

DCC Business & Development Plan 2021/22 - 2025/26

Data Communications Company

The DCC operates the secure, national data network to support the roll-out and operation of

53 million

energy smart meters in homes and small businesses across the country

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1. Chairman's foreword

The Data Communications Company (DCC) provides the digital backbone of Britain's energy system.

We have delivered a unique, secure communications platform that is now available in more than 99% of premises across Britain.



Today there are more than 13 million smart meters connected to the DCC network. 8.5 million are second generation 'SMETS2' meters. I am pleased to say that the post Covid recovery of the roll-out has been successful, with installation numbers returning to almost peak prepandemic numbers since the first lockdown.

The DCC has also now successfully migrated more than 4.5m SMETS1 meters on to the network. The overall business case shows we are delivering a saving to industry and consumers of £347m. This was particularly high-scale and challenging IT migration and demonstrates the DCC's high level of technical problem solving.

Our overriding priority and core role is to support the energy industry to complete the smart meter roll-out, lead and implement the continuous improvement and development of the DCC network for the future and deliver faster more reliable switching.

We do this by continuing to run a reliable operation delivering further developments mandated by Government and responding to the needs of our customers to deliver over and above the requirements set out in the Smart Energy Code (SEC).

In particular we are tackling some of the challenges the industry has experienced in the North with a programme focussed on improving operational stability and performance measures. We are also delivering the Network Evolution programme, which will solve connectivity issues and provide a more stable communications platform.

Over the course of this next regulatory year I expect the total number of meters on our network to rise to over 20 million. This will give the energy industry a huge amount of never seen before granular data and a detailed, intelligent picture of how the UK uses gas and electricity.

The DCC core focus working with its customers is to complete the smart meter roll-out and support the transfer to renewables rather than fossil fuels as we tackle the climate change challenge head on.

Richard McCarthy CBE, Chairman



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2. Chief Executive introduction

At the DCC we believe in making Britain more connected, so we can all lead smarter, greener lives.

Every year, as part of our licence conditions, we produce a five-year Business and Development Plan that sets out our plans and priorities.

The core of what we do is to design, build, secure and run a reliable operational service, supporting our customers' SMETS2 roll-out, the migration of SMETS1 meters and the delivery of faster energy supplier switching.

Our work sits at the heart of the fight against climate change. We support the energy industry to digitise, decentralise and decarbonise – contributing to the UK's Net Zero greenhouse gas emissions targets.

The DCC network also has a key role in delivering interoperability enabling consumer switching, and over the

next 12 months we will complete our work for Ofgem to create and introduce a Central Switching Service (CSS) – this will mean consumers can switch energy provider and move to a better tariff overnight .

We have made significant progress in returning smart function to consumers with first generation SMETS1 meters. There are now more than 4.5 million connected to our network, returning smart functionality to households across Britain. All of our enrolment cohort windows are open and we are prepared to support energy suppliers as they ramp up and complete their migrations next year. The DCC and its customers are transforming the way energy works in the UK with programmes such as Market Wide Half-Hourly Settlement (MHHS). Access to half-hourly data will allow industry participants to build and bring new offerings to the market, differentiating themselves and providing the consumer with increased choice. This will build on the benefits that the national rollout of smart meters is already delivering.

At the same time the DCC Network Evolution programme will ensure the underlying technology deployed is upgraded to meet the 12 to 15 year smart meter asset life and to produce an improve unit cost to serve was well as short cycle time for in-life change. This year the DCC will bring to market a 4G comms hub minimum viable product – this will future proof the smart meter platform as current technology phases out. It will also support our customers in the North by providing a more robust service.

Throughout the year we have worked with Distribution Network Operators (DNOs) as a core customer group to better understand their needs and the critical role they play in the transformation of the energy market. During the year we launched our DNO Transformation Programme which will establish accurate and automated dashboard reporting of key performance indicators and develop data insight to enable improvement. Full dashboards will be available by September 2021.

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Our work sits at the heart of the fight against climate change. We support the energy industry to digitise, decentralise and decarbonise – contributing to the UK's Net Zero greenhouse gas emissions targets. Working with Industry the DCC will implement a new "Operational Performance Regime" by the end of the DCC financial year.

Overall, we have worked hard to improve our engagement with all our customers in recent years, through better informing them of our work mandated by Government and by improved cost transparency where allowed. We will continue to improve our engagement and transparency.

Given the backdrop of Covid and lockdown I am very proud of the DCC staff and our suppliers who have maintained momentum across all areas ensuring we continued to deliver on all programmes.

I also want to thank DCC stakeholders and customers for their collaboration over what has been a very difficult period for everyone.

Climate change is and continues to be the planet's biggest challenge. Only by working together to transform how we consume energy will we decarbonise and deliver smarter, greener lives.

Angus Flett Chief Executive Officer



3. Who are we and what we do

The DCC is a private company licensed by the Government and regulated by Ofgem to connect smart meters in homes and businesses across Great Britain to a single secure, digital network. We support the roll-out of second-generation (SMETS2) smart meters, as well as the migration of existing first-generation (SMETS1) meters onto our network.

Our network securely connects DCC customers - energy suppliers, network operators and registered third parties - to these smart devices spread across the nation. We provide support to our customers to install and migrate their meters onto our network and provide 24/7 monitoring of the network to ensure its operating at peak efficiency. Energy consumers benefit from having their meter connected to the DCC's network as it allows them to switch suppliers without the risk of losing smart capabilities. As well as empowering consumers to take control of their energy usage, the DCC's digital network will help enable Britain to hit its 2050 net zero carbon target for example by supporting the decarbonisation of energy generation and the management of energy demand across the system.

The DCC believes that universal, free data access and sharing will accelerate the nation's efforts to reach Net Zero. This echoes the principles within the Government's National Data Strategy. We believe that better systems data access can help industry to develop even more new business models and propositions designed to tackle the pressing social challenges of today.

We are also working with the energy regulator, Ofgem, to deliver a faster and simpler Central Switching Service for energy consumers. We have been commissioned to play a major role in the delivery of domestic half-hourly settlement, building on the foundation of the smart meter roll-out.

Our network comprises a mobile phone network in the south and central parts of Great Britain, and a dedicated radio network in the north. Taken together at scale, this network provides greater reach than mobile phones, digital terrestrial TV and superfast broadband combined, and



will bring the benefits of smart metering to more than 30 million homes and small businesses.

We operate to national and international security standards endorsed by the National Cyber Security Centre (NCSC). The information that travels across our network is encrypted so that it is readable only by the consumer's own energy supplier, a level of security far higher than standard home broadband.



4. Market context

At the DCC, we believe our purpose complements Government's Net Zero 2050 target and Ofgem's objectives of protecting the interests of consumers, facilitating decarbonisation at the lowest cost, and enabling competition and innovation.

Our core business remains the operation of the smart meter communications network and the delivery of faster and more reliable switching. We are focused 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, whilst delivering the required security controls that protect our national infrastructure. We are also delighted to be partnering with Ofgem in the delivery of Market-Wide Half Hourly Settlement.

The superior reach, connectivity and security of our network makes us a unique asset that can be re-used by our customers, Government and Regulators, to implement policy interventions that aid the energy transition and deliver public benefits and wider social value. As such the DCC is actively monitoring developments in technology,

policy, and markets relevant to our business. As the organisation at the heart of a rapidly digitising energy sector, we understand first-hand the potential this holds to bring further benefits to consumers and society at large. The need to enable positive change through better data use is rapidly gathering momentum. We see it as critical to our role - and our remit under licence as the DCC - to do everything we can to contribute.

We welcome the Government's recent Energy White Paper¹, Powering our Net Zero Future, which sets out the vision for a sustainable energy system that meets the needs of the Net Zero agenda and places consumers at its heart. We believe that the DCC has a central role to play in supporting this vision. To achieve national decarbonisation, several transitions must run in parallel. Foremost among

these are the decarbonisation of energy generation, and the electrification of sectors that are currently dependent on fossil fuels - such as transport and heat.

As a result of these transitions, energy systems will need to incorporate more intermittent supply (from renewables such as wind and solar), and also handle greater demand for electricity, and sharper peaks of demand (from the electrification of heat and transport). We will therefore need a smarter and more flexible energy system, managed down to local grid level, to help move demand away from the peaks (e.g. 5-7pm), to times where demand is lower (e.g. overnight). Reducing this peak will deliver benefits through reduced curtailment of intermittent renewables, reduced need for generation / capacity and less network infrastructure reinforcement - thereby keeping costs lower for consumers.

Local communities have a key role to play in this by developing an integrated approach to managing energy demand in their areas by adopting smart energy systems that combine heating, power and transport solutions to bring significant reduction to emissions and as well as promoting local jobs and wellbeing.

The Energy White Paper highlights the critical role of smart metering in supporting this transition to Net Zero, by:

• enabling consumers to access innovative solutions such as time-of-use tariffs;

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Energy White Paper (publishing.service.gov.uk)
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EESC's Energy System Modelling Environment is used to understand the minimum required energy system changes to meet the national decarbonisation agenda with a focus on the long term (2010-2050). The model searches for an optimal energy system design, minimising overall system cost whilst satisfying a large number of user-controlled assumptions and constraints including CO2 emissions targets. The model also considers technology operation, peaks in energy demand and UK geography. The model uses two pathways to undertake assessments: Clockwork: a centralised pathway to Net Zero for the energy system coordinated from central Government; Patchwork: a decentralised pathway to Net Zero for the energy system, with central Government taking less of a role. en used as part of this work as it appears to be the current policy pathway for setting gove ents overall goa

- using smart enabled flexibility services to avoid periods of high demand, benefiting the grid, and reducing running costs when deployed with storage and smart meters; and
- harnessing smart meter data to help DNOs to identify system constraints and direct their investment more efficiently, including where network reinforcement is required to support an increase in heat pumps or electric vehicles (EVs).

The smart metering network therefore has a pivotal role to play in supporting the delivery of government objectives, particularly given it conforms to the highest cyber security standards backed by the National Cyber Security Centre (NCSC).

In the following section, we lay out the major trends that we see dominating the energy landscape: The decarbonisation of energy, transport and heat; and identify a range of potential opportunities for the DCC to support the delivery of Net Zero. It is informed by the work that we carried out in partnership with Energy Systems Catapult (ESC) - using their Energy System Modelling Environment (ESME) model² to help up us better understand the future energy landscape and what this might mean for the DCC network - as well as insights from Baringa Partners.

Solar power is the third most generated renewable energy in the UK, after wind energy and biomass.

Decarbonisation of Energy

According to the Energy White Paper, clean electricity, derived from renewable sources, will become the main form of energy and this in turn will see the arrival of a range of complementary low carbon technologies, such as battery storage. At the same time, the public are becoming more and more engaged with the climate change agenda and they are adopting lifestyle changes to help reduce emissions.

- In the UK, almost half a million people are already employed in the low-carbon economy and its supply chains³
- 45% of electricity generation will come from renewables by 2035⁴
- Domestic storage capacity will increase by 500% by 2035⁵
- "A fully flexible energy system has the potential to deliver material net savings of between £9.6 billion and £16.7 billion per annum in 2050"⁶

Decarbonising energy, however, is not simply about switching to renewable sources. At a high level, all electricity systems need three ingredients in order to operate in a stable manner: energy, capacity and flexibility. At the most basic level, the system needs adequate supply of energy to meet consumption. Next, systems need to ensure there is sufficient reliable or 'firm' capacity to meet the peak demand for energy; and finally, systems need sources of supply (and increasingly demand) which can modulate to keep the system in balance on a real time basis – broadly 'flexibility', whilst also ensuring this is achieved in a way that is affordable for consumers.

Traditionally, all of these needs have been met by large, centralised power stations using fossil fuels, able to deliver adequate bulk energy, sized to cover the system peak capacity, and flexible enough to increase or decrease output to meet fluctuations in electricity demand; but producing high levels of carbon that are not sustainable if we are to meet net zero by 2050.

The COVID 19 lockdown provided a test for how the energy system would cope with changing demand and demonstrated that renewable generation is still too intermittent and therefore requires the rapid deployment of 'always on' generation at short notice. This adds to the balancing costs for consumers and slows down the transition to a low carbon energy system.

The decarbonisation of energy, therefore, requires the ability to store power (when generation exceeds demand) and to reduce demand (when demand exceeds generation). This will require a significant increase in the use of storage assets (such as batteries) and in flexibility services to manage Demand Side Response (DSR). This in turn will require local networks to be smarter and more dynamic, utilising more granular data and pricing signals.

What could this mean for the DCC?

Decarbonisation of energy will lead to the expansion of metering, other connected assets and flexibility services, and require more data to be captured and shared with

45% of electricity generation will come from renewables by 2035³

In the UK almost half a million people are already employed in the low-carbon economy and its supply chains⁴



customers and 3rd parties to enable dynamic and localised management of energy networks and systems. This will not only support the shift to renewable energy, but also save customers money by limiting the amount of investment required in traditional network infrastructure reinforcement. Potential opportunities for the DCC could include the following (subject to regulatory changes):

- Further developing the use of half-hourly data (which can already be provided to authorised DCC Users), to allow secure sharing of higher-frequency, generation/ demand and low voltage network measurements with DNOs and System Operators to help them manage network constraints more effectively.
- Providing DNOs and flexibility providers (such as Charge Point Operators) with the secure communications infrastructure for enabling load control over distributed energy / flex assets such as solar, EVs, heat pumps and batteries;
- Providing a secure, non-commercial central data exchange for the public benefit. For example, more

5 year rolling emissions by sector



Source BEIS (2020) 5 Year rolling emissions by sector

3 Energy White Paper (publishing.service.gov.uk)

4 Source: ESC. 160TWh or 45% of electricity generation will come from renewables by 2035 (37% from Wind and 8% from Solar), with this broken down as 130TWh Wind & 30TWh Solar.

5 Source: ESC. Modelling predicts that domestic storage capacity (other than space heat) will increase by 500% to 125GWh by 2035. 6 Key findings - Flexibility in Great Britain - The Carbon Trust granular price signals will enable enhanced time of use propositions to save consumers money whilst supporting net zero and also help consumers to maximise the value of their generation assets (e.g. solar) or storage assets (e.g. batteries) by optimising the time at which they sell excess power back to the grid.

- Providing a secure, 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.

The DCC has a strong supporting role as the centralised digital nexus for this new renewable and flexible decentralised grid.

Decarbonisation of Transport

Transport is an integral part of our everyday life; however, it also contributes around 28% of UK domestic greenhouse gas (GHG) emissions.⁷ Both electrification and hydrogen offer key pathways for decarbonising vehicles. In the Energy White Paper, the Government sets out its aim to support the acceleration of the transition to more active and sustainable transport.

Electric vehicles will play a vital role in the decarbonisation of transport. By 2035, the Energy Systems Catapult predicts there will be 10.7m electric vehicles and 7.5m households with home EV chargers. This creates an increase in demand and the need for network capacity, particularly at lower voltage levels.

Through smart charging, consumers will be able to help networks manage peak electricity demand and reduce their energy costs significantly (for example, by charging during periods of low demand or exporting excess power from the EV back to the grid in periods of high demand).

In the future, subject to significant regulatory and technological changes, separate energy billing for vehicles may be required which could lead to the expansion of metering capability to enable bill splitting and personalised offerings, possibly by metering at the charge point. The transition away from petrol/diesel engines to electrified transport will also mean a disruption in the administration of fuel duty and vehicle tax, offering opportunities to support new billing and tax regimes⁸, potentially utilising Low Carbon Asset Registration and secondary metering.

What could this mean for the DCC?

The DCC network is a credible, pre-built and highly secure option for rapidly enabling smart EV charging at home and at work, where most of the charging will take place. The benefits of the DCC supporting EV charging would be high standards of cybersecurity, interoperability avoiding consumers being trapped in potentially poor deals, and secure load control to balance the grid when millions of electric vehicles are drawing down or offering back the power consumption of an average home. The changes required to enable these services are not large scale and can be scoped to meet requirements to be set out by BEIS and fulfil policy requirements in this area.

In the future, this could potentially mean a range of new activities for the DCC such as:

- Enabling new Demand Side Response (DSR) entities and Charge Point Operators (CPOs) to adhere to the Government's future standards for cyber security;
- Supporting interoperability of assets (such as EV Charge Points) to enable customer choice and the benefits of competition;

- Supporting secondary metering for e.g. at-home charging;
- Operating as an intermediary for EV roaming settlement;
- Enabling charging infrastructure investors to target projects by providing visibility of locational EV penetration; and





 Providing a low carbon asset register and / or EV demand information to enable more efficient Local Area Energy Planning and grid management planning and operations.

Decarbonisation of Heat

Heating accounts for around a third of all UK greenhouse gas emissions, with residential space heating accounting for nearly 40% these emissions. The UK has already banned gas heating in new build properties nationally from 2025, with many city planning authorities bringing this forward locally. Currently 85% of existing residential properties (c. 24m) use natural gas boilers for heating. A significant proportion of these homes will need to transition to some form of low-carbon heating in order to meet the net-zero target. Heat pumps and hydrogen are forecasted to fill these gaps, augmented by some district heating.

The Government recently committed to 600,000 heat pump installations per year by 2028, representing a 20-fold increase on current rates. It also committed £122m towards a Heat Network Transformation Programme and predicts up to £22bn may need to be invested in this technology to increase supply of heat from 2% to 18-24% of homes by 2050

What could this mean for the DCC?

Subject to regulatory changes there are a range of services that the DCC could provide to support the decarbonisation of heat, such as:

- If secondary meters were introduced for heat pumps this would support both "heat as a service" and "comfort service" business models, enabling innovative propositions and competition.
- Secondary meters could enable data on asset energy consumption to be securely shared with manufacturers to inform bundling of energy services with their products. This would improve interoperability between assets and prevent consumers being "locked in" to a product or supplier.
- The DCC could provide a standardised and secure communications platform for connected heating assets to allow monitoring and control; however, improvements in latency will be required.



Conclusion

We foresee a bold and optimistic future for the DCC as the secure digital spine of the energy system. A significant investment has been made by end-consumers in building

Illustration of the potential future role of Smart DCC in supporting the transition to Net Zero subject to appropriate regulatory changes





9 Source: Source: BEIS - Updated Energy and Emissions Projections - 2019

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 in this unique national asset.

5. Our priorities and plans

Delivering a stable and reliable secure smart metering platform and supporting energy suppliers with the smart meter roll-out will remain our core priority over the next 3 years. We anticipate that the revised Operational Performance Regime will be in force until the end of the licence period to incentivise the DCC to remain focussed on its key performance metrics and thus provide further assurance to our customers.

We will also start to deliver changes in the technology platform and redesign many of our major externally delivered service contracts to ensure the network and supporting services keep pace with technological change and are capable of delivery into the 2030s and beyond. Our Network Evolution Programme will be a key determinant of how we improve our services over the next few years. We are engaging our customers and government closely on this process to ensure the changes are consistent with the long-term needs of the sector and to provide value for money. Likewise, we will create a cost-effective mechanism for our customers to develop new applications which make use of the unique capabilities of the DCC platform, following an overhaul of the Elective Communications Service (ECS) process.

The DCC network is a platform which can support the energy industry more broadly. The successful roll-out of smart meters will bring the full benefits of accurate billing to households and businesses, giving them greater control of their energy use. It will also provide the basic building blocks which will support initiatives such as time-of-use tariffs or control of smart appliances.

We are already designated as a delivery partner for a number of Ofgem's key programmes, including the Faster Switching Programme and Market-Wide Half-Hourly Settlement (MHHS). In addition, we have been appointed by BEIS to deliver the Enduring Change of Supplier (ECoS) Programme. We are pleased to note that the Government has published its decision in response to the consultation on Electric Vehicle Smart Charging confirming that smart metering system has already demonstrated that it can achieve two of the four proposed smart charging policy objectives – consumer protection and grid protection, including cyber security. The smart metering solution

The successful roll-out of smart meters across GB will bring the benefits of accurate billing and greater control of energy usage by consumers was therefore proposed as the current lead option for delivering smart charging in Phase Two.

As the smart metering roll-out completes and the switching service goes live, with customers' consent, we will look for opportunities to re-use the DCC network as a means to raise additional revenues and so to begin to pay back on the investment. In the longer term, we envisage developing wholesale products which can be used by non-DCC users or other solutions vendors to create propositions which make use of the DCC's capabilities, such as in data and connectivity.

These will provide a source of revenue through the reuse of the DCC capabilities in contexts other than smart metering or even outside the energy sector. However, to ensure that existing customers are protected, all such offerings will need to be approved by Ofgem through its Value-Added Services process.

To ensure that the DCC is able to deliver on the priorities outlined above, we will continue to build and evolve our internal capabilities. We have made positive strides in putting our customers, who fund everything we do, at the heart of the DCC. By understanding what our customers need from the system we can better support them to deliver



the successful roll-out of smart meters. We are continuing to make improvements to the way we engage with customers and have started to embed customer engagement skills and behaviours across the business.

Similarly, we continually seek to improve our internal business processes to ensure they are fit for purpose and cost-efficient and effective. Examples of such initiatives which are current in train include:

- Enterprise IT transformation
- Finance Improvement programme
- Enhancement of the commercial function, including the appointment of a new Chief Commercial Officer.

Recognising the importance of articulating our priorities clearly, we developed five strategic pillars, which encapsulate our vision for the next five years. We set these out below.

This Business & Development Plan sets out how we will deliver each of the five strategic pillars, ensuring that we remain focused on delivery and continue to meet our core and mandated obligations. Table 1, right sets out the key workstreams under each pillar.

We sought stakeholder feedback on our priorities and plans at a series of workshops and webinars in February and March 2021 and via a formal consultation in late June. Their input has helped to shape this document.



Table 1: Key workstreams aligned to Strategic Pillars

Status	Strategic Pillars	Programmes-Opportunities	2021/22	2022/23	2023/24	2024/25*	2025/26
	Smart Meter Roll-out	SMETS1 enrolment and adoption					
	Smart Meter Roll-out	Dual-band Communication Hub (DBCH)					
	Mandated	Faster more reliable switching					
	Smart Meter Roll-out	Enduring Change of Supplier					
		Network Evolution					
		Comms Hubs & Networks (CH&N)					
	Mandated	Data Service Provider (DSP)					
		Trusted Service Provider (TSP), Security & SMKI					
Live		Test Automation and Prod Proving					
programmes	Smart Meter Roll-out	DNO Transformation					
	Mandated	Market-wide Half Hourly Settlements					
	Culture and Capability	DCC Transformation					
	Culture and Capability	Driving costs down					
	Culture and Capability	Cost Transformation					
	Culture and Capability	DCC Price control framework					
	Culture and Capability	Regulatory Performance Incentives					
	System Enhancement	Security					
	System Enhancement	Enhanced Testing					
	Mandated	Electric Vehicle (EV) Charging					
Future Opportunities	System Enhancement	Elective Communication Services (ECS)					
	Re-use	Testing Services					
	Re-use	Wholesale Products					
	* End of licence 2025						





Development and Implementation



Operation and Continuous Improvement



5.1. Smart Meters - Support the successful smart meter roll-out across Great Britain by maintaining and improving the DCC'S secure data network and our complementary services.

Ensuring reliability and stability

The DCC's network is performing well against the Smart Energy Code (SEC) specification, with WAN coverage levels at 99.5% of properties in the North Region and 99.25% in the Central and South Regions. Nevertheless, we are conscious that what our customers need from the smart metering network in order to deliver the roll-out may actually differ from what was originally envisaged.

We have been paying particular attention to improving operational stability in the North region, working with our infrastructure partner Argiva, device vendors and our customers to resolve key performance issues. We are now achieving a green rating in 31 out of 34 of our service level performance measures. However, we remain conscious that we need to resolve these outstanding issues, and have recently agreed a commercial reset and service improvement plan with Argiva to ensure that we green across the board.

We have also been working closely with customers to better understand their evolving needs, and our service providers to understand the art of the possible, so that we may facilitate those changes to the platform in line with formal governance requirements.

Service improvement plan for the North region

Following extensive discussions with Argiva we have agreed the following action plan to deliver a step change in service which will be implemented over the next 6 months:

There are two key working principles supporting the delivery of this plan:

- Evidence-based review of action effectiveness. For all six actions, we will monitor performance on an ongoing basis to ensure it delivers the promised benefits
- Transparency with industry. We will keep our customers fully informed by sharing our plans, progress and outcomes with the relevant oversight bodies

Further to these short-term improvements, Argiva is developing an enduring plan for the uplift of the network architecture to deliver improved infrastructure. This is an uplift to the existing specification and consists of four main system development releases and is scheduled to be completed by December 2021. These enhancements will deliver a significant improvement to firmware delivery and 'right first time' performance. Increasing the rate of transmission will greatly reduce job completion times.

The DCC Service Management has taken thoughts and feedback from our service users and this engagement will continue throughout the performance improvement process.

We are confident that these measures will deliver a significant improvement in service and significantly increase capacity on the Argiva infrastructure. Modelling and trialling have shown these developments will overcome the deficiencies we see in the current solution. The plan to deliver improvements in Argiva's service is working well and we should start to see the benefits from this release in August 2021. It is very important for us to understand the impact to live customers affecting services.

For that reason, we will keep reviewing each day's performance and outages will be monitored closely and workshopped to completely understand the actual reasons and what is the impact and what mitigation we can bring going forward.



Dual-Band Communications Hubs (DBCH)

Dual-Band Communications Hubs (DBCH) will bring an additional 25% of properties in Great Britain within the scope of the smart metering programme, extending the coverage and benefits to approximately 95% of all GB premises. They have the capability to overcome certain physical challenges, such as weaker signal strength in buildings with thick walls. DBCH will improve the installation process, cutting out unnecessary assessment visits and reducing the number of failed installations caused by the limitations of Single-Band Communications Hubs.

We recognise that the provision of DBCH has proved to be a more extended process than was originally envisaged. The DCC has worked in collaboration with Telefonica to agree a new delivery plan for the new DBCH, specifically:

- Toshiba 13.3 Launch 13th August 2021, initial volume available 3rd Dec 2021, mass supply to DCC customers scheduled for 24th March 2022; and,
- WNC 2.0.0.6 Launch date 3rd Sep 2021, initial volume available 12th Jan 2022, mass supply to DCC customers scheduled for 22nd April 2022.

Our focus as a business and within the Board is securing the successful delivery of the new communication hubs in line with the latest revised timeline. The DCC will continue to use all the levers available in the contract with Telefonica to hold them to account on these revised delivery timelines. The DCC will continue to work with the SEC Panel and industry to look at more efficient approaches, both in terms of time and cost (including meter availability.

Fylingdales

As SMETS1 enrolment and adoption gains pace and critical There is an area of North Yorkshire which contains the RAF mass of meters are migrated onto the DCC network, in radar base at Fylingdales. To avoid any interference with an effort to understand the functionality and technology

Table 2: GBCS Delivery Timeline

	Timelin
GBCS 2.1 FW North Dual Band CH	Now available on the Ce end of June 2021- Delive
GBCS 2.1 FW North Single Band CH	Available on the CPL from
	CPL achieved in June 20
GBCS 3.2 FW North Dual Band and Single Band CH	Both expected to be ava of August 2022
GBCS 3.2 FW Central and South Single Band	Expected to be available
GBCS 3.2 FW Central &South Dual Band	Expected to be available of January 2022
	For the Central & South re

the radar base, we will have to use a DBCH in this area which operates at a different frequency, though it will have the same devices and emulators as a standard hub. The delivery of this custom communications hub is tracking to plan and is expected to be in supply by February 2022.

Great Britain Companion Specification (GBCS)

The GBCS sets out data security and other operational standards for communications hubs. BEIS continually reviews GBCS standards to ensure that data security is maintained in line with new and emerging threats. The DCC is mandated by BEIS to develop, test, and deploy new firmware (FW) to all operational communications hubs in line with each update of GBCS.

We are working to achieve compliance with the most recent updates of GBCS versions 2.1 and 3.2 in the North (Argiva's EDMI communications hub) and 3.2 in the South and Central regions (Telefonica's WNC and Toshiba communications hubs).

The current delivery timetable is shown in Table 2 below.

SMETS1 Enrolment and Adoption

The SMETS1 Enrolment and Adoption Programme will enable the migration of more than 16 million firstgeneration SMETS1 smart meters onto the DCC network where they will be fully interoperable between energy suppliers. This will allow consumers to switch energy suppliers seamlessly without losing smart functionality and will also deliver significant savings to the industry. It will stimulate competition in the retail market and allow consumers to enjoy the full benefits of products and services which depend on smart metering.

ine
Certified Product List (CPL) and expected to be in supply at the ivered
om the end of June and in supply November 2021
021 and on track for In Supply Nov 2021
vailable on the CPL at the end of April 2022 and in supply by end
le on the CPL mid-Jan 2022 and in supply end April 2022
e on the CPL early September 2021 and in supply end of

is the timeline is based on delivery of both Toshiba and WNC

scope of the meters enrolled, the DCC will undertake a study on the SMETS 1 migrated base. The study will look at current device functionality, the scope of the devices ability to be optimised or enhanced, the expected life span based on natural end of life and also technology limitation that influence their end of life. Much of this information is understood however there are still gaps. DCC will use this information to understand the ability of the devices to receive future SEC modifications and or elective services, we will also use this information to consult on the design of policies that support recommendations on scope of in life changes, options at end of life and also the economics or viability of fixing devices or swapping them out.

This is a highly complex project and very technically challenging, involving multiple hardware and software combinations operating in a live environment.

The DCC's strategy is to enable the migration of SMETS1 meters in three main cohorts. See Table 3 below.

The migration and operation of each cohort requires the deployment and integration of a new platform. The IOC platform was deployed in 2019, when migrations began, and the remaining two platforms for MOC and FOC were deployed during the year.

Final Operating Capability (FOC)

Now that the capability to migrate and operate FOC meters is live, the DCC must assess every combination of hardware and firmware to ensure they can function in an interoperable way following migration. This is undertaken through a process called Device Model Combination Testing (DMCT) which requires us either to test each DMC or to assess it as being substantively equivalent to one that has already been tested. DMCs that have been approved are added to the Eligible Products Combination List (EPCL), at which point they are available for migration. The DCC completed testing for all the DMCs that it can in the IOC and MOC cohorts -(509 in total) in 2020.

Several issues with the firmware on SMETS1 communications hubs, forming part of the FOC cohort were identified in SIT testing. This has delayed us in adding some device combinations to the eligible products list, with a knock-on effect, meaning that migration of the Final Operating Capability cohort is still at a very early stage.

We are prioritising migration of the remaining dormant meters and we aim to complete these by the end of September 2021. Migration of active meters will be completed within the agreed 12-month timeframe as stipulated to energy suppliers in line with Ofgem requirements. However, this is dependent on suppliers meeting their migration forecasts and, on some customers, resolving issues with FOC comms hub firmware.

Table 3: SMETS1 Delivery cohorts and volumes

Enrolled Meters	Initial Operating Capability (IOC)	Middle Operating Capability (MOC)	Final Operating Capability (FOC)	Total
Cumulative	2,864,406	1,261,678	186	4,126,270
Active	1,973,628	348,417	26	
Dormant	890,778	913,261	160	



Performance

To date, more than 4.5 million SMETS1 meters have been successfully enrolled on the DCC network, including 1.75 million previously 'dormant' meters which have had their smart capability restored. The DCC have provided capacity to migrate 550,000 installations a day.

Our migration performance remains strong, with over 99% of migrations delivered 'right first time' (RFT) every week. See Solution Performance graph, right.

Post migration

Our customers have welcomed the fact that our Migration Control Centre (MCC) and Early Life Support (ELS) capabilities are now established and have matured, helping the industry to coordinate meters in readiness for migration and providing real-time monitoring post migration.

Solution Performance (RFT 1%)



% of Migrated Devices having changed supplier

9.00% 8.00% 7.00% 6.00% 5.00% 4.00% 3.00% 2.00% 1.4% 1.7% 2.1% 1.9% 1.4% 1.7% 2.1% 1.9% 1.0% 0.1% 0.4% 0.8% 0.4% 0.4% 0.5% 0.05% 0.0% 0.1% 0.1% 0.2% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.2% 0.1% 0.2% 0.2% 0.1% 0.2% 0.1% 0.2% 0.2% 0.1% 0.2% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.1% 0.2% 0.1% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.1% 0.2% 0.1% 0.1% 0.2% 0.1% 0.1% 0.1% 0.1% 0.2% 0.1% 0.1% 0.1% 0.2% 0.1% 0.1% 0.1% 0.1% 0.2% 0.1% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.2% 0.1% 0.1% 0.0%0.0

Following successful migration, it is imperative that energy suppliers make the meters operational to ensure that the consumer can fully benefit from the SMART functionality. We are working closely with our customers, BEIS and Ofgem to ensure they are made operational as quickly as possible.

- 57% of all dormant meters have been made operational following migration and we are working to ensure that as many as possible can operate in smart mode
- 98% of active meters have been made operational following successful migration on to the DCC Network
- We have established a security testing capability for SMETS1 devices to protect the DCC system
- Consumer switching has increased. 316,154 meters on our network have registered a change of supplier since migration, representing 8.14% of the total at the end of March 2021. See % Migrated Devices graph below.



Network Utilisation and Capacity Planning

We report regularly on the performance of our products and services through a variety of channels including monthly, quarterly, and annual performance reports – all of which are available from our Technical Operations Centre. The following sections summarise the current condition of the system and assess its future capacity.

Volume of installed meters

Smart meters commissioned on the DCC's network increased between April 2020 and March 2021, taking the total to 10,782,580, approximately 20% of all meters in

Great Britain. See Monthly Cumulative Installed / Enrolled Graph below

These are comprised of 3,856,943 first-generation (SMETS1) smart meters and 6,925,637 second-generation (SMETS2) meters. Given the current rate of growth, we anticipate reaching 20 million active, connected smart meters commissioned on our network by March 2022.

Network coverage

SMETS2 Communication Service Providers have now delivered against their maximum contracted Smart Meter Wide Area Network (SMWAN) coverage levels across



Monthly Installed / Enrolled Smart Meters



Communication Service Providers Coverage Levels

CSP North			CSP South		
Date Due	Percentage of Properties	Delivered	Date Due	Percentage of Properties	Delivered
01/01/2018	99.25%	Yes	01/01/2018	97.75%	Yes
01/01/2019	99.35%	Yes	01/01/2019	97.75%	Yes
01/01/2020	99.40%	Yes	01/01/2020	97.75%	Yes
01/06/2020	99.55%	Yes	01/01/2021	99.25%	Yes

Great Britain. These contracted coverage levels are at least 99.5% of properties in the North Region and at least 99.25% in the Central and South Regions. See tables to right and above.

Historic incident levels

The number of incidents per comms hub has fallen and stabilised over time. This downward trajectory demonstrates the extensive service improvements that the DCC has delivered while also working with customers to reduce the number of post-commissioning obligation failures. We will continue to engage with service providers and manufacturers to drive down incident volumes.

Incidents per Comms Hub



CSP Central					
Date Due	Percentage of Properties	Delivered			
01/01/2018	97.75%	Yes			
01/01/2019	97.75%	Yes			
01/01/2020	97.75%	Yes			
01/01/2021	99.25%	Yes			

Alert incident types – volume management

As the SMETS2 platform scaled up, it became clear that the number of alerts generated was significantly higher than anticipated. After analysis, we determined that there were several distinct groups of alert types: customer behaviour, meter issues, pre-payment interface device (PPMID) issues, Comms Hub issues and most commonly, interoperability issues between meter, PPMID and Comms Hub variants.

Action to assess the issues and find solutions has reduced the volume of alerts by over 60%. We recognise that even though we are performing in line with SEC requirements, service outages have a significant impact on customer confidence in rolling out smart meters, particularly pre-payment. Therefore, as an additional measure, we have increased the scale of the Data Service Provider solution in order to manage the higher-than-anticipated volume of alerts.

Working to resolve issues

We share the results of these activities on a monthly basis with our customers, both directly on a one-to-one basis and more broadly through industry groups. Key actions included:

- Direct liaison with customers to inform and agree remediation plans
- Working with the DCC service providers to fix issues and mitigate impacts
- Collaboration with customers and meter manufacturers to analyse and mitigate interoperability issues

As migration of SMETS1 meters increases, we are taking the same approach of reporting progress on a regular basis and working with our customers and service providers to mitigate any risks.

Testing Capacity

Our test labs in Manchester provide flexible and modular space to support our customers' testing requirements. Here we aim to develop an understanding of usage profiles for future releases, firmware upgrades and new device types. Our customers and other users can also use the labs to test their own products.

Forecasting of core communication and connectivity capacity

The DCC performs regular capacity planning in order to meet our service users' business needs and to anticipate demand from potential new requirements. This allows us to prioritise investment to support planned growth and to make sure that capacity stays in step with demand. We monitor and model service traffic, service performance, service utilisation and the supporting infrastructure. We engage with our partners to build strategic plans that address the future requirements of the service and enhance its resilience and agility as it scales up.

All devices generate service request messages, which our customers forecast guarterly for the following eight months. We combine these with operational insights to create a long-term aggregate forecast of traffic through the communications infrastructure.

The increasing breadth and depth of high-frequency data captured today by the DCC is being leveraged to provide



Impact of COVID-19

In the wake of the COVID-19 pandemic, smart meter installation volumes fell by 95% during the first nationwide lockdown from late March 2020 as non-essential visits were halted. Installations returned to their pre-COVID volumes by September 2020, before the second nationwide lockdown in November 2020 drove installation volumes down again, but this time by just 2.5% monthon-month. By March 2021 installation volumes had largely returned to their pre-COVID levels.

Monthly Service Request Volumes





Monthly Device Alert Volumes



Forecast of SMETS2 and service volume requests

In March 2021, the DCC network carried almost 400 million service requests, at an average rate of 147 per second. Between April 2020 and March 2021, service request volumes increased by 240% in response to the growth in the number of smart meters commissioned on the DCC's network. Once all meters are commissioned on the network, we expect to carry more than 3 billion service requests a month, at an average rate of 1,100 per second.

In addition to these service requests, the DCC network carried 1,323,607,415 device alerts in March 2021. Device alert volumes are much greater than expected when the system was designed. There are many reasons for this, including communication hub and meter interoperability issues, firmware defects in OEM (Original Equipment Manufacturer) products and the side effects of customer behaviour. As discussed on volume management section, the DCC is working to manage these alert volumes down.

Service Centre Capacity

The DCC Service Centre provides the primary point of contact for customers regarding operational matters for both SMETS1 and SMETS2 services. It operates 24 hours a day, 365 days a year through a team of 70 people split between our Manchester and Ruddington sites. See graph below. Since the start of the live service, this capability has been provided under contract by Capita plc. A contract extension has been agreed with Capita for the next 2 years predicated on no headcount increase for the SMETS related workload. The rationale behind this is two-fold:

- Installation-related failures will reach a ceiling as the number of trained installation engineers peaks
- The numbers of new SEC parties onboarding on to the DCC system will tail off

DNO Transformation Programme

The DCC acknowledges that it needs to improve the experience of Distribution Network Operators (DNOs) as a core customer group and improve their confidence in us as a strategic partner.

The DNO Transformation Programme will provide an enhanced focus on meeting the DNOs' requirements in





Benefits

The programme will establish accurate, automated reporting for key performance indicators and develop data insight to enable performance improvement. Interim dashboards will be available by June 2021 and a full version by September 2021.

It will tackle the backlog of issues affecting DNO integration so that the DCC system provides the right information at the right time. It will also improve effectiveness of industry device testing for DNOs and feature a strategic DNO Engagement workstream.

Changes related to Power Outage Alerts (POA) are planned to be delivered via a SEC Modification and are scheduled for the November 2022 release. This will improve the timing, speed and quality of outage and restoration alerts.



We will work with DNOs to manage incidents more effectively. We will develop processes to identify and address device-related defects, working closely with device manufacturers and tracking issues through to resolution. We are assessing how we can improve engagement with DNOs in device testing and existing services.

DCC Operations - Operating Live Services

DCC Operations will continue to face significant challenges over the coming years, including the increasing volume of SMETS2 installations, the migration of dormant and active SMETS1 meters and the launch and early life of the new Central Switching Service. To ensure that we are ready to face these challenges effectively, we have taken several steps across all core elements of the live services including the following.

- Enhanced Supplier Management: the DCC has improved its approach to formally driving supplier performance recovery plans based on a set of specific triggers and has helped to secure positive improvements
- Enterprise Capacity Management: We are now systematically monitoring the scaling and interaction of services across the DCC Ecosystem. This work has helped drive much improved system scaling activities and drive down cost
- Incident Reduction: the DCC has incurred fewer service impacting incidents, whilst also delivering new SMETS 1 releases. This has been achieved through effective mitigation, identifying root causes, and coupled with enhanced supplier management and improved capacity management

Operational customer relationship management

We recognise that we have not always been effective or proactive in our day to day customer engagement and have not always adapted our processes to support users in the most effective manner required. We have recently reshaped our service operations team to be more effectively aligned to different customer types. Teams are now designated to specific customer groups so that they can build better knowledge and understanding. We are working with meter manufacturers to better understand their products and in the past 12 months we have performed joint investigations with them, allowing us to resolve many issues. This approach will continue to strengthen our knowledge and capability to support customers and be better aligned to support their specific needs

Improving knowledge

Our understanding of our customers and their business, and how we align to better support their needs, has

progressed throughout the year. Our iterative approach will continue to improve engagement, understanding to ensure we are more effective in managing customer issues and risks and can progressively better align our operations to meet the needs of our customers.

Further, we have worked extensively with meter manufacturers to better understand their products. In the past 12 months we have secured positive engagement, where we share issues and perform joint investigations. The outcome is that we have helped to address multiple customer issues, reducing risk and impact.

Improving ways of working

We recognise that the SEC modification process can be too long. We have tried to reduce this by running a number of SEC modification trials with the support of our customers. The trials have been a positive step, and we found that the refinement stage was reduced by around 50%. Overall, this means, shorter lead times and less effort because the final SEC modification is already agreed, understood and demonstrated. We will continue to review and refine this process over the coming year.

Enduring Change of Supplier (ECoS)

Smart metering devices use secure, signed certificates to validate that remote parties are authorised to communicate and operate them. One of these certificates relates to the energy supplier and so needs to be refreshed whenever a consumer switches supplier to ensure that billing is correct. When smart metering was implemented, a temporary solution was introduced, known as Transitional Change of Supplier (TCoS), to minimise the impact to suppliers during the mass roll-out of smart meters.

TCoS is now being replaced by a permanent solution known as Enduring Change of Supplier (ECoS), which provides greater separation between the different elements of our supply chain. Ofgem appointed the DCC to deliver this capability.

Timescales

Over the next year, the ECoS Programme Team will work with the industry and Ofgem to ensure smooth delivery, followed by the migration of the existing TCoS certificates to the new ECoS certificates. This will reach over 25 million devices by April 2023.

Procurement for the ECoS programme has focused heavily on ensuring collaborative undertakings from all suppliers. The design build and test (DBT) phase is due to be completed by June 2022, at which point the DCC will stand up the live service. Migration from TCoS to ECoS will take place from June 2022 to April 2023



Smart Energy Code (SEC) System Releases

In-Life Change Programme

The Smart Energy Code (SEC) is a multi-party agreement and defines the rights and obligations of relevant parties involved in the end-to-end management of smart metering. SEC Modifications are industry-wide requests for changes to our services and we are required to deliver two SEC System Releases each year in June and November.

In early 2019, we established a dedicated In-Life Change (ILC) team to focus on the delivery of SEC Modifications. This led to the first delivery of a SEC Systems Release in November 2019.

A further release was delivered in June 2020 ahead of schedule and under budget, with a cost saving of $\pounds 6$ million. The November 2020 release was delivered on time and within budget.

Throughout 2020, we continued to improve our ILC process and system designs, including the development of dashboard reporting and fixed-price impact assessments, giving better visibility of progress throughout the release cycle.

Forward look

SEC releases this year relating to SMETS2 meters will include firmware updates to specific home area network (HAN) devices and additional technical specification changes. These will be delivered over multiple releases due to their size and complexity.

The November 2021 release is on track, we have defined the scope of releases for 2022, and planning for 2023 is already taking place.

In addition, the ILC team is part of a wider team established in response to the introduction of the Retail Energy Code (REC) and is looking specifically at how change will be delivered whilst respecting the requirements of both the SEC and REC. This will also guide our preparations for and operation of the new Central Switching Service and the incorporation of SMETS1related change.

Improving oversight and governance

We recognise that we must be more proactive with service providers in solution design. To achieve this, we are creating a new role of Head of Design who will provide oversight on end to end design process for all system changes that go through the SEC modification process.

We are implementing a more co-ordinated approach to change across the DCC and providing better visibility of enabling services, such as testing. To assist in this, the ILC team will take ownership of non-SEC changes, excluding maintenance, and co-ordinate them through a single annual release.

Standardised Customer Analytics Reporting

Over the past year, we have invested significantly in analytics reporting and monitoring to identify the causes of performance failings across the DCC ecosystem. This reporting is helping customers and the DCC to identify issues with the system.

It has identified differences in performance between our Service Providers and customers. The Service Delivery Management team picks up those differences and addresses these with the Service Providers. Where there are differences in our customers performance, they are addressed via our Service Management team. We have measured the difference in average performance across all variables in shared systems and we plan to use this work to support parties to make improvements.

We are working with our customers to identify the key metrics for each of the business processes that they initiate within DCC systems. We will then create reporting packs, with their input, which will include:

- Performance measures against industry average and industry best for benchmarking
- Anonymised league tables
- Datafiles for business processes, enhancing customers' ability to diagnose issues

Examples of the types of reporting to be included within the new packs can be seen, right.

This will enable customers to create a roadmap of improvement based upon their individual business priorities. the DCC will support them in the delivery of these via its existing teams, service providers and forums.

Discussions with our customers have suggested that the appropriate mechanism for this reporting would be via an appendix to the Smart Energy Code. Following agreement of customer requirements, the DCC will raise a SEC Modification to progress delivery. It occurred by the end of June 2021. Dependent on timescales agreed with industry, the DCC should begin delivering an initial build for this functionality by the end of 2021.

5.2 Mandated Programmes -Successfully deliver the programmes beyond smart metering that are mandated by Government or the regulator in a cost-efficient and transparent way to enable the transformation of the energy system.

The DCC has been selected by the Government to deliver several key changes in the retail energy market which closely align with our core smart metering programme. We are Ofgem's designated delivery partner for several initiatives, including the Faster More Reliable Switching Programme and the Enduring Change of Supplier Programme, as well as a contributor to the Market-Wide Half-Hourly Settlement Programme.

In addition, we are in discussion with BEIS and Ofgem about potential future applications of DCC capabilities to deliver further policy objectives within the energy sector.

CoS Metrics - Attempted Percent Historic Rate



Reforming the Retail Market

Faster Switching

As Ofgem's key delivery partner, we are helping to bring about significant change in the energy market which will make next-working day switching a reality. This requires us to manage the consolidation of 27 existing and new systems and the integration of about 200 licensed parties into a single core system, the Central Switching Service (CSS).

In October 2020, the programme underwent a managed re-plan requested by the industry as a result of the COVID-19 pandemic. As a result, the 'go-live' date for the new service has been rescheduled to the summer of 2022.

Milestones

The switching programme is on track and is well advanced in testing with several key milestones having been achieved. The remaining major milestones are as shown in Table 4 overleaf.

Table 4: Switching programme milestones

Action	Status
Testing of transition processes to new system	October 2021
Operational Testing (OT), Tranche 1 and 2	10 September 2021
UEPT Test Assurance (all tranches)	26 November 2021
E2E Testing scheduled to complete	15 December 2021
Completion of Transition Testing Stages 1, 2 and 3	04 March 2022
REC v3.0 Go Live	16 May 2022
Readiness Assessment for Go/No Go	27 May 2022
Go-live date for new system	Targeted for 06 June 2022

Address data

The quality of address data for domestic consumers is essential in improving the switching process. We have completed the initial work of automatically matching the industry's address data to a "gold standard" address database, as well as the pilot phase of our interactive address matching project. This is focused on improving the quality of addresses which are more difficult to match.

We are working with source data providers to improve overall data quality by ensuring that meter points are accurately matched to premises' addresses. This will save consumers' time and inconvenience when switching, as well as reducing costs for suppliers.

Technology roadmap

We want to ensure that the switching system remains fit for purpose, so we commissioned an analysis of the changes and innovations likely to affect switching in future years. This work influenced our choice of the solution we procured from our service provider, Landmark. From day one, it will have the functionality to handle any future large-scale increases in switching, ensuring that the system can remain agile and meet the needs of our customers for many years to come.

Engagement with customers

Effective engagement is essential if we are to make the transition to faster, more reliable switching. We have hosted two 'Switching Summits' with the industry and organised several shorter, focused online briefing sessions on topics of interest, such as service management of the CSS.

We continue to support the programme's Consumer Journey Forum, which was set up to ensure that energy suppliers and the programme team understand the impact on consumers of introducing the new switching arrangements. We have conducted research into consumer views on switching and the barriers they experience.

Market-Wide Half Hourly Settlement (MHHS)

The introduction of Market-Wide Half Hourly Settlement (MHHS) will increase competition in the energy market to the benefit of the consumers and support the Governments ambitions for decarbonisation. Access to half-hourly data will allow industry participants to bring new offerings to the market, differentiating themselves and providing the consumer with increased choice. This will build on the benefits that the national roll-out of smart meters is delivering.

Implementation is expected to take four and a half years, with completion forecast for October 2025

Initial steps

To ensure our readiness, we have engaged fully with Ofgem's MHHS team and other partners. We have attended Ofgem's architectural working group to help shape the Target Operating Model (TOM), which is the preferred method for introducing MHHS, and participated in the consultation process, providing cost modelling and other analysis.

The DCC will raise the required SEC Modification on behalf of Ofgem and work in partnership with them to support the change through the SEC governance process.

We have produced an initial end-to-end project plan which has been fed into Ofgem's wider programme planning. The changes implemented by the DCC will be part of a much wider industry change programme, largely based on the Balancing and Settlement Code (BSC), but also affecting the Retail Energy Code (REC) and Distribution Connection and Use of System Agreement (DCUSA).

Table 5: Proposed milestones for MHHS programme

Action	Status
SEC change process started	April 2021
SEC change process completed	January 2022
Non-SEC changes delivered	Nov 2022
DCC Design Build Test (DBT)completed	January 2023
Meter Data Retriever User Integration Testing completed	April 2023
Central Settlement System Ready for migration	September 2024
Start of Unmetered Suppliers/Advanced Meters migration	October 2024
Start of smart/non-smart migration	November 2024
Migration complete	October 2025
New settlement timetable	November 2025

Timescales

We plan to agree a final and costed solution by February 2022 and anticipate the start of Systems Integration Testing in January 2023, with final implementation in the November 2023 SEC Release.

Ofgem will be setting up a new Strategic Programme Management structure to govern the implementation of MHHS, though the DCC will still be expected to report through the SEC governance process and update the wider programme on progress.

We will need to make the necessary system changes across our network to accommodate the volume of MHHS data and its recovery at regular intervals. This will include changes to both the SMETS1 and SMETS2 architecture.

Network Evolution Programme

The Network Evolution Programme (NEP) focuses on the future of DCC operations in the smart metering environment. It explores how new processes, systems and technologies can improve the live service, reduce the operating costs of our system and, above all, secure the continuity of a critical part of the UK's national infrastructure. NEP was triggered by; the future obsolescence of the 2G communications network, the forthcoming Data Service Provider (DSP) re-procurement, as well as evolution of the network to take advantage of lower cost technology options such as cloud-based services

The programme comprises four distinct programmes:

• Network Evolution DSP (Data Service Provider). Designing and procuring data services which are secure and sustainable, with a reduced operating cost, capable of rapid and cost-effective change in response to market and customer demand. This work will include investigations into how cloud computing and microservices could contribute to a new design for the DSP to de-risk the overall re-tendering activity.

- Network Evolution Communication Hubs & Networks. Designing and procuring future-proof communications hubs and networks (CH&N) through technologies with a longevity of at least 15-20 years so that the full benefit of assets' operational life is realised from the point of installation.
- Network Evolution SMKI. Securing a tactical extension to the Smart Metering Key Infrastructure (SMKI) security service in a cost-effective way, followed by a strategic procurement of the enduring solution.
- Network Evolution Test Automation. Designing and implementing automated testing of SEC releases to achieve faster and lower-cost testing with additional enhancements that will allow the DCC to confirm the efficacy of changes.

NEP is driven by advances in technology which continue to reshape the energy landscape. We must make sure that the DCC network keeps pace with and prudently anticipates that change, while also maintaining continuity of service to the energy industry as contracts with service providers expire. These issues are being addressed urgently for a variety of reasons:

• The contract for the provision of the DSP service with CGI was due to expire in October 2021 with the option of up to three one-year extensions and a final termination date of 31 October 2024. We must





ensure outcomes are met for the design, procurement, and migration strategy for the future DSP.

• The existing 2G/3G networks in use in the South and Central regions have been superseded by 4G networks, with 5G on the horizon. There is a high probability that the older networks will no longer be supported in the medium term and the DCC will need to modernise its communications provisions accordingly.



- available in the ecosystem, the more we can ensure that assets fulfil their life span.
- BT's contract for the SMKI service, also known as Trusted Service Provider (TSP), is due to expire in April 2022. A tactical solution will be implemented before this date on a three-year plus one-year agreement, while an enduring TSP Programme has been set up to re-procure all TSP Services by April 2025.
- There is a continuing need to drive competition within the supply chain to reduce costs, improve service and accelerate continuous improvement by, for example, adopting a future testing strategy which provides automated set up.
- NEP will ensure that customers always obtain value for money and that opportunities for competition are integral, so that all service providers are subject to continual competitive pressures. We have agreed the CH&N outline business case with BEIS, the SEC Panel and its subcommittees. We continue to engage with our customers as we prepare the final business case for BEIS consideration and develop the outline business case for Network Evolution DSP.

Timescales

The aim of the programme is to deliver a 'future state' Data Services Provider by October 2024.

The overall programme is in the early phases of development, as follows:

- DSP is at the scoping phase, to define the future requirements gathering commencing early 2022 and business, technology, and security landscapes, implementation by 2025. opportunities, and challenges over the next 10-plus years. We are consulting with the industry on the future • Our test automation and robotics workstream is services to be delivered. The new DSP will be procured currently running an active procurement exercise to be implemented at the earliest opportunity, and by against an agreed design agreed with customers with October 2024 at the latest. The DCC have notified a target of deployment in Spring 2022. This will enable CGI for up to three one-year extensions with a final 24/7 working and a significant reduction in the time termination date on 31 October 2024. and cost to complete regression testing
- CH&N is at the shaping stage and is running a procurement for 4G Single-Band Communications Hubs to come to market in 2023, with dual band to follow in Q2 2024. The DCC are also exploring the option to upgrade this with further services such as roaming and switching.



• The TSP Programme has concluded an investigation phase in collaboration with the National Cyber Security Centre (NCSC). In response to BT's existing DigiCert Symantec SMKI platform retiring in April 2022, our TSP platform will be enhanced in two phases, first a tactical extension of BT services from April 2022 to April 2025, migrating to a new BT platform. This will be followed by a full re-procurement of enduring TSP services, with

The programme will deliver over the next three or more years. the DCC will continue to engage with our customers and stakeholders on Network Evolution. It is critical to our success to ensure that we listen to the feedback from our customers and stakeholders and use this feedback to help shape our design and delivery plans

	2023		2024
x Procure		DBT / Migrat	e / Deploy
n-core services		Transition Co	re Services

Electric Vehicle - Smart Charging

Current industry estimates are that between 60–85% of Electric Vehicle charging will take place in either at home, on private driveways or on street, or at work.¹⁰ To meet this demand, more than 20 million private charge points will need to have been deployed. A transition of this scale requires significant investment and effort and will need to balance several outcomes including:



Considering these, the Government has set out the following objectives for EV charging infrastructure:





The Electric Vehicle Smart Charging Consultation 2019¹¹ outlined the Government's approach and objectives for smart charging of EVs. This consultation also identified the smart metering system as a potential platform for smart charging, providing both full interoperability for consumers and end-to-end cyber security - achieving the objectives on Consumer Protection and Grid Protection.

Many of the EVs that charge at home are likely to be on the DCC network. We are exploring, with BEIS, the potential for the smart meter infrastructure to provide a flexible EV smart charging network with security, scalability, and interoperability at its heart.

Proof of concept

The DCC is working as part of a consortium led by Toshiba and including Pelion, charge point manufacturer Vestel, and the EV charging specialist has.to.be. to provide a proof of concept of this EV smart charging technology. This project will yield vital data necessary to inform future national strategies for EV smart charging.

The project will trial a proof-of-concept using a Vestel charge point installed at the DCC's Manchester testing facility and demonstrate how current technology can be cost-effectively modified and linked to the DCC's secure national network. This work seeks to augment, rather than replace, the current approach to EV charging. It aims to break down some of the most significant barriers facing consumers and the industry - specifically security, interoperability, and load management. 5.3 System Enhancement -Ensure that the DCC network remains fit for purpose and is able to respond to change and future demands by adopting new technologies and seeking innovative ways of working with our service providers to ensure ongoing improvements and value for money for our customers.

Elective Communication Services

The Elective Communication Services (ECS) process allows an existing customer to commission the DCC to develop bespoke messaging services on our platform. These new 'elective services' are delivered on request with a six-month exclusivity period. To date we have seen very low demand for this service. Our customers tell us that they see the process as too expensive, too slow, and too restrictive, both in terms of its scope (limited only to new message types) and limited commercial value given the short exclusivity period.

Accordingly, we are engaging with customers on a proposed overhaul of the ECS process to provide 'self-serve' access to the data and communications capabilities

Table 6: ECS Overhaul Timescales

Activity	Summary
ECS Overhaul	Establishing pilot projects and assessing the wholesale SEC changes to the process

Table 7: Enhanced Testing initiatives

urer Vestel, and ide a proof of	Initiative	Description	
gy. This project re national	Optimise TS reporting	Optimise reports produced by Testing Serv	
ng a Vestel ister testing	CRM	Introduce CRM tool as a centralised place accessible	
ology can be DCC's secure	iLMS	Further develop functionality of test lab to and data accuracy	
harging. It ficant barriers	DCC website review	Review and update of the content on Test	
Lany Security,	Team's training plan	Develop a training plan for the whole Test the skills matrix	
	Quality of info/ documents	Increase quality of information that is publ	

10 ubiCharge: EV charge points | ubitricity Charging & Billing Solutions

11 Electric vehicle smart charging - GOV.UK (www.gov.uk)

within the DCC network, that would enable them to develop new products and services in the way that they want. Customers have told us they require simple, selfservice on demand capability with clear pricing in advance.

The DCC has undertaken market engagement to better understand customer requirements and to inform us of the sorts of changes that will be required of our platform and system to facilitate the redesigned process. In 2021/22, the DCC will support a series of pilots with customers to trial revamped processes and supporting toolsets, so as to ensure that they are fit for purpose.

Subject to customer feedback from the pilots, we will consider the extent of regulatory change needed to redefine the ECS process within the Smart Energy Code. Working with customer, we will confirm the scope of any redesigned process and complementary tools, agree the preferred route to enable regulatory change and the appropriate funding and charging model. We expect any investment in the revamped ECS process to be recouped from ECS users and this will be covered in a detailed business case with costed options that we will share with customers later in the year.

Enhanced Testing

The DCC provides a range of test services to support new and existing customer requirements, as well as a number



of enhanced testing services, such as device user system testing for change of supplier or comms hub firmware upgrades and early connectivity testing. See Table 7 on previous page

From customer feedback, there is demand for us to go further to support customers within testing environments, such as improving device assurance for interoperability and building a baseline interoperability and testing standard for the DCC and industry. Additionally, we recognise that we can offer more information and guidance that will support customers to navigate and undertake testing services. A number of initiatives are underway which we believe will be beneficial to our customers, including the following:

We plan to engage further with customers to extend our test services and capabilities so as to create a resource which customers can draw upon in developing new products and services and doing so cost-efficiently.

Security

The DCC has developed strong security expertise and capability but we need to build on these foundations to reflect the growing scale of our operations and to meet emerging and existing threats. We have identified four areas where we need to focus if we are to maintain the necessary level of protection for our services, people, and assets.

Information management

The introduction of faster switching means that the DCC will become a significant data controller, so we must enhance our personal data management safeguards. We are implementing a new business-wide information management policy that ensures consistent handling and storage of data in line with 'secure by design' principles, enhancing compliance with all relevant data protection regulations and legislation.

Following an audit of information assets in Spring 2021, this programme is now under way and expected to complete by the middle of 2022.

Threat-led defence

In 2020, we piloted a threat-led security framework (called MITRE ATT&CK) with our SMETS2 Service Providers and this will be rolled out fully over the next two years across all aspects of the DCC business. This will ensure that we understand threat actors better and can model threat scenarios more accurately, with a clearer idea of where attacks are likely to come from. We will also apply this methodology across our supply chain. This refined defensive approach will help to reduce risk to a level that is in line with our low-risk appetite and protects our best-inclass security reputation.

Zero-trust approach

'Zero trust' means trusting nothing without the necessary authentication that it is genuine and has not been tampered with. This approach will help to reduce the most common risks and address the security architecture weaknesses caused by the proliferation of cloud services, multiple access routes and collaboration technologies.

We will begin adopting this approach with some programmes – including Data Service Provider reprocurement - within the next financial year, but it will take up to three years to embed it across the business.

Demonstrable compliance

We need wider and more consistent compliance techniques to allow threat-based risk assessment of our supply chain and we need more accurate reporting to meet our regulatory obligations.

This requires repeatable techniques that generate accurate and viable compliance data without exposing our people and partners to audit fatigue or activities which do not render useful intelligence. For Core Service Providers, there will be more focus on continuous assessment throughout the year rather than through annual assessments. We are backing this up with clear and effective communication, using dashboards and flexible reporting to show where risk is increasing or reducing. We will begin introducing the new dashboards in Summer 2021 and the changes will then be refined following wider stakeholder feedback.

5.4 Identify and promote ways to re-use the DCC secure network with the objective of reducing charges for our customers, enabling the delivery of social good and supporting the Net Zero carbon objective.

The DCC operates a secure, nationwide network that has already been built and paid for by the energy industry and, ultimately, the end consumer. Over the course of the next five years we believe that we should enable Government and our customers to maximise re-use of this infrastructure to support transition to a flexible, decarbonised energy system.



Extending existing capabilities, such as the DCC Test Labs, and building new development tools to enable our existing energy customers to deliver their smart metering obligations more cost-effectively or develop innovative products and propositions for their consumers.



Redesigning the existing elective communications services (ECS) process, defined in the licence and SEC, to create an effective mechanism through which we can deliver bespoke capability or enhancements for specific customers on a bilateral and commercial basis. Our potential re-use activity falls into four key categories which we have prioritised to reflect the views of the industry and other stakeholders as communicated through workshops and other engagement forums. **Note:** the first three of these are covered elsewhere in this document given the greater priority they have:



Working with Government and the Regulator to secure new mandates for additional uses of the smart metering infrastructure or to deliver further transformational change programmes to implement policy objectives.

Wholesale products

Developing additional products as demonstrators of the capability of the DCC platform, where the opportunity does not arise through elective services, and with particular emphasis on the requirements of DCC other users and non-energy settings. **Note:** we do not envisage any activity in this area for the next three years as a minimum.



System enhancements

Our primary focus is on helping to deliver new products and services for the end consumer which are aligned to the energy system transition, such as flexible tariffs and demand side response.

Our test lab capability mainly supports customers' core business testing needs. But it can also be used to

demonstrate additional functionality within the smart meter system, such as load control. Our customers have told us that they need a more agile development capability and better designed and more cost-effective mechanisms to support change, new products, and propositions. We propose to provide this through three key activities:

Table 8: System enhancements

Activity	Summary	Timescales
Interoperability checker	As part of the SMETS1 programme, working with Citizens Advice, we've built a tool that uses smart meter system data to help consumers identify the type of meter they have and what choices they have when looking to change supplier.	Live
DCC Boxed	DCC Boxed will enable true end-to-end testing across our entire ecosystem from the User Interface Gateway to the device set.	Launch Q4 2021/22 subject to conclusion of a SEC Mod
Development and test services	Providing dedicated lab facilities with support such that customers can experiment/test new services they might wish to offer or to explore the use of additional capability within the DCC network (e.g. load control)	Live

Table 9: Mandated Growth

Activity	Summary	Timescales	
EV charging	/ charging Exploring, with BEIS and OZEV, the potential for the smart meter infrastructure to provide a flexible EV smart charging network with security, scalability, and interoperability at its heart		
	Exploring how the smart metering system can support government policy objectives in several areas including fuel poverty and self-disconnection; energy efficiency; improvement of Energy Performance Certification; registration of distribution network connected assets; and decarbonisation of heat	Further details of timescales for specific initiatives will be made available by end of Q1 2021/22	
BEIS policy priority areas	We are participating in the Modernising Energy Data Applications competition, as part of a consortium, to assess how smart meter system data at an aggregated level, when combined with other data sets, can help to identify households in or at a risk of fuel poverty.		
	We are also contributing to the BEIS Smart Meter Enabled Thermal Efficiency Rating (SMETER) project – exploring data provision and potential connection of temperature and humidity sensors to the Home Area Network to enhance energy efficiency measurement.		
Data services	Around 500m messages are sent through the smart meter system every single month. The 'system data' generated by that data flow is a rich and valuable source of insight that can be used to deliver public benefit and solve societal challenges – accelerating the transition to net zero.	Strategy development and engagement throughout 2021/22	
	We will continue to explore how we can help organisations innovate with this dataset, providing maximum access, robustly and securely, and at the lowest possible cost.		
	For further details, please see Data for Good		

Mandated Growth

Working with customers and partners, the DCC has built one of the most complex pieces of secure digital infrastructure in the world. This asset has already been paid for by consumers.

Given the sums invested, we believe it is prudent to build on it and utilise its core capabilities for wider public benefit. We are therefore exploring several opportunities in which the end-to-end system and its features could be used to facilitate the delivery of Government policy objectives.

Programmes, such as Market-Wide Half-Hourly Settlement and potentially, nationwide EV charging infrastructure will account for most of this activity over the next two to three years. We also hope to bring other projects to fruition which are under discussion with BEIS and Ofgem (Table 9)

Elective Services

In one of the previous sections, we mentioned the need to redesign the elective communications services (ECS) process to better meet the needs of our existing customers.

For the foreseeable future, our focus in relation to custom products/services for existing customers will centre on working with customers to overhaul the ECS process. Not only will this require process redesign, but also a toolset will be required which will enable customers to access the data and communications capability inherent to the DCC platform rapidly and cost-effectively.

Through working with customers in this way, and using pilot projects as a means to prove the new processes/tools, we hope that the required regulatory change which will ultimately be required, together with models for funding/ charging etc, can be delivered with the support of our customers and stakeholders.

Table 10: Wholesale products

Activity	Summary	Timescales
"Living Pillars" proof of concept	Working with ScotScape and Toshiba, the "Living Pillars" PoC will provide a demonstration of connectivity to air quality sensors via the DCC network within lampposts located in the grounds of Brabazon House.	Go live end Q1 2021/22
VAS regulatory framework	AS regulatory DCC will support Ofgem in the finalisation of the regulatory process for the development and approval of Value Added Service opportunities	
Alternative funding models	We will consider how greater flexibility could be introduced to open up new sources of funding for re-use initiatives, such as through external investors.	Throughout 2021/22

Wholesale products

From the foundation of the DCC it was recognised that its network would have the potential for re-use for other purposes in different markets and settings.

In the longer term, we anticipate exploring the specific objective in our Licence to deliver cost reduction for customers, through new revenues derived from 'Value Added Services' (VAS) – enabling non-energy sector customers to develop new products and services that make use of the capabilities of the smart metering system.

We acknowledge that there is limited appetite among our existing customers for the DCC to diversify into new areas currently. Any such activity must be without detriment to our core services and to the benefit of, and with support from, our customer base and stakeholders. Accordingly, we will restrict ourselves to a small set of preparatory activities such as seeking to demonstrate the technical viability of re-use, exploring alternate funding models for the development of these activities and finalising, with Ofgem, the regulatory framework and approvals process for Value Added Services.

Where possible, we will investigate – openly and transparently with our customers – the potential for charging new customers, who haven't contributed to the development costs of the DCC network to use new system enhancements or products developed to support government-mandated growth activities. Our aim will be to offset development costs and drive savings for our current customer base.

5.5 Culture and Capability - Ensure the DCC remains fit for purpose, delivers value for money with an agile and flexible workforce that can support the needs of our customers.

Preparing for the future

The DCC's role has grown and matured over the last 8 years and it now has a scope greater than originally intended. In the coming years, the 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 need to ensure that the DCC becomes an organisation that designs and develops change so that it remains fit for purpose.

DCC Transformation Programme

Our Business Accuracy and Finance Transformation programme is designed to improve our planning, forecasting, and reporting capabilities so that we can improve business accuracy and change control. This will allow greater cost transparency and customer engagement throughout programme lifecycles and provide more opportunity to drive efficiencies.

Culture

This year, we aim to further evolve the DCC culture and behaviours to ensure that these are fully embedded and aligned to the organisations' purpose and strategy. We will continue to listen to our people, ensuring we reflect and learn from our colleagues' experiences, especially in response to the Covid crisis. We have launched quarterly pulse surveys to monitor the engagement of our people. We also continue to develop ways of working post Covid to ensure the right balance for individuals and business needs.

We will better equip and empower leaders and colleagues to make the right decisions for our business, our customers, and our people, continuing to make the DCC a great place to work.

Capability

The focus this year will be to gain a deeper understanding of the learning requirements of DCC as a maturing organisation, ensuring we have a learning strategy aligned to the future business strategy.

This will be achieved by improving further the capability of our existing leaders and people managers by enhancing the leadership and core skills learning offer. We will also identify and nurture future talent by providing targeted learning and coaching to develop a diverse, skilled, and resilient pipeline of talent to fulfil future leadership and critical roles.

Customer engagement

Our vision is to ensure our customers, who fund everything we do, are central to DCC's actions and behaviours. 2020/21 was our first full year implementing the customer engagement strategy we published in 2019, which categorises engagement as follows:

Inform.

For mandated activity, we will engage with the industry to ensure transparency on progress and costs

Shape.

For non-mandated activity, valued at over £1 million, will seek views from customers on the scope of the programme, the options for delivery and the costs and benefits of different approaches

Survey. Where there is a clear set of

options for future activity, we will engage through surveys to gauge industry views

Progress in 2020/21

For mandated activity including SMETS1 and Switching, our approach was to inform customers of our activity, milestones and costs through SECAS and industry fora as well as hosting a Switching summit in October 2020, focussing on security, data matching, the path to user integration testing and consumer perspectives.

For Network Evolution, customers were offered the opportunity to shape our activity. We piloted a more collaborative way of working through the Comms Hub & Network programme, running insights webinars, consultations, and surveys direct with customers, as well as regular engagement with SEC committees.

We developed a cost benefit analysis to share with customers, followed by a consultation seeking their views, which was well responded to. We also sought customers' views on business cases for Test Automation and Production Proving.

Focus for 2021/22

To deliver high-quality, consistent customer engagement, we need to ensure a customer centric focus is embedded across the DCC. We will continue to develop appropriate policies and processes to deliver our customer engagement approach; thus, allowing us to map out the scope of engagement and resource requirements at the outset of each programme, ensure our engagement is resourced, planned, timed and that we have the right channels to facilitate high quality engagement with all customers, irrespective of their size, function or maturity.

We are committed to driving greater collaboration with our customers. We will further develop the Network Evolution engagement approach, most notably our engagement on the business case for Data Services Provider Procurement programme. We are engaging earlier, agreeing timing and purpose of engagement with SECAS in advance of attendance at sub committees and have regular

True collaboration is only as effective as our reach into the energy industry. We are undertaking research into our customers to better understand them and their needs. We are also advertising our engagement activity on more platforms, inviting all DCC users to shape our activity. engagement planning meetings with BEIS as a result of lessons from Comms Hub & Network.

Transparency

Financial transparency is one area we are keen to improve. We have addressed this in part by overhauling our formal quarterly finance updates to share more detail on forecast spend, variances and programme costs as well as giving programme updates. However, we recognize that there is further to go when it comes to sharing sufficient detail of costs and benefits to enable customers to provide an informed view on new programmes. To reinforce this, we intend to strengthen the requirements within our Change Delivery Methodology so that such information is readily available at the appropriate decision-making gates.

We have also attempted to improve our engagement with governance bodies by piloting new ways of working which are more closely aligned to the decision-making process and providing advice and training for our own teams. We now need to ensure we are set up for a cycle of continuous improvement and that we always have the right people available, with the right skills and knowledge, with whom our customers can have open and transparent engagement.

Timing

Engagement on strategic programmes is planned around our change delivery methodology (CDM) and in advance of key decision points and contract signature. CDM dictates customer input throughout the different stages of the methodology to inform and create the mandated artefacts, including business cases and programme solutions and design.

We are working with SECAS and the Chairs of the SubCommittees to produce a clear process of how and when each committee becomes involved in the CDM stages. This will ensure the SEC governance arrangements are an integral part of the CDM (and vice versa) and provide a clear and consistent process for all to follow.

Responding to feedback

Feedback is a vital part of improving the DCC's services. It leads to better outcomes and reduces the risk of unforeseen consequences for our customers. However, for collaboration to work, customers need to see how their feedback is making a difference.

At the DCC, engagement is about more than sharing information and asking customers for their thoughts. Under Ofgem's Operational Performance Regime, we are also measured against how we take account of customer views. We must explain how customers have informed our decision making and, where relevant, why the DCC has decided not to take feedback forward.



Closing the feedback loop with customers is a key priority, aiming for greater consistency and clarity in our approach so that customers, know when they can expect decisions are informed of how their feedback has been incorporated into our activity and, understand our rationale. We have made improvements in 20/21 as evidenced by our feedback webinars for this Business & Development Plan and the Cost Benefit Analysis for our Comms Hub & Network programme.

Longer-term focus for engagement

We want to ensure that our organisation and programmes are structured around customer needs. We are working to achieve a genuine dialogue with a far-reaching group of customers, enabling them to proactively input into driving DCC plans and shaping future developments. We will aim to deliver quality engagement that is consistently highly rated and easy to practice and will continue to improve throughout 20/21.

The challenges of virtual engagement through 2020 and 2021, necessitated by the COVI-19 pandemic, have been significant. However, the DCC is committed to meeting our customers' needs and delivering value for money by putting them at the heart of everything we do.

Driving costs down and providing value for money

It is important that the DCC has strong oversight and controls in place to ensure supplier costs are appropriately managed. We have a range of mechanisms to ensure we are both obtaining value for money and achieving the right outcomes.

Controlling supplier costs

We use an approach, like the Government's Legal Service Master Services Agreement (MSA), as a key tool in managing and controlling supplier costs. We have also enhanced the standard model to ensure that we are achieving the right outcomes. We incentivise good performance, but where issues arise, we can seek redress from service providers in a number of ways, including:

- Specific deductions of the monthly service fee for breach of minimum service levels
- Incentivised project milestones centred around a revenue retention sum that reduces to a zero balance where a number of days delay has been exceeded

- Reimbursement of testing costs where the service provider is at fault
- Reimbursement of DCC costs in instances of service provider delay
- Indemnities that allow the DCC to reimburse third parties for service provider fault
- Provision of rectification plans, enhanced scrutiny and step-in for persistent service failure and material breach

Additionally, the DCC has chosen to enhance the MSA provision in some of its agreements and we use a number of mechanisms to seek redress for service providers failing to perform and/or meet their obligations include:

- Service credits in the event of service level failure or where the target service levels have not been met
- The production of a rectification plan where persistent service failure occurs
- The provision of enhanced scrutiny and step-in for persistent service failure and material breach
- Liquidated damages in the form of deductions from milestone payments where a milestone is delayed

The DCC is seeking greater cost transparency from its service providers by applying a set of principles which require suppliers to share more information deriving greater assurance of value for money. We hold benchmark service provider rate cards which allows us to market test and where necessary move to a more formal contracted independent benchmarking process.

Cost transformation

Smart Savings Programme

To further support the principle and delivery of value for money, the Smart Savings Programme was launched in Regulatory Year (RY) 18/19 to reduce costs for our customers while increasing the efficiency and effectiveness of our processes. Since its launch, £358 million of cashable savings have been realised (RY 18/19 £107m; RY 19/20 £236m; RY 20/21 £15m).

RY 20/21 highlights



DCC Price Control Framework

As a monopoly, we must ensure that our customers obtain value for money from their contribution to the delivery of the SMIP and other activities covered by the licence, such as faster switching. the DCC is subject to an annual process of scrutiny by Ofgem, under which we are required to demonstrate that money has been spent in the most economic and efficient way.

In July each year, we report on the costs that we incurred during the previous Regulatory Year. Ofgem reviews these costs and has the power to refuse any costs which it does not believe are justified. Last year, around £3.1 million was disallowed against a total expenditure of just over £463million.

In March 2021, Ofgem issued a final decision on OPR, We strive hard to deliver value for money for our customers which changes the system performance incentives and particularly in controlling our external costs which are and adds new ones for customer engagement and the largest component for us. Under the External Contract contract management. Our performance against the Gainshare (ECGS) mechanism, the DCC is incentivised to newly proposed customer engagement and contract management specific aspects will be assessed as part seek opportunities for cost savings in key service provider contracts. In 2019/20, we secured savings of approximately of the 2021/22 price control. We will continue to work £9.2 million, which will be returned to customers. closely with Ofgem and our customers to agree a set of performance metrics with the aim of optimising the DCC's performance for its customers.

Regulatory Performance Incentives

One of the basic principles that underpins the DCC's regulation is that all our potential margin should be placed at risk. Our retention of margin is decided by Ofgem through an annual assessment of our performance against a range of incentive schemes. Generally, these schemes take one of two forms:

- Delivery-related –assessed typically against our achievement against project milestones
- Operational assessed against a range of metrics reflecting what is valued by customers, such as system reliability, handling of issues, engagement with customers etc

We are currently subject to incentive schemes relating to the delivery of the Switching Programme and SMETS1 enrolment and adoption. In addition, we have been working closely with Ofgem as it developed and finalised its changes to the Operational Performance Regime (OPR).

6. Financial summary

Introduction and background

This section sets out the DCC's financial summary for the next five years, RY2021/22 to RY2025/26, in accordance with the indicative budget and Charging Statement published in July 2021.

The impact of the COVID-19 pandemic has not been factored into these numbers. As meter installation rates slow down, we anticipate cost forecasts to change. We are carefully monitoring the situation and any impact it may have.

We continue to follow our key principles, which are to:

- Challenge costs with Service Providers, ensuring rigorous and robust processes and ensuring strong internal controls
- Be as clear and transparent as possible
- Reduce the volatility of cost movements by forecasting as accurately as possible
- Identify cost savings at every possible opportunity, such as refinancing and internal resource profile
- Only spend money where appropriate and beneficial to our customers

There are many ways in which we engage on budgets throughout the year.

The financial summary below is correct as of 1st June 2021.

We update our forecasts every quarter. We engage with customers on Finance via webinars and face to face meetings. More detail on our finance engagement plan and budgets is available on the DCC website: www.smartdcc.co.uk/customer-hub/charges

Through the Price Control process, we engage with customers and stakeholders, who also have the opportunity to comment on Ofgem's review of the DCC's costs

The DCC's financial framework

The DCC operates under the Smart Meter Communication Licence ('the Licence'). At a high level, the Licence sets out what the DCC should deliver and how it should spend and then recover the funds necessary to deliver those services. The DCC passes all its costs through to our customers, DCC users, through the DCC Service Charges.

The DCC fixes charges for one year at a time, and these are usually refreshed in April each year. To allow its customers to plan adequately, the DCC makes revenue forecasts available to its customers regularly throughout the year in the quarterly indicative Charging Statement and budget publications. the DCC also hosts regular finance updates for customers where our finance team explains any movements in the forecast from quarter to quarter. In December of each year the revenue is set and converted to indicative charges which then take effect from the following April.

Our finance team operates a finance business partnering model. This enables the team to be close to the detail of the business, to better understand cost drivers and influence the business. In addition, we continue to enhance our supplier management function to strengthen commercial negotiations and achieve maximum value for money.

As part of the continuous improvements we make in relation to forecasting, we keep all risks and opportunities under review – this is discussed in more detail below. This activity is challenging due to the uncertainty we continue to face particularly in relation to new programmes, which are often subject to external governance, specification, and decisionmaking. We also face general challenges as we forecast the cost and activity of 'first of its kind' programmes of work that have never been undertaken before.

The DCC cost types

Internal costs

The DCC's Internal Costs relate to resources, IT and other costs which are described in more detail below. Also included within Internal Costs are the costs associated with External Service Providers which do not provide Fundamental Service Capability. For example, this includes the SMKI service, Parse and Correlate, service desk, billing platform and business intelligence and management information systems.

External costs

External Costs are the costs associated with the Fundamental Service Capability. They relate to costs included in the original base contracts (as procured by Government before the DCC licence award) plus any subsequent changes that have been, or are expected to be, agreed with each of the CSPs and DSP (which may include future enhancements to the DCC service). It also includes new Fundamental Service Capability procured for SMETS1 and the Switching Programme. We often refer to the providers of Fundamental Service Capability as Fundamental Service Providers (FSPs).

Other costs

We use the category of 'other costs' to describe a range of other costs and adjustments also included in our forecasts. These are generally costs that are different in nature to Internal and External Costs, are adjustments and/or are beyond our control. These costs are described in more detail below.

Communications Hubs

The costs of Communications Hubs (CH) devices that are forecast to be delivered to customers in each regulatory year are captured in this category. These costs relate to the maintenance, leasing, and financing of CH assets. The profile of CH device costs is based on the latest available volume forecast that is received from customers each quarter.

The DCC total cost summary

The DCC forecast summary from RY2021/22 to RY2025/26 is shown below in Table 1.

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
Internal Costs	134.0	121.3	121.3	113.7	106.5
External Costs	421.3	394.4	371.3	352.1	334.0
AltHANCo	28.6	23.9	21.7	20.2	18.7
Other costs	40.9	21.7	21.1	16.5	14.5
Sub total	624.7	561.3	535.4	502.5	473.7
Communications Hubs	45.2	70.8	108.1	151.5	180.6
Explicit Charge items	4.6	9.9	23.1	33.9	33.9
Total	674.5	642.0	666.6	687.9	688.1

Table 1 - the DCC forecast summary (£m)

The total cost forecast for RY2021/22 is £674.5m. The cost forecast for RY2022/23 – RY2025/26 of £642.0m. £666.6m, £687.9m and £688.1m respectively is equivalent to the Estimated Allowed Revenue as stated in the indicative budget approved by the Smart DCC Board on 28 May 2021.

The majority of the DCC's costs are External Costs. Internal Costs represent around 20% of the total forecast costs for RY2021/22.

The projected volume of CH orders is due to increase significantly over this time period as installation of SMETS2 meters continues to ramp up.

Table 2 summarises the DCC's forecast costs across the three key DCC programmes.

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
SMETS2	402.0	397.1	378.1	352.3	328.3
SMETS1	126.1	102.0	104.0	102.8	101.7
Switching	27.1	16.6	10.6	10.7	10.7
Other costs (including Alt HAN Co)	69.5	45.6	42.8	36.7	33.2
Total	624.7	561.3	535.4	502.5	474.0

Table 2 - the DCC forecast by programme (£m)

This breakdown is illustrated in Chart 1 below and is described in more detail in the two sections below.



Chart 1 - the DCC forecast by programme (£m)

The DCC forecasts on the next page for RY2021/22 to RY2025/26

Year on year movements

Chart 2 sets out the movement in the DCC forecast from RY2021/22 to RY2025/26 based on the 'charges view'

The total cost forecast for RY2022/23 is £33m lower than RY2021/22. This variance is explained as follows:

- External Costs are £27m lower due to SMETS1 moving to enduring and Network Evolution focussing on vendor selection. In addition, mid-way through RY2020/21 historical DSP setup costs that were financed have been paid off
- Internal costs are £13m lower for the same reasons the transition to enduring for SMETS1 and Network Evolution (part of SMETS2) in vendor assessment and selection.
- Other costs are £24m lower, largely due to the removal of Prudent Estimate in outer years and lower Alt Han costs
- CH costs are £26m higher due to the larger volume of CHs expected to be enrolled and a full year of costs for those that were enrolled part way through RY2020/21
- Explicit Charges are £5m higher largely due to Alt HAN Explicit charges.

The total cost forecast for RY2023/24 is £25m higher than RY2022/23. This variance is explained as follows:

- External Costs are lower by £23m: this is largely due to design, build and test activity reducing for mandated programmes
- Other costs are £3m lower, largely due to lower Alt Han costs and margin
- CH costs are £37m higher due to incurring a full year of costs for those that were enrolled part way through RY2022/23
- Explicit Charges are £13m higher largely due to Alt HAN.



Chart 2 - the DCC forecast waterfall by key cost drivers (RY2021/22-RY2025/26)

The total cost forecast for RY2024/25 is £21m higher than RY2023/24. This variance is explained as follows:

- Lower External Costs by £19m as a number of Programme costs decrease slightly, such as SMETS1
- Lower Internal costs by £8m as current headcount expectations decrease
- Lower Other costs by £6m due to Alt HAN costs and lower margin costs
- CH costs are £43m higher due to incurring a full year of costs for those that were enrolled part way through
 RY2023/24
- Explicit Charges are £11m higher largely due to Alt HAN Explicit charges.

The total cost forecast for RY2025/26 is largely an extrapolation of RY2024/25 and based on the assumption that reductions in development activity levels will continue to decrease at similar rates to the prior year. The exception is the CH costs, which increase by £29m due to incurring a full year of costs for those that were enrolled part way through RY2024/25.

Internal Costs

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
SMETS2	120.1	109.2	110.4	104.3	98.0
SMETS1	7.9	4.6	3.4	1.8	0.9
Switching	5.9	7.5	7.5	7.5	7.6
Total	134.0	121.3	121.3	113.7	106.5

Table 3: Internal Cost forecast by programme (£m)

Table 3 sets out the Internal cost profile by programme from RY2021/22 to RY2025/26. SMETS2 Internal costs are forecast to reduce over the period as efficiencies are realised.

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
Resource	68.7	66.5	69.0	66.9	64.9
Non-resource	65.2	54.9	52.3	46.7	41.6
Total	134.0	121.3	121.3	113.7	106.5

Table 4: Internal Cost forecast by sub-category (£m)

Resource costs from RY2021/22 to RY2025/26 initially increase in line with SMETS2 activity then reduce as activity reduces in outer years.

External Costs

Table 5 below sets out the External Cost forecast by programme.

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
SMETS2	281.9	287.9	267.7	248.0	229.3
SMETS1	118.2	97.4	100.5	101.0	101.6
Switching	21.2	9.1	3.1	3.1	3.2
Total	421.3	394.4	371.3	352.1	334.0

Table 5: External Cost forecast by programme (£m)

- SMETS2 costs reduce year on year between RY2021/22 to RY2025/26 as a result of activity and the assumption that we will have paid off all DSP financed set-up and release costs by October 2021.
- SMETS1 costs reduce by 14% between RY2021/22 to RY2025/26 as set-up costs reduce.

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
Set-up costs	309.7	200.5	162.8	152.5	144.6
Fixed operational costs	97.2	172.6	175.3	174.3	165.3
Impact assessments/projects	11.1	18.6	30.4	22.3	21.2
Performance Incentives	2.3	1.6	1.6	1.6	1.5
Catalogue Services	-	-	-	-	-
Transaction Messages	1.0	1.1	1.3	1.5	1.4
Total	421.3	394.4	371.3	352.1	334.0

Table 6: External Cost forecast by sub-category (£m)

Table 6 sets out a breakdown of External Costs by its key sub-categories. We explain each category below.

Set-up costs

External set-up costs relate to the design, build, test, and implementation of systems, infrastructure, and processes. The cost profile for these activities reflects the original DSP and CSP contracts under which live operation was set to commence in October 2015 as well as contract changes since they were awarded in 2013. It also includes the development costs associated with the SMETS1 and Switching programmes. Generally, the payments of these costs are aligned to specific milestones agreed with each Fundamental Service Provider (FSP) and are often financed over a period of time.

Set-up costs also include forecasts relating to change requests yet to be finalised and the cost of future releases. As these activities are finalised and authorised, the costs are re-profiled as necessary between set-up and fixed operational cost lines.

We include future release provisions which relate to the expected cost of new activities that are planned to be delivered through the enduring release delivery model over the coming years. For example, this might include SEC modifications

Fixed operational costs

Fixed operational costs cover the ongoing operation and maintenance of the service. Over the period of the rollout, operational costs are set to increase as we support a growing number of meters and messages.

The temporary increase is due to the migration costs for the SMETS1 programme.

Other

There are also a number of other areas of External Costs. These include:

- Performance incentive payments which are payments that we would make to DSP and CSPs for achievement of key milestones in line with contracted terms
- Impact assessments and project costs to reimburse the FSPs for producing detailed resource breakdowns and activity plans for impending contract changes and for undertaking specific projects. We have included provision for impact assessments and projects based on the previous history of changes agreed and our current best estimate of the volume of change in future years
- Catalogue services are products and services that can be purchased from FSPs at an additional pre-defined cost. Many of these services are procured as and when customers request them and are usually recovered via Explicit Charges.

Other costs

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
Baseline Margin	10.2	9.3	8.8	4.1	1.9
ECGS	5.2	3.2	3.3	3.5	3.7
Pass-Through Costs: SECCo	8.8	9.2	8.9	8.9	8.9
Prudent estimate	20.0	0.0	0.0	0.0	0.0
Disallowed cost	(3.4)	-	-	-	-
Total (excl CF)	40.9	21.7	21.1	16.5	14.5

Table 7: Other cost forecast (£m)

Other costs are summarised in Table 7. These are generally costs that are different in nature to Internal and External Costs, are adjustments or are beyond the DCC's control. Each aspect is described below.



Baseline Margin (BM) and External Contract Gain Share (ECGS)

In RY2021/22, the expected amount of BM is £10.2m and ECGS is £5.2m – both values were determined by Ofgem in its final price control decision on RY2018/19.

The Baseline Margin represents the amount paid to our shareholder in relation to Smart DCC Ltd, the base values for which are set out in the licence. The values we forecast also include any incremental margin awarded by the regulator (which can include margin for new programmes such as the switching programme). All the Baseline Margin is placed at risk under incentive regimes and so can be reduced by the regulator, theoretically to zero, to reflect the DCC's performance against those incentives.

The ECGS is also paid to our shareholder and reflects the DCC's share of negotiated External Cost savings made to date. These savings have been achieved by refinancing the set-up costs in the FSP contracts.

Pass-through Costs

Pass-through Costs include costs associated with SECCo Ltd, which are consistent with the SECCo budget approved for consultation by the SEC Panel in December of each year; and AltHANCo costs which are consistent with the Alt HAN budget also approved in December each year (this value is set out in Table 1). We pass through these costs to the DCC's customers via the DCC charges. For RY2020/21 the DCC expects to recover £28.6m on behalf of AltHanCo and £8.8m on behalf of SECCo.

Business Plan Methodology

SmartDCC has been moving towards bottom-up planning methodologies. In time this should enhance forecasting Smart DCC has been moving towards bottom-up planning methodologies. In time this should enhance forecasting accuracy. As such, the DCC has removed Prudent Estimate and contingencies from its outer year forecasting.

There will still be risks of overspending (for example, additional mandated work) and opportunities of underspending. Any forecast variability that cannot be offset or absorbed may lead to outer year cost increases or decreases.

The DCC charges revenue

The DCC costs are generally converted into five key charges categories, they are:

- The Fixed Charge which recovers the Estimated National and Regional Fixed Revenue
- The Fixed CH Charge which recovers the Communications Hubs Device Revenue
- The Fixed Alt HAN Charge which recovers the Alt HAN Fixed Revenue
- Estimated Explicit Charges Revenue which recovers costs associated with Explicit Charge items as and when they occur
- Estimated Elective Services Revenue which recovers costs associated with Elective Services, of which none currently exist.

Further detail on the DCC charges is set out in the Charging Statement.

Most of the costs set out in this section reflect the profile in which the DCC will incur costs, rather than the profile in which the DCC recovers costs through charges.

Table 8 shows how the costs described above are converted to revenue values which set the way in which we recover costs from our customers.

	RY2021/22	RY2022/23	RY2023/24	RY2024/25	RY2025/26
Internal Costs	134.0	121.3	121.3	113.7	106.5
External Costs	400.3	378.4	354.8	332.4	310.5
SECCo	8.8	9.2	8.9	8.9	8.9
Baseline Margin	10.2	9.3	8.8	4.1	1.9
ECGS	5.2	3.2	3.3	3.5	3.7
Prudent estimate	20.0	0.0	0.0	0.0	0.0
Disallowed cost	(3.4)		-	-	-
Main correction factor	(10.9)	(6.0)	-	-	-
Total (excl CF)	40.9	21.7	21.1	16.5	14.5
Estimated Regional and Fixed Revenue	564.3	515.4	497.2	462.6	431.5
Total Communications Hub Fixed Revenue	21.0	16.0	16.5	19.7	23.5
Alt HAN costs	28.6	23.9	21.7	20.2	18.7
Alt HAN correction factor	(0.1)	-	-	-	-
Estimated Alt HAN Fixed Revenue	28.5	23.9	21.7	20.2	18.7
Communications Hubs costs	45.2	70.8	108.1	151.5	180.6
CH correction factor	0.1	-	-	-	-
Estimated Communications Hubs Revenue	45.2	70.8	108.1	151.5	180.6
Estimated Fixed Revenue	659.0	626.1	643.5	654.0	654.3
Estimated Explicit Charges Revenue	4.6	9.9	23.1	33.9	33.9
Estimated Elective Services Revenue	-	-	-	-	-
Estimated Allowed Revenue	663.6	636.0	666.6	687.9	688.1
Sub-total used to calculate fixed charges	585.2	531.4	513.7	482.3	455.0
Total DCC cost estimate	624.7	561.3	535.4	502.5	473.7

Table 8: Forecast summary 'Charges view' (£m)

Correction factor

When costs are converted to charges, we apply a correction factor. This is an adjustment to account for the over or under-recovery of charges for prior years. This is the difference between what the DCC has charged and the costs the DCC has incurred.

Interpreting our forecast

Managing risk

We continuously measure risks and opportunities, and we report on these regularly to our customers. We keep under review the extent to which the latest base forecast (this is the published forecast) might be affected by risks associated with the assumptions we have made. We also assess potential opportunities to incur less cost compared to those in the latest base forecast.

Risks	Opportunities
Network Evolution	Network Evolution
Alt HAN Co worst case budget Innovation	Alt HAN best case budget

Table 9 – Risk and opportunities

Network Evolution

This is considered both a risk and opportunity on the forecast given the uncertain nature of the placeholder costs included at the time of publication. the DCC is in discussions with BEIS and in consultation with industry about the scope and delivery.

AltHAN Co

AltHAN Co provide a base forecast to the DCC together with a low and high forecast. The DCC reflects the base forecast in its Charging Statements, meaning there is both potential upside and downside on the base forecast presented.

Innovation

If DCC was to undertake activities on Innovation, there would be both a risk (cost implication) and opportunity (profit shared with customers) in undertaking this. Any decision to include this in forecast charges to customers would be subject to business case.

SMETS1 EDMI build costs and increased meter volumes

At the time of the cost forecasts it was uncertain, and therefore a risk to the base forecast, as to whether the DCC would be instructed by BEIS to migrate the EDMI meter cohorts. There is also a risk to cost forecasts should the number of SMETS1 meter installs exceed the volumes assumed within the base forecast.

