

Dear Margaret and Co,

Apologies for the second attempt, please delete my previous mail as a lot of the text seemed to go missing as I sent it!!

Thank you for the opportunity to comment.

Q1. wrt Main document Page 6 Sect 1.8. What seems to be wrong is that the HAN is the point of interface to the communications system and not the meter. The HAN is the Customer device and should be under the Customer's control, while the Meter should be a flexible Customer Interface device (CUI) with the communications to the Utility members.

Q2 HAN Systems are currently developed around Security, Entertainment and Energy. These are normally Customer systems which could be extended with a meter interface. However, the model of the HAN carrying the communications to the outside world may be unique (cf answer to Question 1). This may require units specific to the UK which in turn may limit the number of manufacturers who are prepared to develop such HAN systems.

Q4. The Catalogue has a major flaw as regards information on the commercial data interchange between the customer HAN and the supplier and distributor systems (via the meter cf Q1 response).

The only reference to this seems to be under Appendix 2 Section PC.8 with a short list of possible tariff and switch structures. In no way is this sufficient as a design statement. From discussions on customer engagement, I can see that preset time of day tariff, predictive Time of Use tariffs (sequences of firm then non-firm prices) and the ability to 'Trade' customer Import-Export variations (Market, Balancing and Ancillary service timescales) are all necessary constructs to make the Power System work efficiently. We already have some Ancillary services provision in the Customer domain but it is Market/Balancing (Matching) timescale participation which is the largest 'trade/tariff' requirement.

Predictive data from the customer is also vital. Smart activity in response to time-varying prices will probably render the existing Supplier and System Operator (top down) Demand forecasting models unusable and a new 'bottom up' mechanism will have to be devised. Accurate prediction of demand and generation is vital to ensure stable operation of the power system.

Q5. The Smart CUI is one piece of the jigsaw as regards Future Power Systems. To see which combination of technology will deliver a new sustainable power system (energy security with reduced emissions) at reasonable cost (capital and revenue), the various options need to be modelled in detail. This requires a time sequence

nested Commitment-Schedule-Dispatch-Outturn model, within the Market and Operator matching framework.

Q6. Up front carefully managed Customer Engagement is vital to determine what sort of new retail relationships are viable, as can be seen from the problems in the US. Various important points came out, including the need for incremental progression through new tariff structures. The Suppliers and Operators will learn much from the engagement process as regards the capabilities of Customer Distributed Energy Resources (demand, generation, storage) to respond to different price structures.

Q7 What we do need to allow Interoperability and to avoid asset stranding is flexibility in data content. The CUI needs to be programmable to allow different tariff/trade approaches so that the device does not become 'supplier specific'. The US Standards Institute have just published papers on Interoperability but the design seems to just concentrate on Demand management.

Q8 Yes and Yes. The System Operator and Distribution Operators also need to be involved to ensure the data and control design is adequate to ensure system security is maintained.

Q9 Having the HAN as the communications interface (cf Q1,Q2 response) will mean adding unique functionality. This may restrict the number of manufacturers who will make UK compliant units. IT is far better to put the interface in the flexible CUI system.

Q10 We need to better determine what the new retail relationship with the customer will look like (cf Q6 response), within the Future Power framework (Q5 response) in order to properly specify what the CUI and HAN need to do.

I have 22 documents on Future Power systems publicly available under my copywrite, including Smart Impact and Customer Engagement and the need to simulate the Future. The ideas partly resulted from professional forum discussions. I'll be pleased to provide links as requested.

Best Regards

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