

Comments on UK Smart Metering Prospectus and Associated Documents

220-Smart-metering-prospectus-cond - Question 1: *Do you have any comments on the proposed minimum functional requirements and arrangements for provision of the in-home display device?*

It is certainly advantageous if the in-home display device can be portable, but more important will be portability of the data, and the availability of applications (for example SmartPhone apps) which can access this data.

220-Smart-metering-prospectus-cond - Question 2: *Do you have any comments on our overall approach to data privacy?*

We agree with the general approach to security analysis, particularly the need for application layer / end to end cyber security. We look forward to a detailed analysis for the security implications of the communications network.

225-Smart-metering-imp-programme-design - Question 1: *Should the HAN hardware be exchangeable without the need to exchange the meter?*

This is dependent on which HAN hardware is being considered. It makes sense to choose a HAN communications technology which has longevity, e.g. 802.11. In this case, replacement of the HAN hardware in the meter will probably be unnecessary in the foreseeable future.

Choosing a future-proof open standards based technology such as Wi-Fi will encourage product development and makes it easy for customer installation and commissioning as this is a "known" customer experience: Wi-Fi routers / access points are in common use with residential broadband installations. This also supports paragraph 2.13 of the prospectus.

225-Smart-metering-imp-programme-design - Question 2: *Are suitable HAN technologies available that meet the functional requirements?*

There are a number of suitable HAN technologies available that meet the functional requirements. It is important to use open standards based software running over open standards based communications services. A good choice is ZigBee Smart Energy Profile 2.0, running over Wi-Fi, HomePlug, or ZigBee/802.15.4. The Association of Home Appliance Manufacturers (AHAM) has produced a report confirming this: <http://www.aham.org/ht/a/GetDocumentAction/i/50650>

220-Smart-metering-prospectus-cond - Question 8: *Do you have any comments on the proposals that energy suppliers should be responsible for purchasing, installing and, where appropriate, maintaining all customer premises equipment?*

It is unnecessary and undesirable for energy suppliers to purchase, install and maintain all customer premises equipment. There are many customers who will want to expand and enhance the functionality of their domestic energy management systems (2.13) and this should be made as convenient and economic as possible. Customers should be able to purchase additional devices through retail outlets, or install application software downloads. Having said this, key issues such as conformity/interoperability and security need to be carefully considered. Open standards are an essential basis for interoperability; however, a robust testing and certification strategy needs to be implemented to ensure products are interoperable; it is insufficient to assume interoperability between products without appropriate testing.

Chapter 3 Question 2 from Doc 232 on Privacy and Security - *We seek views from stakeholders on what level of data aggregation and frequency of access to smart metering data is necessary in order for industry to fulfill regulated duties.*

It is assumed that the data downloaded to the display (IHD, IP connected device such as a lap top, STB or smart phone) will be pricing data and to load devices some limited load control data while the data uploaded from the meter will be consumption data. The load control data will be infrequent (typically once or twice daily) and on an as needed basis but will need to be randomized to prevent grid resource spikes. The time-of-day pricing and consumption data will need to be tuned to the neighborhood (e.g., rural, urban, suburban and density - single family or multi-family, etc.) but a reasonable default value would be every 15 minutes. The level of aggregation will depend on cost of the aggregation point (a function of memory, processing power, BW etc. which in turn will depend on the neighborhood characteristics as noted above).

The DCC is mentioned in numerous locations within the consultation.

The prospectus and associated documents proffered several questions:

Prospectus

CHAPTER 4 (responses requested by 28 September)

Question 10: Do you have any comments on the proposal to establish DCC as a procurement and contract management entity that will procure communications and data services competitively?

Question 11: Do you have any comments on the proposed approach for establishing DCC (through a licence awarded through a competitive licence application process with DCC then subject also to the new Smart Energy Code)?

Question 12: Does the proposal that suppliers of smaller non-domestic customers should not be obliged to use DCC services but may elect to use them cause any substantive problems?

Question 17*: Do you have any comments on our implementation strategy? In particular, do you have any comments on the staged approach, with rollout starting before DCC services are available?

Non-Domestic Sector

CHAPTER 4

Question 4: Do you agree with the proposed approach that use of DCC should be optional for non-domestic participants in the sector?

Question 5: If use of DCC is not mandated for non-domestic customers, do you agree with the proposed approach as to how it offers its services and the controls around such offers?

Question 6: To what extent does our proposed approach to the use of DCC for non-domestic customers present any significant potential limitations for smart grids?

Question 7: Is a specific licence condition required to ensure that metering data for non-domestic customers can be provided to network operators or DCC, and should any provision be made for charging network operators for the costs of delivering such data?

Implementation Strategy

CHAPTER 5

Question 3: Do you agree with our proposal for a staged approach to implementation, with the mandated rollout of smart meters starting before the mandated use of DCC for the domestic sector?

Communications Business Model

CHAPTER 2

Question 1: Do you agree that access control to secure centrally coordinated communications, translation services and scheduled data retrieval are essential as part of the initial scope of DCC?

Question 2: Do you agree that meter registration should be included within DCC's scope and, if so, when?

Question 3: Should data processing, aggregation and storage be included in DCC's scope and, if so, when?

Question 4: Do any measures need to be put in place to facilitate rollout in the period before DCC service availability and the transition to provision of services by DCC, for example requiring DCC to take on communications contracts meeting certain pre-defined criteria?

CHAPTER 3

Question 5: Do you agree that the licensable activity for DCC should cover procurement and management of contracts for the provision of central services for the communication and management of smart metering data?

Question 6: Do you consider that DCC should be an independent company from energy suppliers and/or other users of its services and, if so, how should this be defined?

Question 7: Do you have any comments on the steps DCC would need to take to be in a position to provide its services and the likely timescales involved?

Question 8: Do you have any comments on the proposed approach to cost recovery and incentivisation for DCC?

Text from the Communications Business Model represents an example of the envisioned system.

Staged Implementation – transitional arrangements

In order to bring forward the start of rollout and help deliver early benefits, we are proposing a staged approach to implementation. Suppliers will start to install smart meters that meet the minimum requirements defined in a common technical specification ahead of DCC being established. Between the point at which licence modifications mandating rollout targets come into effect and DCC service availability, suppliers would be responsible for procuring their own communications services.

From the date on which DCC starts provision of services, suppliers will be required to use these services for all wide area network (WAN) communications with smart meters in the domestic sector. This includes all meters installed prior to that time that comply with the relevant technical specifications. Communications contracts entered into by suppliers would need to be either of limited duration or capable of being novated to DCC once it commences provision of services. To provide certainty to suppliers and protect the interests of consumers, specific arrangements may need to be put in place to facilitate this process. For example, DCC could be required to take on communications contracts meeting certain pre-defined criteria.

We are also considering earlier measures that may be necessary around interoperability in order to help ensure consumers will not face barriers in switching suppliers.

Comments on DCC :

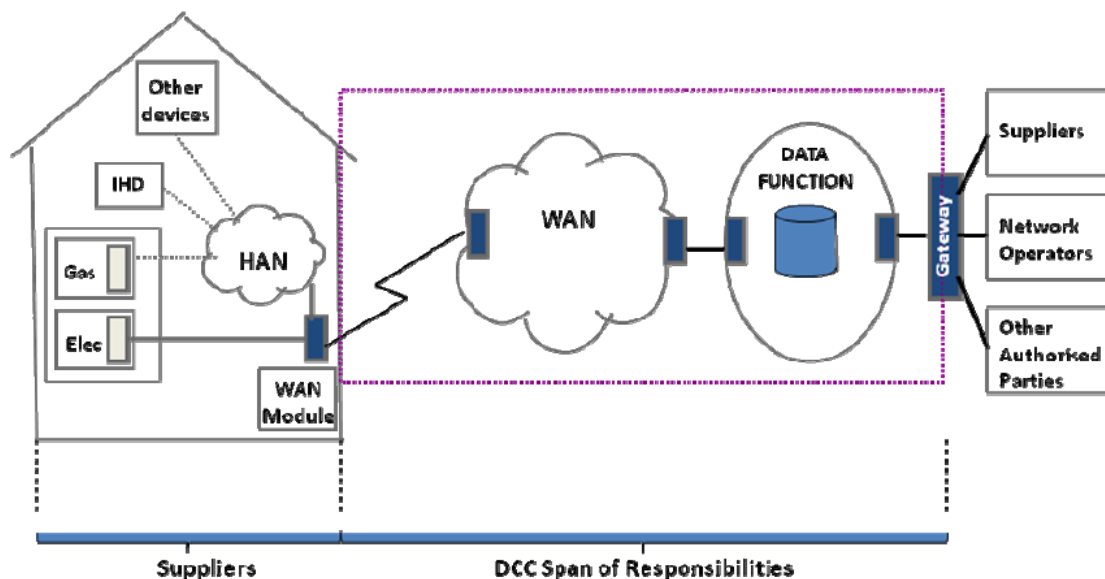
We appreciate the thoroughness of the description of the DCC's responsibilities, structure, relationships, and time phasing. There is every reason to believe that the detailed plans will deliver the planned system. There are concerns, however, about the goals, costs and services provide by the planned system. We propose that reusing as much of the existing, available infrastructure would promote the most rapid and cost effective deployment scheme. Certainly a vast communications infrastructure already exists and the implementation plan specifically recognizes that fact since it calls for the use of it prior to the formal establishment of the DCC. At the heart of this issue then lies the scope of the DCC.

While some might argue that the initiation of the deployment of smart meters should be delayed until the DCC has been fully established, we raise the inverse question as to whether an evaluation of the novation to the DCC should be deferred until after the initial roll out of the system. If the requirements for the system are adequately described by the GEMA/DECC/Ofgem *a priori* could the administrative overhead of the DCC be reduced in scope to that of an arbitrator for exceptional situations rather than being a fully functional communications network administrator?

Additionally, the DCC proposes to use mobile communications as the only data delivery mechanism. It would appear to be far more efficient to consider using alternative forms of available infrastructure such as Ethernet and ADSL where it already exists and also to not preclude other communications technologies where appropriate – e.g. private wireless systems with low operating expenses. The deployment of a dedicated homogeneous communication system is intellectually attractive but it is not immediately apparent that this is a good investment in new communications equipment, nor a good use of scarce spectrum. Additionally, it is not clear that there is a single technology that will be the most suitable for all locations; for example dense urban environments have very different requirements from sparsely populated rural environments.

Within the Communications Business Model document (226) is Figure 1 describing the system responsibilities.

Figure 1 – Proposed smart metering system responsibilities



This architecture provides a feasible solution to the problem but appears to dismiss the diversity of uses that should be expected. For example, two popular methods of obtaining data from the internet are laptop computers and smart phones. There is no provision for these consumer or business devices to access the power load, usage, or rate information. The implication is that the proposed network and the IHD provide the sole means of transferring and viewing information. Although it might be portable within the premises, such a data flow model seems excessively regressive and ignores already prevalent consumer data access methods and expectations.

The generation and dissemination of smart metering information is vital. It is also clear that mis-appropriation and mis-use should be minimized if not eliminated. A question to ask, by analogy, is whether the smart metering information is intrinsically more valuable and difficult to manage than financial transactions and is it the fundamental difference in Smart Metering information that requires a unique collection, storage, administration and distribution system? If all financial information was centrally controlled and coordinated through the Bank of England communication network one could argue that the DCC should reasonably follow suit. Noting that this is not the case and that financial transactions are successfully and securely executed every day raises the question of why the DCC would deviate so significantly from a model already proven?