Response to Smart Metering Implementation Programme a call for evidence on Data Access and Data Privacy

Executive Summary

1. We take privacy of customer data very seriously. Customer understanding of what happens to the data derived from smart metering systems will be paramount to building and maintaining customer trust and a major influence on the overall success of the programme.

2. Data access and privacy is not of itself a new issue that has been created by smart metering. However the additional granular level of data that smart meters collect brings with it a challenge for the energy industry to make clear to customers what rights they have in terms of data privacy and access.

3. Suppliers will need access to data to deliver a number of benefits included in the Impact Assessments. The Energy Retail Association (ERA) has sought to quantify the benefits associated with the use of granular, half hourly data. This will include information at a sufficient level for us to balance our wholesale energy positions and to develop innovative new tariffs and products for our customers. We recognise that this is difficult to quantify accurately at this stage, and suggest that we seek to validate with evidence during trials throughout the Foundation Stage.

4. Energy savings, both carbon and cost, are in the national interest. If a customer chooses to opt out from energy savings or if they are very concerned by energy suppliers having access to information from a smart meter they should be able to opt out from collection of half hourly information. This may limit their ability to access the most attractive tariffs or incur high costs from suppliers but should form part of a competitive energy market. It should also be easy for customers to exercise their choices about data use where applicable. Customers should be given the opportunity to opt out when informed about the installation of their smart meters and at any time thereafter. Opportunity for opt out should be made clear and also be easy e.g. it could be exercised via letter, email, text, tick box or possibly even using the installer's hand held terminal at the point of install.

5. Customer choice should not be confused by the right of energy suppliers to undertake their regulated duties which benefit all consumers (e.g. balancing energy production with supply, the identification of theft etc).

6. As part of the development of our products for customers we would expect an approach that would include;
    a. Changes to Principle Terms and Conditions with customers and the potential development of smart metering privacy notices. This could include an annual check of customer preferences; and
    b. Implementation and compliance with a privacy charter,

7. There are already existing arrangements for sales and marketing. We understand the concerns expressed about the potential use of data for marketing purposes but consider that normal business rules would apply.

8. Network companies and other parties should also be able to access and use consumption information to fulfil their regulated duties. An appropriate relationship needs to exist between suppliers and other participants in the industry, which may evolve with the onset of smarter markets. This should not be confusing for customers by creating multiple interface points, therefore supplier hub principles should remain.

9. A wider independent programme of consumer education is needed to help consumers understand the benefits that can be gained from smart meters and how information from those meters is used and protected. We are actively involved with the Energy Retail Association in drafting a Privacy Charter that will provide assurance for customers. However, we recognise that trust is an issue for the energy industry as a whole and therefore this issue would benefit further if it were addressed as part of any wider central programme communication.

Consultation Questions

Q1.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)?

1. We have established a smart metering centre of excellence to deliver high quality experience for customers in the Foundation period. Part of the remit of this team is to analyse issues raised by customers so that we can improve customer experience and apply this learning to our rollout plans.

2. Our records indicate that customers who have contacted our smart metering centre of excellence have not raised concerns over access to consumption data. This complements the Ofgem Consumer First Panel report published July 2011 that customers do not appear to be unduly concerned about suppliers having access to consumption data.

Q2. To what extent would different rules for access between suppliers and third parties be expected to impact on the development of an energy services market (in terms of product tariff innovation and / or entry to the energy market by third parties) ? What are the particular data uses to which these concerns apply?

3. Customers will in the future have an ability to grant access to their data to a number of Authorised Third Parties (ATP's) including network operators and Energy Service Companies (ESCo). It is important to maintain suitable security and privacy controls over access to data and ensure that only ATP's are granted access and that customer consent is achieved before any information is provided. Rules around access for ATP's should therefore be robust to restrict the ability for any rogue operatives to function which would undermine the credibility of smart metering in the eyes of customers.

4. The implementation of Data Communication Company (DCC) services, including centralisation of registration data, should allow for the controlled centralised provision of services for all ATPs including ESCo's and Energy Suppliers. The provision of data services to all by a central independent agent should ensure that an equitable playing field for Energy Services develops.

5. Third parties should therefore have the same full access to the data for those customers who have given consent to sales and marketing as a supplier would have, and therefore not be disadvantaged in offering products and services to that customer.

6. If suppliers are allowed access to half hourly data for the purposes of promoting energy efficiency advice (which is essential in order to realise the full benefits of smart meters) suppliers will have an advantage of being able to proactively provide the service. However suppliers will have no unique position. A third party will equally be able to say that they could offer such a service (with consent) and may have other advantages, for instances other information services.

Q3.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?

7. Through work with the ERA we have already provided analysis on the expected impacts that a restriction of access to granular data may have on the benefits realisation. We recognise that this is difficult to quantify accurately at this stage, and suggest that we seek to validate with evidence during trials throughout the Foundation Stage.

8. This is an area that is likely to develop as more innovative products emerge as a result of experience of installing and utilising smart metering systems.

9. The more innovative products appear more electricity focussed at the moment (e.g. Time of Use products appear restricted to electricity). That is not to say that something similar may not emerge in the future for gas (e.g. from a gas forecast perspective we are undertaking a study to understand whether knowledge of smart metered gas consumption through part of a day could assist with our day ahead forecasts).

10. It is also necessary to ensure access to detailed smart metered data for competitive pricing purposes. Detailed Half Hourly (HH) consumption data is needed to properly evaluate costs whenever a customer faces more than one potential tariff.

Q4.What types of energy services and energy advice could be provided by the market (by suppliers / 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.

11. Although we have still to complete trials to refine our understanding it is expected that information at granular level may identify specific usage patterns which can be used as examples to encourage customers to take up energy efficiency advice and measures, for instance more sophisticated heating controls.

12. This market is still very much in the evolutionary stage as technology develops and customer needs and wants begin to crystallise, ESCOs may require a granular level of data, for instance for appliance monitoring services, over and above current consumption data requirements for energy suppliers.

Q5.Should theft management be considered a regulated duty for which suppliers should have access to 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.

13. Detecting and preventing theft of energy is a regulated duty for suppliers. As such access to data to enable theft investigations is needed to deliver this requirement.

14. Improved information from smart meter alerts and access to granular consumption data will provide information on anomalies or patterns of consumption behaviour (for instance if a meter is bypassed for a few hours a day) which can identify fraudulent activity and abstraction of energy such as prepayment meter fraud.

15. Ofgem is currently consulting on proposals for the National Revenue Protection Service (NRPS). We are supportive of the Ofgem proposals.

16. Theft can be carried out by customers from any part of the community and in a varying number of ways so general access to data is required. Establishing the NRPS as an independent body would give customers assurance that suppliers did not have a general right of investigation, which may use real time data.

17. The analysis of data to check for irregular and suspicious patterns of behaviour has been successfully used in the financial services industry for some time. Applying these practices in a centralised function taking into account of personal data privacy concerns should ensure that energy theft detection improves with smart metering. Reduced theft will be in the interests of all law abiding customers ultimately leading to lower costs.

18. The programme should also recognise that the theft of energy is extremely dangerous and has major safety implications for our customers and our staff.

Q6. 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)

19. Most thefts are likely to be detected from tamper alerts or citizens tip off, but in the absence of quarterly meter read visits it will certainly help if suppliers are able to actively monitor usage. We note that Ofgem is consulting on the NRPS and we are in support of these proposals. Data will need to be collected and made available to the NRPS continually in order that such anomalies could be investigated fully.

20. Whilst the smart meters are being designed and future proofed as far as possible to deter theft of energy and meter tampering, theft can also occur away from the meter. Theft of energy can occur by the interference of incoming cables and gas pipes therefore centralised data analysis becomes more important.

Q7. 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?

21. At present we have no specific evidence to provide, we have plans to trial different products and services including time of use tariffs to better inform our approach and to understand customer reaction and gauge potential levels of take up.

22. Our trial designs for smart metering time of use tariffs will ensure that customers are no worse off than they otherwise would have been had they not taken up the offer thus ensuring that customers will remain on the best product available.

23. In order to design such products for the future it is necessary to understand anticipated levels of usage during relevant time periods and continue to measure these accurately during the operation of such products.

24. Currently 14% of our customer base, take a time of use product such as economy 7. We would expect that as smart metering offers further scope for product and tariff differentiation that this would increase as the benefits from smart become more widely understood.

25. Our ability to deliver products for customers will be driven by the value that these can deliver. Value will driven by the costs of energy and the underlying wholesale markets for the products. These wholesale markets operate at half hourly level in electricity and daily level at gas. Access to information at this level is therefore important to suppliers to ensure that suitable products can be provided to customers. The information does not have to be real time for energy suppliers.

26. Half hourly and daily information provided to suppliers after the day should alleviate customer fears about energy suppliers monitoring their usage during the day to understand their lifestyles.

Q8. 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?

27. The existing settlement processes for domestic and small business customers do not require access to Half Hourly electricity and Daily Metered gas information. Both rely on estimation and profiling of information.

28. Half hourly electricity settlement and Daily Metered gas settlement does occur today, is an option for most customers and is mandatory for some larger business customers.

29. The provision of more innovative products for all customers will be reliant upon the ability to use the information available for smart meters within settlement to deliver cost benefits for suppliers and consumers.

30. There are a number of associated barriers to be overcome before this can be achieved (e.g. amendments of DUoS charges from network companies) and these have been identified by work undertaken recently by Elexon and by Xoserve (as part of their Project Nexus).

31. There is a cost incurred by all customers from operating the existing settlement process. Costs are not distributed accurately but are simply estimated to all groups of customers. This leads to risks for suppliers of the costs they incur for buying energy not matching the amounts that they can recover from their customers. This is reflected in a risk premium that all customers eventually pay for. The use of accurate customer usage information within the settlement process will remove this risk for suppliers and accurately assign costs to each customer. Work to quantify these benefits has been started by Elexon who recently published a cost/benefit analysis for moving the electricity profile classes 5-8 to a half hourly settlement regime.

32. Eventually therefore, once all smart meters are rolled out, it must be in the interests of all customers and energy suppliers to move to a settlement regime that uses actual rather than estimated energy consumption.

33. The movement to this reformed settlement regime will require smart meters at all customer premises and therefore it logically follows that this may be around 2019.

34. In the meantime individual energy suppliers may elect to move their customers to a non-estimated regime and we would like to see all associated barriers to allowing this to happen to be identified and removed.

Q9. 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.

35. We envisage that in future there are potentially two distinct types of customers when it comes to understanding wholesale hedging. Those with time of use products which will require a granular view of data and those on standard/traditional products where forecasting at an aggregated level may continue to be satisfactory.

36. Sample data is not an adequate substitute for aggregated data covering the total population of our customers. However, some more detailed sample data (in addition to the aggregated data) may enhance forecast accuracy, but it would need careful sample design and quality control.

37. In addition granular data is required in a timely fashion for this to be relevant (i.e. next day) to energy suppliers for their wholesale market hedging.

Q10. What level of data would be required and how would this be used to manage debt? Please provide practical examples.

38. Daily data will help for all payment methods. For direct debit customers it will allow an improved consumption forecast, including recognition of changes in usage, which reduces the risk of debt build up. For all customers, daily data will allow suppliers to anticipate future higher bills and take prompter action to promote energy efficiency savings, half-hourly data would be more effective still. Daily reads will eliminate any disputes at change of tenancy, and will allow immediate more accurate forecasting of usage.

39. We anticipate that smart metering will facilitate a substantially wider take up of prepayment/ Pay as You Go (PAYG) services for customers by increasing the options for payment and removing the social stigma associated with traditional prepayment services and therefore providing more direct assistance with budgeting.

Q11.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?

40. It is not possible to quantify the benefits described above without trialling them. An ability in future to retrieve and analyse data to assist with query resolution, for example change of tenancy disputes e.g. instances where we are retrospectively informed of a change of occupancy or in the monitoring of self-disconnections, will facilitate quicker query resolution times and improve services for customers. In addition an ability to have access to a read or half hourly data to derive a read mid quarter will ensure that in instances where a price change occurs that customers are charged at the correct rates for each part of the billing period.
41. Without access to this daily information it is unlikely that services will be improved as much as energy suppliers would like or customers would expect. This would be particularly damaging to those customers at risk of falling into debt, as the eventual consequence of debt repayment inevitably means energy is a greater proportion of weekly expenditure.

Q12. 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?

42. Our own trialling of smart metering has not yet specifically looked at vulnerable customer issues and therefore it is too early to tell at this stage what additional benefits smart metering data at a granular level may provide for these customers. However some of our expectations are described below;

43. Meter alerts from meters operating in PAYG mode will provide an indication of any customers who have self disconnected thus enabling timely promotion of support services. It may be possible to check payment histories of known vulnerable customers who are using PAYG services to check that they are continuing to top up their meters regularly.

44. We do have plans for further trials throughout the foundation period to develop our thinking in these areas.

45. We do not consider it appropriate to place regulated duties on suppliers until it is clear what needs to be provided to all customers and what can be left to the market to develop. We consider it more appropriate to utilise the Foundation period to test and learn and then consider what, if any, measures would be appropriate.

Q13. 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?

46. Yes. Networks should be able to utilise data from smart meters to inform future investment decisions for their networks and ensure security and continuity of supply for end customers.

47. Access to data will be one of the first steps on the road to establishing smart grids for G.B. the primary benefit of which should be lower operating costs for all.

Q14. Do you agree with the requirement for such data to be anonymised or aggregated wherever possible, and how should this be monitored?

48. Distribution Network Operators should be afforded a suitable level of access to data to manage their networks appropriately in accordance with their licence obligations.

49. Looking forwards this may mean that networks will require granular access to data to sub-station and in some instances to individual premise levels.

50. This will be required to ensure networks can actively manage ever increasing amounts of distributed generation such as solar P.V., micro CHP boilers etc and to facilitate the expected wider uptake of electric vehicles.

51. Granular data access may also assist targeting information and advice to customers in no supply instances and or rota disconnection situations.

Q15. Would suppliers be expected to advise consumers of network company usage of data given network companies do not have a direct relationship with consumers?

52. Suppliers already advise customers of network obligations by signposting this through terms and conditions and links' in literature and online updates, for example to Energy Networks Association.

Q16. 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?

53. Our preference is to develop an "opt out" model with appropriate controls and protections for customers to ensure that their choices may be exercised at any time should they choose to do so.

54. Such an approach would include;

a) Changes to the Principle Terms of customer contracts and the potential development of smart metering privacy notices. This could include an annual check of customer preferences; and

b) Implementation and compliance with a privacy charter.

55. We understand the concerns expressed about the potential use of data for marketing purposes but consider that normal business rules would apply.

56. In all cases even where an opt-out has been exercised, suppliers will require access to HH data on a daily basis for energy settlement and other regulatory purposes.

Q17. What evidence is there of likely take up rates that could be achieved through different approaches to consumer choice?

57. We recognise that this is difficult to quantify accurately at this stage, and suggest that we seek to validate with evidence during trials throughout the Foundation Stage.

Q18. 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?

58. A number of technologies may be available which government could consider. For example, hashing, anonymisation of data and external aggregation are well known tools.

59. We would suggest the ICO as the recognised "expert" in such matters would be best placed to advise on a specific course of action.

Q19. What parts of the privacy policy framework do you think should be delivered by regulation and why?

60. The Privacy Charter should set out who and what use of data and allays concerns for customers.

61. Regulation should therefore set out requirements to have and be compliant with a charter.

62. The DPA will cover arrangements for data being collected, processed and retained. The Privacy Charter will provide more sector specific information around granular data and assurance to customers over access control and how customer choice might be exercised.

Q20. What is the most effective way to set out any sector specific protections around privacy (e.g. licence conditions or other alternatives)?

63. Protections operate at a number of levels. Protection will be applied at the Smart Energy Code level e.g. signatories for parties including ESCO's. Licence conditions will apply to

suppliers and network operators and finally the Data Protection Act provides an overriding framework for all parties.

Q21. 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?

64. Over time we would expect the extension of robust access control arrangements delivered by the DCC to Authorised Third Parties (ATP). In the interim, a solution should be provided that delivers adequate protection but is proportionate to the likely take up of services which may be limited during the early days of DCC operations.

65. There are a number of aspects to authentication. The first is that the ATP is an approved body and this should be delivered by becoming a signatory to SEC. The second is that the customer has approved the ATP to have access to data which will be delivered via a customer contract. The third is authenticating that the customer is who he/ she claims to be.

66. Authentication could be achieved by the download of a code from DCC which is then confirmed via customer entry into the meter or IHD. An alternative would be for the current meter reading to be used and this could be confirmed by DCC. This would seem a much simpler solution to achieve.

Q22. 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?

67. Access to data via a consumer HAN is an alternative to access via DCC. This would require introduction of some form of device to connect the Smart Metering HAN (SMHAN) to the consumer's own HAN. It is important that this device is subject to adequate security to avoid inappropriate access to the secure smart metering system. This could be achieved by introducing an approval regime so that only accredited devices can be attached to the SMHAN.

68. There will be circumstances where the customer acquires a device from a retail outlet and wishes to attach this to the SMHAN e.g. acquiring an enhanced In Home Display. Such devices would need to be "paired" to the smart metering system. This could be achieved by submitting an identifier to the device provider's website which could then be used to generate a code from DCC. This code could then be used for "pairing".

Q23. 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?

69. There are a number of aspects to authentication. The first is that the ATP is an approved body and this should be delivered by becoming a signatory to SEC. The second is that the customer has approved the ATP to have access to data which will be delivered via a customer contract. The third is authenticating that the customer is who he/ she claims to be.

70. This could be achieved by the download of a code from DCC which is then confirmed via customer entry into the meter or IHD. An alternative would be for the current meter reading to be used and this could be confirmed by DCC. This would be much simpler to achieve.

71. Over time we would expect the extension of robust access control arrangements delivered by the DCC to ATP. This may well coincide with the centralisation of registration activities. In the interim a solution should be provided that delivers adequate protection but is proportionate to the likely level of take up of services which may be limited during the early days of DCC operations.

Q24. 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?

72. The Ofgem Consumer First Panel report published July 2011 indicates that customers do not appear to be unduly concerned about suppliers having access to consumption data. This is backed up by the communications we are having now with customers responding to information from us about smart meters.

73. We are concerned that there appears to be a rush to legislate this area before the market itself has had time to evolve and mature. It would be unfortunate for government to place obligations on parties that may have unintended consequences such that the market is not able to innovate and achieve its full potential to the full benefit anticipated in the governments own I.A..

74. We therefore consider it more appropriate to utilise the foundation period as a test and learn exercise and then to consider what measures if any should be applied to smart metering data concerns.

75. Non domestic customer customers moving between suppliers will be a commercial decision between the organisations. In the advanced metering market we already see

energy service organisations and customer own initiatives taking place with regards to data analytics.

76. We do not therefore see a need for any action here that may be regretted later.

Q25. 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?

77. We consider it appropriate to utilise the Foundation period as a test and learn exercise and then to consider what measures if any should be applied to smart metering data concerns.

78. In addition an early adoption/publication of a Privacy Charter could be used to gauge customer reaction to data issues.

79. The SMIP would also likely benefit by taking into account lessons learnt elsewhere for example Netherlands, Australia and California so that any mistakes are not repeated.