

**"Smart Metering Implementation Programme: a consultation on the detailed policy design of the regulatory and commercial framework for DCC (September 2011)"**

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eMeter welcomes the opportunity to respond to DECC "Smart Metering Implementation Programme: a consultation on the detailed policy design of the regulatory and commercial framework for DCC (September 2011)".

eMeter is a smart meter software company that provides a smart network application platform (SNAP) to integrate smart meters and smart grid communications networks and devices with utility IT systems. Being vendor-neutral toward all meter, hardware, and legacy utility software systems (e.g. CIS and Billing), eMeter has a unique, unbiased and global perspective on smart meter IT issues. In addition, eMeter's principals have participated in the definition and development of the smart grid for nearly three decades, including leading advanced metering working groups in regulatory proceedings, participating in a wide variety of industry standards groups, founding the Demand Response and Smart Grid Coalition (DRSG, managing consumer- oriented Smart Grid pilots (e.g. PowerCentsDC and the Ontario Smart Price Pilot) that have been recognized for demonstrating best practices, and testifying before the U.S. Congress and various state legislatures on these issues. eMeter has also been active in Europe, participating in EU and ERGEG activities and consultations, founding the Smart Energy Demand Coalition (SEDC) and having been an active participant in DECC and Ofgem's previous and current smart metering consultations, including those regarding DCC scope and functionalities. Finally, eMeter's software is in use in Smart Grid projects around the world, including several in Europe and successful multi-tenancy implementations of clearing house similar to the DCC, such as the IESO's centralized meter data management and exchange platform in Ontario, Canada.

eMeter's response consists on comments and evidence based on our expertise multi-tenancy smart metering roll out, and roll outs that benefits different stakeholders. We would like to name our views or expertise on policy proposals behind both the regulatory and commercial framework that support the establishment and licensing of the DCC

Taking into account the requirements around the design of the DCC and the UK Smart Metering Implementation Programme:

- DCC will communicate with the electricity and gas the meters,
- DCC will be responsible of procuring the contract that manages the services to communicate with the meters
- DCC's design and performance will be regulated by the still to be set up Smart Energy Code.

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eMeter has observed over the past decade two key strategies to balance value for money against flexibility in meeting future requirements in the implementation of smart meter systems. The first is to separate data sources from data uses. This is accomplished by inserting a software integration platform between the data communications system and the receivers and users of data, here the suppliers, DNOs, and authorized third parties. Logically separating the sources and uses allows for changes to, even replacements of, the IT systems of data users without having any effect on the field devices or data communications, or vice versa.

The second strategy is modularity. Interfaces to communications networks can be through modular adapters so that new communications – or upgrades or changes to existing communications – can be accommodated through either a new adapter or an update to an adapter. This contrasts with the need to modify the entire software infrastructure necessitated by a non-modular, monolithic approach. Such modularity is equally effective with respect to interfaces to supplier, DNO, and authorized third party data systems, each of which should be able to evolve independently. Over time, interfaces will become more and more interoperable, but eMeter's experience has been that even interoperable systems nearly always have idiosyncrasies that must be accounted for.

In short, cost-management and flexibility are achieved by planning for change from the start and allowing for such change to be incremental and non-disruptive

Our response will be commenting on the seven key elements named by DECC in the consultation.

<b>1. Proposal for how the role of DCC will be established in gas and electricity legislation</b>
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We envisage some potential change that must be included in the regulatory and commercial framework, mostly regarding new regulated activities related to delivering grid benefits, and those that affect other parts rather than those initially thought of. The introduction of smart meters and smart grid capabilities will bring the necessity to change the scope of regulated activities, and consequently which data that has to be handled by the DCC and pass forward to different stakeholders.



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Services	Participant	Frequency	Impacts
Demand Response	Supplier, ESCOs	HH	Optimization of the distribution and transmission grid capacity
Power Quality	DNOs		Last Gap control
Dynamic Pricing	Peak/Off Peak/ Hourly	Peak/Off Peak	Demand Reduction / Rebates
Net Metering	PV Developer/ Consumer		Accuracy
EV charging	ESCO, Suppliers	Peak/Off Peak	Identify time of charge
Voltage Control	DNOs, ESCOs		Better grid planning
Grid Balance	Grid Operator, Aggregators	Real Time	Demand/Supply Balance, More Renewable Hours

Demand-side programs could help balance the network — but to do so, there should be a link between network operators and their customers' base. For instance, where smart meters are deployed, network operators could get involved in demand side efforts such as electric vehicles, heat pumps, and distributed generation.

Consumers should be able to sign up for automated demand response programs and control systems. This will allow them to receive price signals or price information, to which they can respond by modifying their energy use. Thus, simple demand becomes smart energy demand.

Examples of how consumers can respond to dynamic prices:

- Cut peak demand
- Shift usage to off-peak hours.
- Reduce total energy consumption.
- Actively manage electric vehicle charging.
- Actively manage energy usage to respond to the availability of solar, wind, and other renewable resources. For example, programming a dishwasher to run only when wind resources exceed a certain threshold previously established. A smart dishwasher could communicate with the grid operator to get this information via the HAN gateway or the internet.
- Purchase more efficient appliances and equipment, based on a better understanding of how each device uses energy

These actions maximize savings to consumers and other energy users. And in the bigger picture, aggregators will use information from smart meters and home interfaces to help keep the overall power grid balanced and efficient.

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DCC might at some point in the future start handling these data, enabling somehow some standardization around these activities.

**2. Proposal for the DCC license conditions**

The DCC core main services are the communication and data metering access. Equally DECC acknowledge there will be some additional services. We would like to name some functions we believe DCC should hold to enable a smooth flow of information and process of meters installations and synchronization to the smart metering system.

**DCC FUNCTIONALITIES**

EXPLICIT	IMPLICIT
Access control	Synchronization with registry. Market process state tracking.
Translation	Multi-organizational Asynchronous and Synchronous Participant to DCC services. Mapping and Aggregation of DCC services to DCC to metering system messages.
Scheduled data retrieval	Flexible and modular interfaces to Communications and AMI. Stored and maintained AMI metadata. Stored and maintained meta data at the DCC regarding each metering system. Participant data provisioning requirements stored at the DCC.
DCC user services (e.g. reporting)	Configurable data delivery services, including retail energy billing data and revenue assurance events, distribution network usage data and outage information & alerts.
Data privacy & Security	End to end scope including participant to DCC and DCC to metering system. Business process management
Full communication Hub	Support for meter rollout and installation including; provisioning, activation, troubleshooting, expectations, work order management.
VEE, Validation, Estimation and Editing	The ability to process volume data in real time, including estimates and replace with actual data if delayed.



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Also, we would like to mention e-curtailement. A function that enables controlled load shifting in emergency situations aiming to protect vulnerable customers (such as those with dialysis machines) and to keep the lights on in hospital and polices stations.

DCC will have a 10 years contract to start plus 5 years extension. All DCC services providers should secure that they could also provide data to any DCC holder.

### 3. DCC Performance incentives

DECC proposal is to set up key performance indicators to evaluate DCC. These KPI will be focus on the delivery of its own services and its procurement and contract management activities.

eMeter would like to recommend DECC to choose solutions that enable audits as a feature of the services provided. KPI should be defined in a manner that looks at several stage of the roll out of the smart metering systems, tracking:

- that the installation of the meters have been done effectively
- and that connections among different interfaces have been done correctly

### 4. DCC Cost Recovery and Charges

DCC services providers are entitled to fund any required assets investment and recover such investment through amortized services charges over the time of their contracts.

We welcome DECC current program of cost recovery and charges. We believe to charge both suppliers and network operators according to their market share and not regarding the cost attached to specific meter, will bring DCC smart metering services to every household, and it will do so independently of how much the cost of delivering smart metering to that meter might be. Therefore we see value coming from redistributing total cost among all suppliers and network operators, as it will provide broader benefits earlier to more households and it will ease cost allocation calculations.

We believe that the sooner network operators start getting charge as a result of DCC, the sooner other than the stated core services (see table below) will start to be realized, as different stakeholders will start looking for recovery of their cost.

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	Description	Limitations/obligations on DCC
Core services, for example, basic periodic meter read.	A list of communication services identified in the SEC as being necessary from initial DCC operation. These will be supported by the initial DCC service provider contracts.	Required to provide to all authorised SEC parties.
Elective services, for example, more frequent meter readings	Communications related to energy use by consumers and that involve a smart metering system or other energy metering system with which DCC communicates.	Required to offer terms to all authorised parties.
Other SEC services, for example, data processing	Other services set out in the SEC.	Required or permitted to provide as set out in the SEC.
Value-added services, for example, communication with smart meters outside the energy sector	Services which rely on the systems that DCC has in place to provide core and elective services but which do not relate to energy metering systems or are not concerned with energy use.	Permitted to offer terms only with the consent of the Authority.
Other wholly unrelated services - e.g. catering services.	Any other service not falling into the above categories	Provision of such services will be limited to a de-minimis level for financial ring-fencing reasons.

Regarding core services distribution breakdown, we acknowledge that there will be

- a standing element that will recover a proportion of both DCC's internal cost and those of the services provides fixes costs for providing smart metering to each meter
- a non metric element related to the volume of data transferred, which could be distinguished by different time of the day
- a charge for the number of data transfer (depending on the technology)

Taking into account that the core services are the communication and data metering access, and that there are likely to be two different type of core services offered, such as

- A) Scheduled type services e.g daily message containing half-hourly meter reads)
- B) And on demand services, e.g credit balance update,

We believe some recognition of number pulls of data from DCC should be also taken into consideration of the cost charges.



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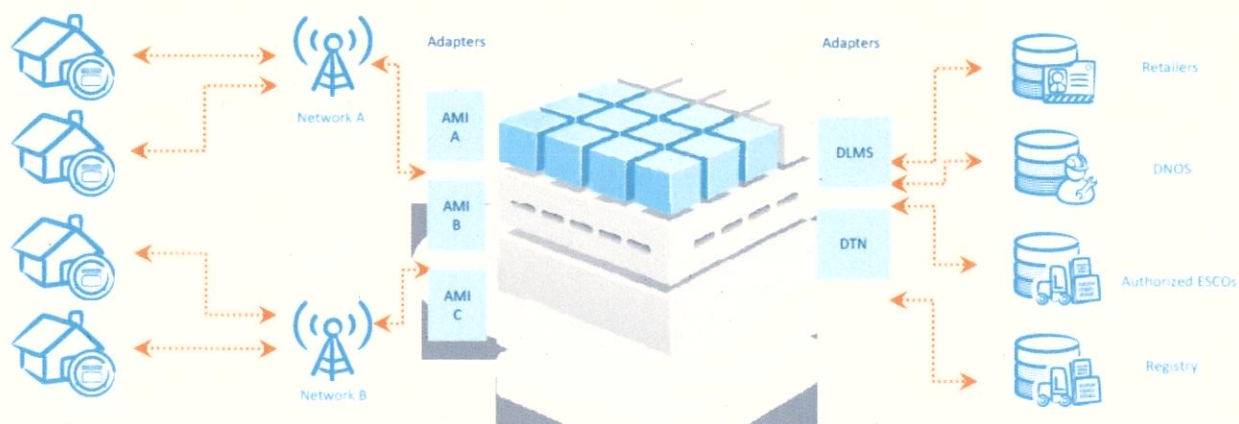
**5. Wide Area Network requirements for the provision of the DCC Core Services**

It makes the most sense for the WAN module to detect power outages and send "last gasp" messages. The main driver is that the device that sends the last gasp message must have a large capacitor to provide the energy needed to send the last gasp. If the meter sends the last gasp, then the WAN module must both receive the message and forward it to the DCC. Because the power is out, the WAN module would need more stored energy – both to receive the message and then to forward it. Having the WAN module send last gasps restricts the energy storage requirement to a single device, the WAN module. In addition, having only a single device in the communications chain – the WAN module versus the meter plus WAN module – reduces costs and increases reliability, because there is only a single message transmission rather than transmit-receive-retransmit required if the meter sends the last gasp.

**6. Adoption of foundation stage communication contracts**

Since suppliers are beginning to roll out smart meter prior to the establishment of the DCC's services, we recommend that DCC should be able to run multiple AMI systems to interface with any smart metering solution that suppliers might have selected.

## DCC Interfaces and Functionality



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7. License application process
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eMeter welcomes the transparency of the four stage process selection of DCC candidates process. We would like to recommend the Secretary of State to run proof of concept presentations, workshops where the different DCC candidates could prove evidence and presentment on how to overtake DCC activities and mostly and aiming to mitigate future integration issues to ask also for proof of capability managing and integrating a variety of systems and services.