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Metering and Market Operations
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26 March 2021

Dear Jacqui,

Smart DCC's response to Ofgem's call for evidence to review our licence arrangements

Smart DCC Ltd (DCC) welcomes Ofgem's review of DCC's licencing arrangements for the period 2025-2040 and are pleased to submit a response to the call for evidence. This letter represents the views of Smart DCC Ltd, and we are content for it to be published on the Ofgem website.

At DCC, we believe in making Britain more connected, so we can all lead smarter, greener lives. We believe this purpose complements Ofgem's objectives of protecting the interests of consumers, facilitating decarbonisation at the lowest cost, and enabling competition and innovation.

Post 2025, our core business will remain the operation of the smart meter communications network, and we will be focussed on increasing the efficiency, quality and stability of our platform and working with our customers to enhance the service we offer in response to their needs.

In addition, this nationwide infrastructure, already paid for by end-consumers, can play a valuable role in helping the UK reach its target of Net Zero by 2050. The superior reach, connectivity and security of our network makes us a unique asset that can be reused by Government and Regulators to implement policy interventions that aid energy system transition and deliver public benefits and wider social value. For example:

- Load control to balance the local grid, supporting the increased uptake of EVs, heat pumps, storage etc. Likewise, to mobilise demand response through use by market participants.
- Providing a central registry of assets connected to the distribution networks, such as decentralised generation from domestic solar to small commercial renewables.
- Offering economies of scale in providing services to end-consumers, particularly those with a social benefit e.g., identifying fuel poverty and targeting energy efficiency measures; and
- Providing a non-commercial central data exchange for the public benefit.

Further into the future, there will be scope to defray the costs of developing the network that have been incurred by core customers by providing complementary applications in other sectors.

To facilitate this post 2025 vision, we believe that the following principles need to be considered:

- DCC should be an independent entity - delivering transformational technology-enabled change in the energy sector - and should remain free of vested interests. This will enable us to balance and connect the needs of consumers, our energy customers, and the energy system, as a whole. Furthermore, DCC's data, digitisation, reach and security are unique within the energy system requiring a unique resource base.
- Private ownership, combined with the right risk and reward model, provides the best vehicle to drive performance and mitigate risk to the consumer.
- We should have the flexibility to adopt different commercial models, whether that is delivery through 3rd party contracts or directly, dependent on the outcomes required.
- We should have greater flexibility to receive funding from sources other than customers e.g., shareholder, investor, customers, external bodies etc. Again, this should be driven by what is appropriate, given the outcome required.
- The regulatory framework needs to reflect the different activities and objectives within DCC's wider operating model – we would favour an ex-ante regime with appropriate and targeted incentives. However, it will need to include suitable mechanisms to manage uncertainty relating to programme delivery, service design and development.
- If DCC were to reach the point of offering services on a commercial basis, as a means to defray costs to our core energy customers, this should be unregulated as far as possible, albeit protecting the interests of end-consumers; and
- DCC needs to be subject to more streamlined governance – the purpose of governance should be to enable DCC to deliver against its objectives. Wherever possible DCC should be allowed to control its own affairs, such that it can be genuinely responsive to the incentives which form part of its regulatory framework.

We foresee a bold and optimistic future for DCC as the secure digital spine of the energy system. Significant investment has been made by end-consumers in building the DCC infrastructure and we have proven we can work at scale on a 24/7 basis. The aim should be to make the greatest possible use of this unique national asset.

We look forward to discussing our vision, and how to enable it with Ofgem and our stakeholders.

Yours sincerely,

Angus Flett
Chief Executive Officer, DCC

Annexe: DCC response

1. Summary

DCC's current regulatory and licencing framework was intended to be transitional. There has always been the assumption that it would evolve with the organisation and eventually be replaced by an enduring arrangement.

DCC's role has grown and matured over the last 8 years and it now has a scope greater than originally intended. By the end of this licence period, we will have designed and delivered the smart metering communications network – an extraordinary national asset providing secure connectivity into 30 million homes in Great Britain. In addition, we will have overcome the technical challenge of migrating millions of SMETS1 meters on to the network, opening the benefits of interoperability for all end-consumers.

As well as smart metering, we will have worked closely with Ofgem and Industry to build the Faster, More Reliable Switching service, and will have executed the first major upgrade to DCC's core technology platform by delivering the Network Evolution programme. This will future proof and enhance our network resulting in greater security, efficiency, and stability of service for our customers.

As the energy sector continues to transform in response to the Net Zero target, a digital platform will be key to facilitating the scale and pace of change set out in Government's recent Energy White Paper. DCC is ideally placed to perform this role and, as well as smart metering and switching, we are already being considered for roles in delivering domestic half-hourly settlement and electric vehicle charging.

We could maximise on the investment already made by consumers and build on existing capabilities such as load control and secure two-way messaging to facilitate the Distribution Network Operator (DNO) to Distribution System Operator (DSO) transition, support greater decentralised generation, deliver demand side response and realise economies of scale in the delivery of fuel poverty objectives.

Our response:

- Emphasises DCC's primary role in operating and managing the smart metering infrastructure.
- Paints a vision of a future where DCC is leveraged by Government and regulators as the digital spine of the energy system.
- Considers the option of defraying the costs of building the smart metering network in future.
- Sets out how DCC can deliver this vision and outlines the key characteristics which we believe are necessary; and
- Reviews the current regulatory framework and considers its suitability.

2. Context

The Data Communications Company (DCC) was established in 2013, following a public procurement and the award of the licence to Capita Group plc, with the objective of building and operating a secure nationwide communications network to enable two-way messaging between domestic smart meters and energy suppliers, networks and other users.

It was envisaged that DCC would act as a contract management organisation overseeing the activities of several large service providers, pre-selected by the Department of Energy and Climate Change (DECC), the predecessor to the Department for Business Energy and Industrial Strategy (BEIS). The reality has proven different. DCC has been required to provide overall programme and project management, as well as fulfilling the role of design authority. The scale of the functions providing day-to-day operational support is larger than the original vision, reflecting the complexity of operating a secure nationwide network around the clock.

Over time, DCC's scope has increased. We:

- designed and built the highly complex solutions which would enable all foundation SMETS1 meters to be adopted and migrated on to our secure network.
- are working with Ofgem to deliver the Faster Switching Programme. DCC has led this programme through blueprinting, Design, Build and Test; and
- are enhancing the smart metering and switching ecosystem. This includes the development of Dual Band and 4G Communications Hubs and delivering Enduring Change of Supplier (ECoS) capabilities.

DCC is also being considered for new roles in contributing to the extension of half-hourly settlement to domestic consumers and in support of nationwide electric vehicle charging.

2.1 DCC's core capabilities

The smart metering communications network provides the following core capabilities:

- Reach – When the roll-out of smart meters concludes, DCC's network will cover at least 99.25% of Great Britain. We will be connected to 53 million meters in 30 million homes and small businesses;
- Connectivity – the DCC network can send and receive messages and data to and from 'smart devices' outside the internet. It can also instruct the devices it connects with to undertake certain tasks or processes;

- Security - The smart metering architecture has been developed closely with the National Cyber Security Centre to ensure that robust security controls are in place;
- Data – The data flowing across the DCC network provides information on the behaviours of energy users in GB. This data could be used to better manage the whole energy system as well as provide new innovative products and services to end-consumers; and
- Load control – this functionality is already available in the DCC platform. In the future, this could be used to balance the local grid, and to enable demand side response through use by market participants.

The smart metering communications network is not the only value that can be delivered by DCC. There are additionally a number of key capabilities including:

- Design and Programme delivery – DCC staff have designed and built one of the most complex pieces of digital infrastructure in the world. We have had to develop processes and systems which can handle literally thousands of device model combinations, in use across Industry; and
- Contract management – Whilst the original contracts that underpin the development of the smart meter communications network were let by Government, we have gained significant experience in designing and managing complex contracts related to SMETS1 and Switching.

2.2 Completion of the smart meter rollout: DCC in 2025

By 2025, the smart metering rollout will be complete and DCC's focus will be on the in-life operation, maintenance, and enhancement of the network.

We will have delivered our network evolution programme including the re-procurement of both the Data Services Provider (DSP) and Smart Metering Key Infrastructure (SMKI) services, the delivery of future-proofed communications hubs and the introduction of an automated testing capability.

The Faster, More Reliable Switching service will be live with DCC operating the Central Registration Service. We hope that DCC will also be working actively with Ofgem and Government on the delivery of domestic half-hourly settlement and electric vehicle charging respectively.

The DCC licence provides us with an objective to promote competition in the supply of energy, to facilitate innovation in the design and operation of energy networks and to look for opportunities to re-use the network in order to reduce the costs of these mandatory services to our customers – we hope that by 2025, we will be making steps to achieve this objective.

On the horizon, there will be the challenge of re-procuring the two Communications Service Provider contracts, both of which are due to expire in 2028, unless extended. This prospect is an active

consideration in the design of our Network Evolution programme to ensure that no areas of opportunity are closed off inadvertently. The re-procurement of the CSP presents the opportunity to deliver services which better reflect our customers' needs, whilst ensuring that incentives placed upon our service providers are aligned with those on DCC.

3 The future energy system and DCC

The energy industry and wider society are going through a process of transformational change as the UK adapts to meet the Government's target of Net Zero by 2050. 2025-2040 will be a make-or-break period in the fight against climate change and will require society, including the energy industry, to make radical changes to many of our technologies and processes.

3.1 Key macro trends shaping society

There are three important macroeconomic trends pertinent to the future of DCC:

- Societal focus on sustainability – consumers are increasingly aware and making choices based on the low-carbon credentials of propositions.
- Empowerment of consumers – consumers are becoming more active participants in the energy sector by installing solar panels or purchasing electric vehicles and installing controllable appliances. These changes are being accelerated through technology and data; and
- Digitalisation of the economy – data and analytics are enabling more personalised services for consumers.

3.2 How these trends will impact the energy system and DCC

These trends will impact DCC and the energy system in the following ways:

- **Decentralisation** – almost 1 million homes in the UK have deployed behind the meter generation (predominately solar) and this trend is expected to grow. Domestic battery storage is becoming more affordable as a means of capturing renewable generation, lowering emissions, reducing bills and increasing security of supply. New business models are emerging, such as Virtual Power Plants which aggregate household batteries to manage the needs of the electricity grid and provide households with means to monetise energy storage and reduce their bills. The future energy grid is anticipated to leverage distributed energy in innovative ways to empower consumers and reduce carbon emissions - data will be key to this future.
- **Electrification of transport** – Transport represented 18% of emissions in 2018 and the electrification of this sector is critical for Net Zero. The government's 2030 ICE ban on new car

sales is going to drastically accelerate the sale and take-up of EVs. While this growth occurs, home charging will remain the dominant, attractive and cheap option, while public charging infrastructure will become increasingly attractive as availability increases and interoperability improves. The interaction of smart chargers with a home's solar panels or battery storage and/or other smart infrastructure will require the management of complex data flows and interactions in the home and especially with DNOs. Data management, visibility and interoperability between devices and networks will be key to make this future possible.

- **Decarbonisation of Heat** – The decarbonisation of home heating is a monumental task for the UK and will require either the retrofit, or replacement of fossil fuel powered boilers with technologies such as heat pumps and hydrogen boilers. The additional load on the electricity grid from heat pumps will be considerable and the ability to manage these remotely, help customers participate in demand response and give DNOs the requisite visibility to manage demand at a local level will be pivotal to the overall operation of the future energy grid.
- **Empowering consumers with innovation** – Innovation will be critical to give consumers control over their usage and emissions. This may be through time of use tariffs, bill splitting (i.e. securing different tariffs from different suppliers for particular appliances), home monitoring and control applications enabled by smart home controllers (i.e. to enable load shifting), demand response participation and/or improvements to support vulnerable and fuel poor customers.

4 A vision for the role for DCC in 2025-2040

DCC's communications network and its delivery capability can play a key role in delivering Net Zero. Following completion of the smart meter roll out, DCC should start to leverage the reach and security of its network, combined with its capability to realise complex transformation programmes, to contribute to the delivery of Government and regulatory policy objectives in the energy system transition.

4.1 Core DCC

By the start of the new licence period in 2025, the rollout of smart meters will be complete. However, the full value of the infrastructure will not yet have been delivered. Therefore, DCC's core focus will shift towards the in-life operation and maintenance of the smart metering infrastructure and any other programmes which transition from build to operate. We will assess how advances in technologies can be taken advantage of, to ensure that the investment the end-consumer has made continues to deliver a meaningful, social benefit. DCC will work to enhance the network, respond to the needs of our core customers, and realise efficiency.

In the new licence period, we believe that there will be considerable scope for DCC to improve on our existing services and to develop new services which enhance the value provided to our customers. DCC

currently offers a range of tools which help our customers to test and innovate. These include the testing services and the live experimentation environments at Brabazon House. DCC will continue to develop new ways to ensure that our customers and other innovators can develop and deliver new services for the benefit of end consumers.

We also propose that DCC could play a role in providing targeted services to our customers, particularly where economies of scale could be leveraged. For instance, with the right protections in place, DCC could provide a range of services addressing vulnerability and/or fuel poverty on behalf of the sector.

As part of the review, Ofgem may also want to consider whether there are economies of scale to be achieved through consolidating some of the functions of the smaller central delivery bodies in the sector into DCC. Like DCC, many of these bodies are technology enabled and play a role in the exchange of data so by being part of a larger entity there could be significant scope to create efficiencies.

4.2 Delivering against the future trends

Despite many challenges, DCC staff have designed and built one of the most complex pieces of secure digital infrastructure in the world. This secure asset has already been paid for by consumers. Given the significant sum invested, it is important to build on it and utilise its core capabilities for wider public benefit.

Government is poised to take decisions on several components of the energy system, and it is likely that they will require a vehicle for delivering coordinated digital change. Some of the next steps are already known - the Prime Minister's Ten Point Plan for a Green Industrial Revolution[1] and the 2020 Energy White paper[2] set out the short to medium term steps that the UK needs to take to decarbonise the energy system.

DCC is well placed to facilitate the transformation of the energy system and journey to Net Zero. Examples are set out below in a number of broad areas:

4.2.1 Decentralisation

Smart DCC could help third parties, such as DNOs, electricity suppliers or aggregators, to gain visibility and utilise flexible demand (e.g. heat pumps) and supply (e.g. batteries or EVs via vehicle-to-grid) to assist in balancing the local network or control these assets to participate in wholesale markets and so return benefits back to consumers. Additionally, it could help DNOs improve their visibility and control of

[1] https://www.gov.uk/government/news/pm-outlines-his-ten-point-plan-for-a-green-industrial-revolution-for-250000-jobs

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf

energy assets - DCC has the potential to maintain a central register of energy assets and communicate with those which are suitably enabled.

4.2.2 Electrification of transport

The rapid take-up of EVs in this decade will provide DCC with the potential to make use of load control to enable smart charging at home, vehicle-to-grid services and facilitate interoperability to allow consumers to change suppliers. Over time, we could also enable roaming charging so that consumers are able to charge back to their energy bill from any charge point.

4.2.3 Decarbonisation of heat

With a significant uptake of heat pumps, smart metering data could be used to understand heating demand and enable households or local area planners to make the best decision as to which technology a household should use, i.e. green hydrogen vs heat pump. Load control functionality, enabled by DCC, could help to alleviate grid constraints during periods of high demand and enable heat pumps or other smart appliances to be used as a demand sink in times of high or excess renewable generation.

4.2.4 Empowering customers

With DCC's broad reach into over 30 million homes, its robust communications platform and live experimentation and testing environments, DCC may be able to act as an intermediary for commercial entities to build capabilities and innovate for the benefit of consumers. These innovations such as smart home control, device usage monitoring and battery and solar optimisation could be used by consumers to gain insights into their electricity usage and help to gain control over their home and energy bills.

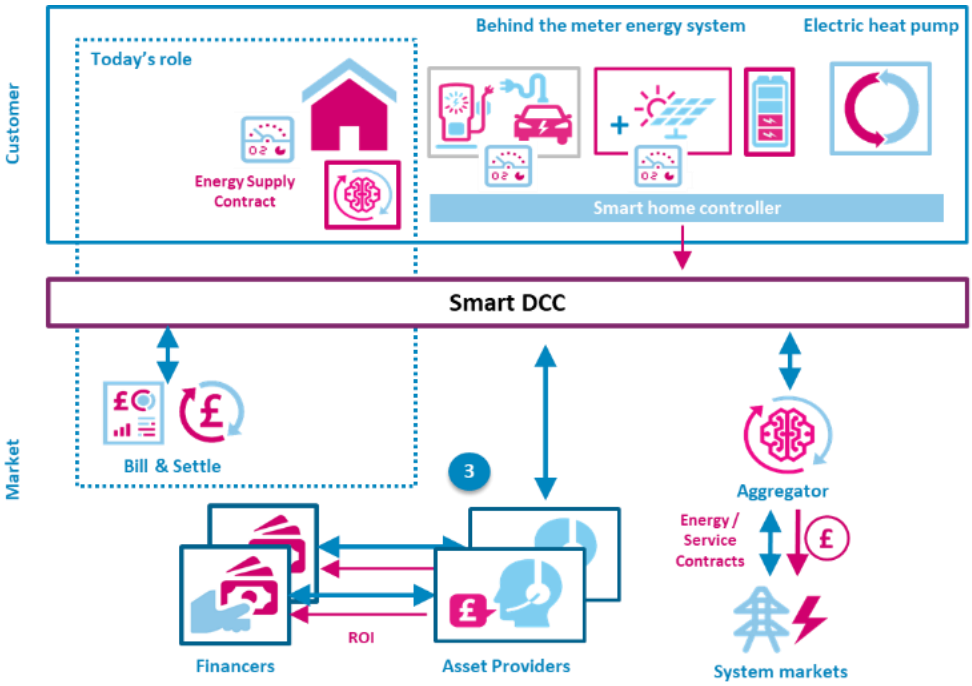

Figure A: Potential future interactions enabled by DCC (Copyright Baringa Partners)

4.3 Application of smart meter data to solve policy problems

As we outline in our white paper 'Data for Good', our ambition is to support a data access regime that maximises innovation and public benefit, at the lowest possible cost.[1] We do not believe that this core data should be monetised – the inherent benefits belong to the end-consumer and should not be the subject of exploitation by those seeking commercial gain. This form of data democratisation could galvanise the path for innovation and help enable new business models.

Smart metering data could play a role in helping define and solve policy problems or could provide the evidence base to help understand the impact of policies.

[1] https://www.smartdcc.co.uk/news-and-insights/news/freeing-up-access-to-smart-meter-system-data-will-help-reach-net-zero/

Case study: Smart meter data and fuel poverty

- Over 10% of households are identified to be in fuel poverty – a figure likely to increase because of the COVID-19 pandemic. This has a massive impact on health, education, and the economy.
- The identification of households in need is challenging and costly. The energy sector is estimated to spend £100m per year in 'search costs' to find households eligible for government support; and
- A recent BEIS and Committee on Fuel Poverty report advocates the need for better use of data and a new model of intervention.

The smart meter system can play a major role in supporting the fuel poor using smart pre-payment meters to help manage their finances. However, there are further benefits which are yet to be realised. Patterns of pre-payment meter top ups and credit exhausted alerts can be used to help identify households at risk of fuel poverty. With this information and the right privacy protections in place, the right support could be sent to the consumer which routinely self-disconnects.

4.4 Application of the communications network to solve policy problems

The smart metering communication network can be used in combination with other technologies to deliver targeted policy interventions. Other smart devices can connect to the network in a robust and secure way. The vast reach of our network means that, by 2025, smart devices located in at least 99.25% of Great Britain will be able to connect securely.

Case study: Connectivity, fuel poverty and energy efficiency

- Around 2/3 of households suffer from damp, drafts, or overheating – wasting energy and making home life uncomfortable;
- For every £1 spent on retrofitting fuel poor homes, the National Health Service is estimated to save £0.42 (from a cost of £1.4bn); and
- Homes account for just under 20% of the UK's carbon emissions in 2019.

Fuel poverty and energy efficiency are interlinked. Often, those in fuel poverty are those whose homes most require energy efficiency improvements. The smart metering infrastructure can be used to help ensure that energy efficiency retrofits are targeted towards those which most need it.

DCC is a platform designed for connecting smart devices and collecting different datasets. Temperature and humidity sensors could be linked to the communications hubs. When this data is combined with consumption data, it could help provide an accurate picture of the condition of housing stock. The insights could be used to prioritise the retrofitting of housing stock and ensure that policy initiatives such as the Warm House Discount Scheme reach those most in need.

5 Shape and operating model of DCC

When DECC established DCC, there were choices available to it in terms of ownership, operating model, funding etc. The specific characteristics it opted for are as follows:

- Contracting model – service capability is outsourced to third party providers.
- Independent of direct industry control – whilst the energy industry has influence through formal governance, DCC was intended to be a vehicle to promote competition in the sector.
- Private company, backed by a shareholder; and
- Funded by customers on a monopoly basis with no ability to retain finances within DCC – DCC charges equal its costs.

In the following section we first examine the allocation of risk and reward and then consider the above characteristics and ask whether they are appropriate for achieving the vision outlined in section 4.

5.1 Allocation of risk and reward

When DCC was established, it was intended that the risk and reward for the delivery of the smart metering communications network should sit with several invested parties. The financial risk of building

the network sat with Capita and DCC customers, and the delivery risk was allocated to DCC and Capita through the contracts with service providers and an aggregated supply chain model.

DCC's performance has been assessed against the delivery of specific implementation milestones during the design and build, followed by an operational performance regime for in-life operation which judges performance in relation to a set of KPIs.

Going forward Ofgem should consider whether there are alternative ways to allocate the risk and reward which may be more equitable, provide stronger incentives, and better reflect the different range of activities which DCC might be responsible for in a new licence period.

By 2025, there will be a greater emphasis on the maintenance and enhancement of the smart metering network and the cost associated with its operation. An ex-ante arrangement for funding would provide stronger incentives to fulfil customers desired outcomes in relation to cost and quality.

It would also be more appropriate than the existing ex-post arrangements for the increased proportion of steady-state operations within DCC's cost base. However, complementary uncertainty mechanisms would be needed to manage the risk around any new programme delivery. We would favour the 'staged approach' used in Switching, where DCC has agreed a price and timescales for each stage. However, to be an effective incentive, this approach will require Ofgem to permit DCC to make an increased margin where it delivers the agreed outcomes below cost.

Additionally, the use of "cap and collar" arrangements may be helpful enabling developments that provide substantial benefit but have uncertain economic benefits. These arrangements would provide for an acceptable risk return model and ensure that the investment is made.

5.2 Contracting model

DCC was envisaged to be a thin contract management organisation, working with fundamental service providers (FSPs) to deliver the smart metering network. These key contracts were signed before DCC was formed. In many cases, the requirements upon DCC do not flow through to the contracts of the FSPs or their supply chain. Often any penalties arising from failure fall on DCC only – it is not possible to simply apply these to our supply chain and therefore our partners cannot be incentivised in the same way as DCC.

DCC has worked hard to deliver better value for customers. Where possible, contracts have been renegotiated to achieve cost savings and drive improved performance. For instance, through renegotiating existing SMETS1 contracts, we have delivered net benefits to industry of £450m across the course of the programme. Furthermore, as we re-procure the DSP, we plan to disaggregate the contract to move monopoly power away from a single provider. This will create additional levers for DCC to use when managing its supply chain.

Looking ahead to a new licence period, our view is that DCC should be allowed the flexibility to deliver the outcomes required in the most appropriate manner, whether that is via a third-party contract or directly. We should be able to consider the merits of both approaches and then select the model which delivers most cost effectively and efficiently.

This approach is wholly consistent with DCC taking greater risk and then being rewarded or penalised, as appropriate, based on its delivery of outcomes.

5.3 Independent of direct industry control

At the formation of DCC, it was recognised that it should be sufficiently independent from those parties with vested interests in DCC's activities. This independence from industry has allowed us to make decisions in the best interest of end-consumers and the wider energy system.

In addition, the benefit of having an independent board exclusively concerned with the delivery of the outcomes DCC has been tasked with is very powerful. It should not be ignored that the skill set represented on the DCC Board reflects the very specific role that was carved out for DCC and the fact that DCC is part of the industry, but not controlled by the industry, enables them to make many difficult decisions based purely on the evidence in front of them.

One of the fundamental purposes of DCC has been to deliver initiatives which increase competition within the sector. Any form of direct control by industry has the potential to limit DCC's ability to deliver solutions which level the playing field for all energy system participants, including future disrupters.

Industry can influence DCC's activities through various channels including Industry Governance, DCC's business and development plan, as well as through subject-specific engagement and consultations. In addition, DCC remains subject to scrutiny through the oversight of Ofgem and the code panels.

Whilst our industry colleagues have a lot to contribute to what DCC does, and that is why customer and stakeholder engagement are central to DCC activity, we believe that our unique role in the energy system requires an independent organisation which is dedicated and focussed on a specific set of outcomes.

One of the fundamental purposes of DCC has been to deliver initiatives which increase competition within the sector. Any form of direct control by industry has the potential to limit DCC's ability to deliver solutions which level the playing field for all energy system participants, including future disrupters.

In our view, DCC should remain as an independent delivery body that can undertake complex technology-enabled transformational change programmes to deliver greater competition or transformation within the sector.

5.4 Licenced private company, backed by a shareholder

Being backed by a private business that has a clear profit motive can deliver significant cost efficiencies. Having a shareholder means that the reputational and capital risk is shared and that operational support functions can be provided by an established business that would otherwise have needed to have been created from scratch.

However, whilst the current regime provides an incentive to achieve increased margins by delivering cost savings in the form of the external contract gainshare mechanism, an ex-ante regime, that would allow DCC and its shareholder to benefit from the delivery of cost efficiencies over the course of a price control period, would likely be more effective.

Regulation should ensure that the profits are reasonable and aligned to the risks that the shareholder is taking. This is the model used for most monopoly public services in the UK including water and sewerage and energy networks.

A regulated, privately owned company, with the right incentives and balance of risk and rewards, will deliver the optimal benefits for consumers.

5.5 Funded by customers on a monopoly basis with no ability to retain finances within DCC

The source of funding for the business should reflect the nature and cost of activities that the business undertakes and the returns available as a result of these activities. As the complexity of the activities and the risks and rewards change, DCC should be able to explore alternative funding models and reinvest margins earned to unlock future consumer benefits. The external and internal funding of activities, will allow a sharing of risk whilst also allowing DCC to accelerate the delivery of the benefits

Although most Government backed infrastructure projects are funded through taxation, DCC is currently financed on a regulated monopoly basis by its customers and these costs are passed through to the end consumers of energy. However, as well as raising charges on the existing basis, there are several other ways through which DCC activities could be funded:

- **Use-case based –** new or enhanced services could be funded by investors, other than customers, on the basis that they would receive a return as a result of customers choosing to make use of that service and paying an explicit charge to do so. A similar model might operate based on debt funding with the revenue used to cover the interest and repay the debt.
- **Regulated asset base (RAB) model** - a set of tariffs are developed based on an asset base, investment in this, and recovery over a period of time. This would enable DCC to spread the cost of improving the DCC's network asset across multiple years. As well as smoothing funding

requirements over time, this also provides greater equity as it ensures that future consumers also make a financial contribution to the costs of programmes which they benefit from.

- **Deriving revenue from non-regulated services** - creating the environment whereby DCC can invest and develop services which can be sold on a competitive basis in non-regulated markets. This can defray the costs to existing customers by charging a fair price for the utilisation of the core network and create a funding source for pursuing other activities.

Our customers should always play a role in funding the service that DCC provides them, however, we need to ensure that these costs are as low as possible by looking to reuse the network and incentivise ongoing operational efficiencies.

6 Regulatory framework

DCC's regulatory framework must be driven by its future purpose and objectives. The current regulatory framework has many parts including:

- Acts of Parliament.
- Smart Meter Communications Licence.
- Annual ex-post price control.
- Incentive regimes in particular, the Operational Performance Regime (OPR).
- Directions from BEIS/Ofgem
- Industry codes of which DCC is a signatory (SEC and REC).

This framework was intended to be transitional, given the uncertainty inherent in the delivery of the smart metering communications network. There was the assumption that it would evolve over time and eventually be replaced by an enduring arrangement.

In the first section of this chapter, we assess the strengths and weaknesses of the current regulatory framework. Next, we discuss the merits of separate regulatory treatment for separate functions. Finally, we identify some further topics which we believe should be considered by Ofgem.

6.1 Appraisal of the current model of regulation

In this section, we critique the current model of regulation and identify issues and areas for improvement.

6.1.1 Delivery of mandated programmes

The current regulatory framework has provided the necessary flexibility to enable DCC to deliver large and complex change programmes, whilst managing the considerable uncertainty in requirements, timescales, and costs.

The ex-post model has allowed DCC to accommodate significant changes in the scope of its activities without having to enter time consuming re-opener processes. It has also allowed DCC to undertake additional mandated tasks, such as the migration of SMETS1 meters. The baseline margin application helps to ensure the growth in complexity of DCC is reflected in the magnitude of the margin at risk.

The fixed price contract model for Switching involves a gated process where for each phase of the programme stakeholders are consulted on prices and incentive arrangements. Uncertainty mechanisms such as agreements on when to re-baseline are built into each phase.

Milestone based incentives have been used to drive DCC to deliver mandated programmes. These are typically downside-only incentives which, if missed, contribute to a negative adjustment to the margin. Whilst this 'penalty approach' may incentivise DCC to strive to meet milestones, it does nothing to encourage cost efficiency. In fact, it may do the opposite and create a perverse incentive to 'throw resources' at the delivery of a critical milestone.

Whilst we agree that DCC should be incentivised to deliver programmes to time, we have had limited influence over timescales within which we are expected to deliver. An arm's length contract whereby DCC agrees outcomes for a certain price would allocate the risk and reward closer to DCC and give DCC greater ownership of delivery. As a minimum, there should be contingency and re-baselining mechanisms built into incentives so that DCC is not penalised for missing milestones due to circumstances outside of its control.

As the core of DCC's activities move to in-life operation, costs will become increasingly predictable and an ex-ante regime that prioritises cost efficiencies may be more appropriate. However, if DCC continues to play a role in delivering transformative change, it will require a mechanism to enable flexibility to manage uncertainty. This may require separate arrangements for separate activities.

6.1.2 Cost efficiency

DCC's costs are reviewed on an annual basis to determine whether the costs incurred in the previous year were efficient. These costs are separated into internal and external cost.

Internal costs make up 20-25% of DCC's total spend and the ex-post price control arrangements are the primary mechanism for driving internal cost efficiency and performance. However, going forward there may be more effective mechanisms for doing this and, in particular, as costs become more certain, evidence suggests that an ex-ante funding model would be more effective.

Around three quarters of DCC's expenditure is with our fundamental service providers, in particular the very large Data and Communications service provider contracts which were established prior to the formation of DCC. These external costs are subject to the same ex-post price control process as DCC's internal costs. Since DCC's first price control, Ofgem has not disallowed any external costs. We work hard to bear down on these costs, as far as our contracts allow us to, however we would acknowledge that many customers see the lack of disallowances as indicative that scrutiny of these costs is ineffective.

In addition to the price control arrangements, DCC has a specific incentive related to external costs - the External Contract Gain Share. This incentivises DCC to seek opportunities for cost savings from its supply chain. The benefits of these savings are then shared between DCC and industry. Throughout the course of the licence DCC has delivered £80 million in costs saving for the industry through this incentive.

It should be noted that incentives on DCC do not necessarily flow through to our service providers and there are limited contractual levers to drive greater cost efficiency or performance quality. These contracts were agreed by DECC in 2013 and whilst an ex-ante regime would certainly provide a more powerful incentive to drive down external costs, it is only with greater freedom to renegotiate these contracts and create aligned incentives that the full benefits are likely to be realised.

6.1.3 Incentivising operational performance

Incentive regimes based on outcomes are best practice for driving performance quality in regulated sectors. Ofgem's Operational Performance Regime (OPR) for DCC has been active since 2018/19 and we are currently in discussion with Ofgem to ensure that going forward the regime is fit for purpose and reflects customers' priorities.

For a regulated company to appropriately respond to incentives, and for stakeholders to have faith in the regime, the incentive mechanism must balance risk and reward. Any incentivised outcome should be a requirement of stakeholders and within the direct control of the regulated entity.

As contracts start to expire and DCC can agree new contracts, we will ensure that the contracts are aligned with the incentives placed on DCC.

6.2 A hybrid model for economic regulation of DCC?

The ex-post nature of the framework and milestone-based incentives were appropriate in the build of DCC, however, as smart metering moves increasingly into in-life operation and maintenance, an alternative model may be more appropriate.

However, this needs to be tempered by the fact that we believe that DCC should remain at its heart an independent vehicle to deliver transformational change and also have the remit to seek out opportunities to reuse the network for the further benefit of our core customers and for the wider public.

For our core regulated services, including in-life operations and corporate functions, it would be appropriate to explore the introduction of an ex-ante framework to drive ongoing cost efficiency and quality. The framework should make stronger use of genuine incentives, i.e. ones which reward as well as penalise, and customers/stakeholders should be central to defining the outcomes which DCC is targeted to deliver. The regulatory burden could be reduced through multi-year price controls.

When it comes to the delivery of transformational programmes, there will still be a requirement for mechanisms which allow for uncertainty in cost and timescales. On balance, we would favour the staged or gated approach which was applied very effectively in the Switching programme. An agreed fixed-price and timescales for a phase of activity with defined outcomes, combined with appropriate incentives but also a change control mechanism to protect DCC from events outside its control would be a suitable approach.

Finally, commercial opportunities for reuse of the smart metering network or new commercial products/services could be left largely unregulated. Instead, regulation should focus on ensuring a fair return from these services to existing customers, the avoidance of cross-subsidy and assurances that the service levels for the core smart metering infrastructure are not placed at risk.

6.3 Further considerations

6.3.1 Regulatory asset base models

In responding to the call for evidence, we undertook a hypothetical exercise to consider whether a regulatory asset base (RAB) model could be appropriate for DCC. RAB models are commonplace in the regulation of asset-intensive businesses and are used by Ofgem for regulating energy networks.

To create a RAB model, DCC would be required to own assets. For example, DCC could own the communications hubs procured under the network evolution programme, rather than lease them, which is currently the case. In theory, there are several advantages to adopting a RAB model:

- Substantially de-risks investment in infrastructure.
- Creates investment return certainty and thereby allows access to a lower cost of capital.
- Innovation allowances are often built into the model and are, therefore, congruent with Net Zero and the ability to build a platform for innovation; and
- Likely to bring private capital which can be used for investment.

However, in order to create this asset base, DCC would need to fund the purchase of assets and this is likely to require very significant amounts of debt funding, which comes with a significant cost which will have to be borne ultimately by our customers and by extension, the end-consumer.

In addition, it will make the finances of DCC more complex to operate both for DCC itself but also for Ofgem in seeking to scrutinise our activities.

Given that DCC is by nature, an asset-light business, a move to RAB funding would feel unnatural and it is not clear that the benefits would outweigh the effort required to enable it.

6.3.2 Governance structures

The governance and oversight of DCC is complex and it can often lead to DCC having to balance the opinions of different stakeholders, each of which believes it should have a say in DCC decision-making.

Ofgem is the economic regulator for DCC and seeks to ensure that DCC is economic, efficient and delivers in the best interests of consumers.

DCC is obliged to comply with the SEC and its provisions. The SEC is de facto self-governed by industry and therefore represents a range of interests. Likewise, we are also obligated to comply with the new REC, bringing the potential for contention between the demands of each code.

BEIS are our sponsoring department and have an interest in ensuring the smart metering implementation programme. They retain powers to direct DCC to perform certain activities. These powers are due to expire in 2023, but it is possible that they will be extended.

Having this three-way, soon to be four-way, push and pull can help to ensure that decisions are balanced, however, it can also cause tensions, slowing down decision-making or resulting in sub-optimal outcomes.

We would recommend that Ofgem takes note of these governance issues when designing any new regulatory framework. Contention or misalignment both have the scope to impact upon cost efficient delivery of change and new programmes and this could undermine the effectiveness of incentives or uncertainty mechanisms.

6.3.3 Greater clarity on the licence

There are several areas where the current licence provides limited detail and we believe that this review should be used to provide greater clarity.

It was originally envisaged that our customers would be able to develop bespoke messaging services through the elective communications service (ECS) mechanism. However, whilst a very small numbers of suppliers have considered making using of this mechanism, none have taken the option forward. From discussions with customers, it is clear that it is not seen as sufficiently attractive to encourage innovation and hence can not be considered fit-for-purpose.

The second general objective of our licence discusses the prospect of DCC delivering Value Added Services (VAS), however, the rules and regulations which describe VAS are not well-defined. If the delivery of VAS is to be a practical option for the new licence period, the regulations need to be fully developed. DCC would welcome the opportunity to explore this further with Ofgem.

Finally, there is no funding mechanism which enables DCC to explore new undertakings, for example, to fund the preparatory activities which DCC has been required to perform in support of Ofgem developing its Impact Assessment for half-hourly settlement. Currently, these costs are borne by customers through their charges, however we believe it would be preferable if such costs were more transparent. This could be addressed through the provision of an explicit cost allowance which could form part of an ex-ante settlement – similarly to the cost allowance for innovation in energy and water and sewerage networks.

In addition, we have suggested that we should be able to retain margin within DCC. Given the discretion to decide how this money is reinvested, DCC could use these funds for exploratory activities, for example, to develop proofs of concept or business cases for new services.