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## Call for Evidence: Smart, Flexible Energy System

DCC welcomes the opportunity to respond to the Call for Evidence – A Smart, Flexible Energy System, released on 10 November 2016.

During 2016, Smart DCC Limited (DCC) successfully launched the data communications infrastructure that allows energy suppliers to install smart meters in every home and small business across Great Britain. This is a major milestone that delivers a first-of-a-kind, coherent and highly secure communication service for the energy industry.

Looking forward, DCC's strategic objectives include the delivery and development of the communications service in a way that encourages innovation and competition. As a result, DCC will be a key enabler in the development of a smart and flexible energy system in the UK, by supporting programmes that will enable a transformation in the supply of energy and operation of networks for the benefit of the consumer.

With this in mind, we recognise the importance of proactively engaging with Ofgem, the Department for Business, Energy and Industrial Strategy and wider industry stakeholders across a range of areas identified in the Call for Evidence, to support the development of the UK's future energy system.

If you have any questions regarding any part of this response please contact Aimi Hayman ([Aimi.Hayman@smartdcc.co.uk](mailto:Aimi.Hayman@smartdcc.co.uk)), Louis du Plessis ([Louis.duPlessis@smartdcc.co.uk](mailto:Louis.duPlessis@smartdcc.co.uk)), or myself.

I confirm that this letter and its attachment may be published on Ofgem's website.

Yours sincerely,



**Helen Fleming**  
Policy Director

# DCC response to Call for Evidence: A Smart, Flexible Energy System

## 1 Summary

In this document we set out our considerations of DCC's potential role in relation to the move to a smart, flexible energy system. Since few of the questions set out in the Call for Evidence are directly relevant to DCC, we have structured our response in line with the topics in the Call for Evidence, rather than responding to specific questions.

A key part of DCC's role is to facilitate the evolution of a smarter energy industry in a cost effective manner, benefiting consumers, the energy industry and Great Britain more broadly. Given DCC's role as the provider of a highly secure, nationwide data communications infrastructure and its strategic role in supporting the transformation of the energy sector, DCC is a key enabler in the evolution of a smart, flexible energy system in the UK. Consequently, we aim to engage with the developments outlined in the Call for Evidence through working alongside industry, the Department for Business, Energy and Industrial Strategy (BEIS) and Ofgem to understand how we can best support these developments. This could lead to changes to DCC's existing functionality, the introduction of new functionality, and/or the introduction of new services, which may require changes to DCC's regulatory framework.

This strategic intent is supported by:

### Our role

- DCC's Licence Objectives require it to deliver services in a way that encourages competition and innovation in the energy sector, while ensuring value for money and reducing DCC charges
- Facilitating energy industry transformation and the development of a smart, flexible energy system is central to achieving our Licence Objectives.

### Our service

- The DCC smart meter communication service is a key enabler of a smarter, flexible energy system
- On behalf of the energy industry we have built a highly secure, nationwide data communications network to deliver data signals to the right place at the right time
- The technology underpinning the solution will continue to evolve to support new requirements – including developments outlined in this Call for Evidence

### Our delivery model

- DCC is a skilled delivery body that procures and delivers services on behalf of the energy sector, where a single industry-wide solution is the most appropriate solution
- DCC has the capability to enhance existing services and develop new services to support the transformation of the energy industry, within the bound of its licence.

## 2 Removing policy and regulatory barriers

### 2.1 Enabling storage

DCC supports the view that energy storage has an important role to play in developing a dynamic and responsive energy system which works for consumers and supports low carbon generation. In addition to the core challenges set out in the Call for Evidence, DCC regards the ability of the network to send and receive data signals to the right place at the right time as a key facilitator in releasing the benefit of flexibility associated with energy storage.

Based on discussions with network operators, DCC considers potential benefits exist in the application, with relevant adaptation, of its communications infrastructure to distribution networks. For example, data signals could be used to optimise decision making on when network operators should utilise storage, either to store or draw energy.

DCC will be engaging further with distribution network operators, and other industry stakeholders, to explore the benefits of the DCC communications infrastructure in unlocking the value of energy storage to the UK's energy system.

## 3 Providing price signals for flexibility

### 3.1 Half-hourly settlement

DCC supports the view, set out in the Call for Evidence, that there is a strong case for enabling half-hourly settlement (HHS) alongside the smart meter roll-out. From DCC's perspective the key areas for consideration in the development of mandatory HHS are:

- Reforms should focus on ensuring that settlement data is accurate, consistent, and timely across all suppliers
- The need to ensure that suppliers receive consumption data from smart meters in a manner that meets their requirements for the purposes of half-hourly settlement, while ensuring the overall reliability of the smart metering communication network
- DCC can provide specialist support to Ofgem throughout the development and implementation of HHS through the provision of professional services into the programme to help define system data and architecture and plan a delivery approach. DCC can also provide access to the industry leading expertise of our external service providers.

DCC will be working with Ofgem and other stakeholders in the development of an optimal solution for HHS.

### 3.2 Smart tariffs

DCC supports the view set out in that Call for Evidence that smart meters and half-hourly settlement are important facilitators of sophisticated smart tariffs. Having delivered the communication infrastructure to enable the rollout of smart meters nationally, this infrastructure will be a core enabler for time of use tariffs. It provides the functionality that allows suppliers to set tariffs with different prices based on half-hourly intervals. It also allows consumption to be recorded in half hourly blocks, on the smart meter, thereby enabling the delivery of half hourly settlement.

The introduction of dynamic time of use tariffs would likely require significant changes to the DCC infrastructure to accommodate the increased throughput of data and to provide a measure of predictability around the timing of such messages. As a consequence DCC will engage with industry at an early stage in the development of dynamic time of use tariffs in order to determine how best to support industry requirements.

As far as time of export tariffs are concerned, DCC is committed to working with industry to understand the requirements, assess options and develop a solution that promotes a smart and flexible energy system in Britain.

### **3.3 Smart distribution tariffs**

DCC supports the development of smart distribution tariffs, especially the employment of dynamic distribution tariffs, as a means of providing signals in managing the optimal utilisation of the distribution network. The key function of the smart meter communication service is to deliver data signals to the right place at the right time. DCC would welcome the opportunity to explore with industry whether it could play a part in the move to smart distribution tariffs, and the development of an enabling communications infrastructure to the benefits associated with smart distribution tariffs.

## **4 A system for the consumer**

### **4.1 Smart appliances**

Smart appliances represent an opportunity to transform the way that customers consume energy and interact with the wider energy system. The smart meter rollout is an opportunity to change the way that consumers engage with the energy market. Smart meters will help consumers to make more informed decisions about where they buy energy. Suppliers and other technology providers can also develop new products and services that make use of smart metering data. These services could allow consumers to make more informed decisions about how and when they consume, produce or store energy.

Smart appliances will be able to connect, via a Consumer Access Device, to the Smart Metering Home Area Network (SM HAN) generated by the Communications Hubs provided by DCC. Smart appliances can then take signals from the consumer's smart meters to help the consumer make decisions about their energy usage. DCC could develop new types of messaging services to communicate with smart appliances in the home. This would provide a highly secure means of communicating with smart meters. This would also increase the utility of the smart meter communication infrastructure.

The interoperability of new technologies with the smart metering network, in particular with the Communications Hub that provides the SM HAN, will be an important factor in the development of smart appliances and the role of DCC Services in enabling consumers to benefit from innovative new devices. DCC will engage with industry to facilitate the development of such enabling technology.

DCC could provide value to distribution network operators by developing functionality that provides information that is currently difficult to obtain, for example, which devices are connected to the SM HAN. This would provide network operators with better visibility of devices that consume energy and that are potential sources of flexibility. This would be subject to consumer data privacy considerations. We would welcome the opportunity to

engage with network operators and others to understand how DCC can use information gathered via the SM HAN to support a smarter, more flexible energy system.

## 4.2 Consumer protection and cyber security

Consumer protection and cyber security are essential to ensuring consumers have the confidence to engage with smart technology and so realise the benefits it offers.

Security is central to the DCC infrastructure and enables the secure communication between Users and their devices within the home. With the help of the National Cyber Security Centre (previously CESG) and other independent bodies, the solution has been subject to a high degree of security assurance. As well as being scalable, the underlying security trust component provides opportunities for reuse and adoption for additional services. DCC has published a factsheet<sup>1</sup> to explain our approach and the principles that we work to.

There are emerging security risks associated with smart technologies and they are largely driven by consumer demand and behaviour. An all-connected and interoperable environment allows consumers to take control; not only of their energy consumption but also of other devices which are part of their lifestyle, for example, intelligent home appliances, intelligent vehicles and entertainment systems. A connected environment also provides opportunities for organisations such as government or retail providers to integrate their products or services closer into the consumer's lives.

Where any of those opportunities influence the generation or consumption of energy, there is a risk of exploiting and impacting on the availability of the energy system. In an interconnected world where all devices and services share environments and/or data then those devices with weaker security controls have the ability to indirectly impact those devices and systems that do have good security in place.

Implementing an 'end to end' and standardised security architecture is key to mitigating the risk of disruption to the energy system. Suitable standards implemented from design, through to the manufacture and operational service allow reliance to be placed on the security of other connected devices, thus reducing the likelihood of impact to the energy system. One of the key aspects of the Smart Metering trust model is that authentication and authorisation is segmented amongst multiple parties such that large scale impact is only possible if multiple organisations and/or components within the chain of trust are exploited.

## 5 The roles of different parties in the system and network operation

DCC will work with industry to understand the evolving requirements of the distribution system operators and identify what changes may be required to DCC Services to support this. DCC could have a role in communicating energy usage data to support the future market model. DCC could also support distribution system operators in their new role by providing visibility of the energy-consuming devices and sources of flexibility that are connected to the network.

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<sup>1</sup> [www.smartdcc.co.uk/media/219701/15668\\_factsheet\\_security\\_update\\_v4.pdf](http://www.smartdcc.co.uk/media/219701/15668_factsheet_security_update_v4.pdf)

## 6 Innovation

As a result of our role, our service and our delivery model, DCC is keen to provide a platform for innovation and to support the development of a smart flexible energy system. Finally, the Call for Evidence discusses the potential of pilot studies, e.g. in the development of smart tariffs. DCC welcomes engagement to support such development projects.

## Appendix – About DCC

Smart DCC Limited (DCC), a wholly owned subsidiary of Capita plc, was awarded the Smart Meter Communication Licence ('the licence') by the Secretary of State for Energy and Climate Change on 23 September 2013. DCC is a special purpose vehicle created to carry out the Authorised Business of the licence. In line with our commitment to our Licence Objectives, our primary role is to implement and operate the smart meter communication service through our Service Providers and to deliver our services in a way that encourages competition and innovation in the energy sector, while ensuring value for money and reducing DCC charges.

DCC is an experienced delivery body that procures and manages the delivery of services on behalf of the energy sector. Working with the energy industry, the SEC Panel, BEIS and Ofgem, we aim to help realise policy objectives that will allow consumers to benefit from smart meters and a smarter, more flexible energy market.

We are the intelligent client on behalf of the energy industry. This means that we:

- Work in partnership with the energy sector to identify opportunities for developing and improving DCC's services to support the smart transformation of the industry
- Develop solutions that meet service requirements
- Procure capabilities from external Service Providers who will be responsible for delivering service requirements
- Lead the execution of projects and programmes that will deliver new and improved services to industry
- Manage the operation of integrated services that meet the requirements and expectations of industry
- Work in partnership with our supply chain to maximise the value that industry derives from DCC's Service Provider assets, capabilities and services
- Deliver and operate services that are effective, economic and efficient.

In November 2016 we launched the data and communications infrastructure to enable the nationwide mass rollout of smart meters. The smart meter communication service will provide a single national communications infrastructure to allow suppliers to install meters in homes and small businesses across Great Britain.

The DCC network connects smart meters to the business systems of energy suppliers, network operators and other authorised Users, such as third party intermediaries. It offers a secure, consistent service for all energy suppliers and avoids the complexity and duplicated costs of energy suppliers procuring their own networks. It will provide the information that will enable Users to develop innovative new services and products.