look to devise new tariffs, not dissimilar to the time-of-use tariffs described in our answer to question 7, but with varying prices determined by forecast (for example, day-ahead) wind generation output.

UK Power Networks believes there is a risk of greater volatility in imbalance charges and in the differential between system sell and system buy price. In terms of quantifying the impact and benefits, UK Power Networks would point to the work undertaken by Poyry for DECC during 2010 and released into the public domain in August 2011: ‘Potential Role of DSR (demand side response) in Balancing the Electricity System in Future’<sup>1</sup>.

Effective demand side response should in future be possible through the aggregated impact of consumer load managing, potentially using the smart metering equipment (including the WAN and HAN). Such a response will need to be carefully managed in terms of magnitude and duration and hence monitoring the degree of response (and determining payments for providing such ancillary services) will depend critically on access to half-hourly consumption data.

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

UK Power Networks recognises the need for robust debt management procedures that are in the interests of both suppliers and consumers. While we would agree that IHDs should help consumers manage their accounts, this facility alone might be insufficient for all consumers who may still fail to recognise the level of debt they are incurring. We believe DECC should carefully consider suppliers’ arguments in this area since it is clearly in consumers’ interests for suppliers to have the necessary information to help consumers avoid building up serious levels of debt.

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[http://www.decc.gov.uk/en/content/cms/meeting\\_energy/network/strategy/strategy.aspx#Potential\\_role\\_of\\_DSR\\_in\\_balancing\\_the\\_electricity\\_system\\_in\\_the\\_future](http://www.decc.gov.uk/en/content/cms/meeting_energy/network/strategy/strategy.aspx#Potential_role_of_DSR_in_balancing_the_electricity_system_in_the_future)

**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?**

We have no strong views on the optimum frequency of accessing data in order to support debt management other than that we can see no reason for suppliers to incur costs of more frequent access than they feel necessary to provide the necessary level of consumer support.

**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 licence changes needed to create particular duties on suppliers in this area?**

There are different categories of 'vulnerable' consumer who might benefit from the functionality of the smart metering system.

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 depend on medical equipment (for example, kidney dialysis or assisted breathing equipment) might have a specific vulnerability in the event of any unplanned power outage.

For these (and other) reasons the ENA has 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 that in the event of 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 or 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?**

Network companies already have both a statutory and regulated duty to develop and maintain economical, efficient and coordinated systems of electricity and gas distribution.

As the consultation notes, 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. Having access to data from smart meters will be an important part of network companies' continued compliance with this obligation.



Our response to question 7 above summarises the anticipated impact on distribution networks of these new low carbon technologies and the ways in which monitoring of half-hourly consumption (and voltage) data would assist network operators in performing their statutory and regulated duties. In general, half-hourly consumption data would be aggregated such that it formed an aggregated profile for a particular section of a low voltage network. The data would hence be both aggregated and anonymised (since no individual consumer details would be captured in the aggregation process).

As stated in our answer to question 1, the ENA has 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?**

The benefit of half-hourly consumption data to electricity network operators is realised only through aggregating that data so as to construct a half-hour by half-hour electricity demand profile for a given section of electricity network. UK Power Networks therefore agrees that such data can and should be aggregated for network management purposes and that the aggregation process would effectively anonymise the data.

UK Power Networks believes that procedures for handling and aggregating half-hourly data should be subject to documented quality procedures and accredited, and that regular internal auditing of such procedures should take place. UK Power Networks would be happy to share the results of such audits and external quality assurance.

**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?**

UK Power Networks believes that network operators' use of data and their arrangements for ensuring data privacy and security should be described in an industry privacy charter that 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?**

UK Power Networks believes that in order for the smart metering programme to be successful, Government and the industry must work together to raise consumer awareness, gain interest and secure their trust in terms of how the programme will be conducted, how the data will be used, and the benefits that will ultimately accrue to consumers. It would be unfair to consumers to provide them with a choice over allowing access to data without first having explained the consequences of both allowing and not allowing access.

UK Power Networks believes that the Government's Low Carbon Transition Plan will be delivered effectively and affordably only if the potential presented by smart meters is fully realised. In that regard, while UK Power Networks acknowledges DECC's minded to position to define 'regulated duties' narrowly, it is essential to consumers' longer term interests that the industry's ability to support effective and economic low carbon transition is not compromised by too narrow a definition.

UK Power Networks therefore 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 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.

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

UK Power Networks notes DECC's observations regarding behavioural science but also believes that the vast majority of consumers are sufficiently wary not to be persuaded to agree to something which they have reservations about or lulled into agreeing access to data which they are uncomfortable in sharing. We also suggest (and we believe that behavioural 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. Conversely (assuming the purpose of accessing the data was adequately explained) an opt-out approach would be more consistent with their instinct that providing such access should be generally to their benefit.

**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?**

UK Power Networks has explained how electricity network operators would aggregate half-hourly consumption data in order to derive half-hour by half-hour network demand profiles. The aggregation process would also effectively anonymise the data.

Our belief is that the aggregation process will necessarily be automated (each meter would be electronically tagged to a given section of network such that time series half-hourly consumption data would aggregate to derive a half-hour by half-hour network demand profile for that section of the network). If this aggregation service were to be provided by a third party, the smart meter data could effectively be anonymised before being presented for aggregation. For example, if either the DNO or DCC were to be responsible for providing the raw data for aggregation, the third party would simply be presented with tagged half-hourly data sets which need contain no information regarding the name or address of the consumer. A further possibility is that DCC could provide the aggregation service.

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

UK Power Networks believes that the industry has a duty 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 the privacy and security of private data.

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

Please refer to our answer to question 19 above. Also, as stated in our answer to question 14, we believe that procedures for handling and aggregating half-hourly data should be subject to documented quality procedures and accredited, and that regular internal auditing of such procedures should take place.

**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?**

UK Power Networks agrees 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.

In terms of how consumers might have secure access to information via a customer HAN and bridging device, UK Power Networks believes this should be possible using a wireless bridging device and that security would most practically be arranged by means of a secure ID transmitted via a fob (the fob would typically have a six-figure numerical code which would be refreshed at frequent intervals – typically every minute).

**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?**

An issue (or potential benefit) not specifically covered in the consultation is the role that smart appliances could play in helping consumers to take advantage of time-of-use tariffs. Such appliances would either respond to switching signals delivered via the WAN and HAN module, or would respond to changes in tariff price changes, again via the HAN.

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.

**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?**

As stated in our response to question 2, we believe that with appropriate protection measures there should be significant end-to-end system benefits – as well as direct consumer benefits – in 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. All such benefits would 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.

**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?**

UK Power Networks believes that the Foundation Stage is of great importance in terms of refining processes and systems in readiness for a mass rollout 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.

As stated in our response to questions 35 and 36 of DECC's consultation on draft licence conditions and technical specifications for the rollout of gas and electricity smart metering equipment, we believe there should be no restrictions on HAN technologies – at least during the Foundation Stage – provided such technologies are compliant with European or international standards. Indeed this could be helpful in resolving outstanding questions, deriving appropriate standards and practices (which should be captured under the SEC), and achieving consensus on the way forward. Meanwhile, any lessons learned in considering third party access to data in respect of advanced metering systems should be disseminated so that any specific provisions appropriate to micro-businesses can be put in place.

**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?**

Again, UK Power Networks would emphasise the importance of the Foundation Stage in resolving technical and business process issues, proving interoperability from both a technical and commercial perspective, and developing end-to-end testing regimes in readiness for DCC go-live.

As part of the Foundation Stage preparation, it will be essential to embark on a carefully considered programme of consumer engagement so that consumer awareness is raised, interest is cultured, 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.

**UK Power Networks**  
**13 October 2011**