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Programmes - Table of Contents

I. SMETS1 – RY20/21 Variances Overview

Programme variance by GL

The table below provides a breakdown of incurred and forecasted costs in price control format below i.e. mapping costs directly against the price control General Ledger codes (GLs).

Baseline (£m)		**RY20/21**	**RY21/22**	**RY22/23**
Total SMETS1		**6.859**	**1.038**	**-**
Payroll costs	PR	3.579	0.526	-
Non-payroll costs	NP	0.097	0.027	-
Recruitment	RC	0.045	-	-
Accommodation	AC	-	-	-
External services	ES	2.655	0.324	-
Internal services	IS	0.483	0.161	-
IT Services	IT	-	-	-
Incurred (£m)		**RY20/21**	**RY21/22**	**RY22/23**
Total SMETS1		**18.850**	**7.944**	**2.888**
Payroll costs	PR	8.235	2.454	-
Non-payroll costs	NP	0.000	0.064	-
Recruitment	RC	0.009	-	-
Accommodation	AC	0.100	-	-
External services	ES	9.957	4.909	2.384
Internal Services	IS	0.552	0.516	0.504
IT Services	IT	-0.002	-	-
Variance (£m)		**RY20/21**	**RY21/22**	**RY22/23**
Total SMETS1		**11.991**	**6.905**	**2.888**
Payroll costs	PR	4.656	1.928	-
Non-payroll costs	NP	- 0.097	0.037	-
Recruitment	RC	- 0.037	-	-
Accommodation	AC	0.100	-	-
External services	ES	7.301	4.585	2.384
Internal services	IS	0.069	0.355	0.504
IT services	OS	- 0.002	-	-

Programme variance by sub-team

The table below shows the payroll variance by sub-team within the SMETS1 Programme.

SMETS1 Payroll Costs	**RY20/21**	**RY21/22**	**RY22/23**
Baseline	**3.579**	**0.526**	**-**
Commercial and Regulation	0.415	0.076	-
Operations	0.802	0.167	-
Security	0.161	-	-
Service Delivery	1.403	0.058	-
Testing	0.798	0.225	-
Incurred	**8.235**	**2.454**	**-**
Commercial and Regulation	0.950	0.081	-
Design and Assurance	- 0.045	-	-
Operations	2.645	0.892	-
Security	0.399	0.085	-
Service Delivery	3.153	0.934	-
Testing	1.134	0.463	-
Variance	**4.656**	**1.928**	**-**
Commercial and Regulation	0.536	0.005	-
Design and Assurance	- 0.045	-	-
Operations	1.843	0.726	-
Security	0.238	0.085	-
Service Delivery	1.750	0.875	-
Testing	0.336	0.237	-

1 SMETS1 Programme

1.1 Purpose, Scope and Structure

1.1.1 Purpose

Background

Under the SMIP Foundation Stage, SMETS1 meters were rolled out by suppliers ahead of the establishment of DCC systems, so that customer benefits could be accelerated. SMETS1 meters are the first-generation smart meters which were not designed with the same level of compatibility and interoperability as SMETS2 meters. The main drawback of the approach suppliers took to rolling out SMETS1 meters is that when a consumer changes energy supplier, these meters risk losing their smart functionality and becoming "dumb". Without addressing this issue, the full benefit of early adoption of smart meters will not be realised.

The overall purpose of the SMETS1 Programme is to integrate these meters into the DCC service so that they can be operated in 'smart mode' and maintain their smart functionality.

The technical solution (Initial Enrolment Project Feasibility Report (IEPFR or the "Feasibility Report") was consulted on in 2016 with two key options:

1. A Direct to Meter (D2M) solution whereby the DCC effectively communicates with the SMETS1 meter via new software developed specifically for the purpose (IP4).
2. A solution that would integrate the existing market framework (SMSOs) (IP5b) into the DCC ecosystem.

Option 2 was considered lower risk as the existing market framework was already operational and had been tested. In May 2017 DCC consulted on a delivery plan for option 2 ("LC13" plan), which was approved by the Government in October 2017. This scheduled the enrolment and adoption of SMETS1 meters into the DCC ecosystem in three operating capability releases – Initial Operating Capability (IOC), Middle (MOC) and Final (FOC) – with each release delivering a capability for a different type of meter that have been installed by energy suppliers.

1.1.2 Scope

Changing Assumptions and Increased Complexity and Scope

As the programme evolved it became apparent that the complexity was greater than initially envisaged by all key stakeholders. These issues were raised with BEIS as posing a significant risk to delivery and articulated through relevant governance forums with industry and BEIS.

A restructure of the Programme was subsequently carried out in the last quarter of 2018 with DCC consulting on a revised LC13 plan.

Joint Industry Plan (JIP) Change Request of DCC's delivery plan for SMETS1 Services – Consultation

The DCC SMETS1 service went live at the end of July 2019 (later than the planned date of May 2019) and migrations of previously dormant meters under the IOC cohort have been progressing, enabling consumers to have their smart services restored. DCC consulted between 25 October 2019 and 20 November 2019[1] on amendments to its SMETS1 Delivery schedule (originally laid out in the JIP). Following the consultation, the proposed changes were accepted into the JIP.

Key planned events and objectives driving activity and cost

At the start of RY20/21, the key objectives for the SMETS1 programme were:

[1] https://www.sms-plc.com/media/4427/dcc-smets1-delivery-plan-consultation-final.pdf

1. Deliver a Middle Operating Capability (MOC) by end of June 2020. This involves delivery of all the capabilities required to migrate and operate Secure meters previously managed through the Secure Smart Metering Service Organisation (SMSO).
2. Deliver a Final Operating Capability (FOC) by end of July 2020. This involves delivery of all the capabilities required to migrate and operate L+G meters previously managed through SMSOs operated by NPower, British Gas and Trilliant.
3. Complete testing of Aclara devices for the Initial Operating Capability (IOC) cohort. These were the only remaining IOC device types not to have completed IOC Systems Integration Testing (SIT). This was due to device related issues and device specific behaviours being discovered during DCC's testing which needed to be resolved before migration could take place. This was planned for completion in May 2020.
4. Deliver Core Release 1.1 in May 2020. As a result of lessons learned in user testing and in production, several changes to the solution were proposed at the end of 2019. These changes were incorporated into a new release (Core 1.1) which drove additional internal and external spend during RY19/20 and RY20/21. A summary of the changes is provided below:
    a. Auxiliary load – during 19/20 it became apparent that there was a risk that consumers with auxiliary load circuits could have their electricity supply irrevocably cut off post migration to DCC. A decision was taken to identify these installations and place them on a migration blacklist so they would not be migrated until a fix was found. A change to DCC's solution was proposed to mitigate this risk and enable remote reconnection of supply if the supply was disconnected.
    b. Split supplier IDs – during user testing, it became apparent that some of DCC's customers that use multiple SEC party IDs were experiencing unexpected behaviour from the migration solution. This was a result of DCC treating this type of installation as split supplier installations which follows a different process to single supplier installations. Whilst the solution was working as defined in the relevant SEC documentation, it was agreed that DCC should change its solution to accommodate customers that have this configuration.
    c. File sequencing – As DCC began to ramp up volumes of migrations, it identified a design issue in relation to the sequencing of files being transmitted between parties involved in the migration process which was causing migration failures. DCC proposed a change to the solution to remove file sequencing in order to improve migration throughput and solution reliability.
    d. EE roaming – shortly before IOC go-live, Vodafone changed its policy on EE roaming of SMETS1 SIMs, deciding to prevent roaming to EE for all SIMs not already roaming to EE. DCC had to amend its solution to distinguish between the two different types of SIM.
5. Complete Device Model Combination Testing (DMCT) of Device Model Combinations (DMCs) not tested during the SIT testing phase for the initial go-live of each cohort making as many installations as possible available for migration.
    a. IOC – complete DMCT.
    b. MOC Secure – complete all DMC entries on the Eligible Products Combination List (EPCL) by end of July 2020 under the assumption that all Secure DMCs were technically equivalent to the DMC tested in SIT.
    c. FOC – Complete DMCT by the end of October on the assumption that active energy suppliers would upgrade meter firmware and reduce the number of DMCs needing testing.

In agreement with BEIS, the plans to support these objectives included no contingency.

1.1.3 Programme Structure

The figure below shows how the programme was organised during RY20/21, and the key roles within each sub-team.

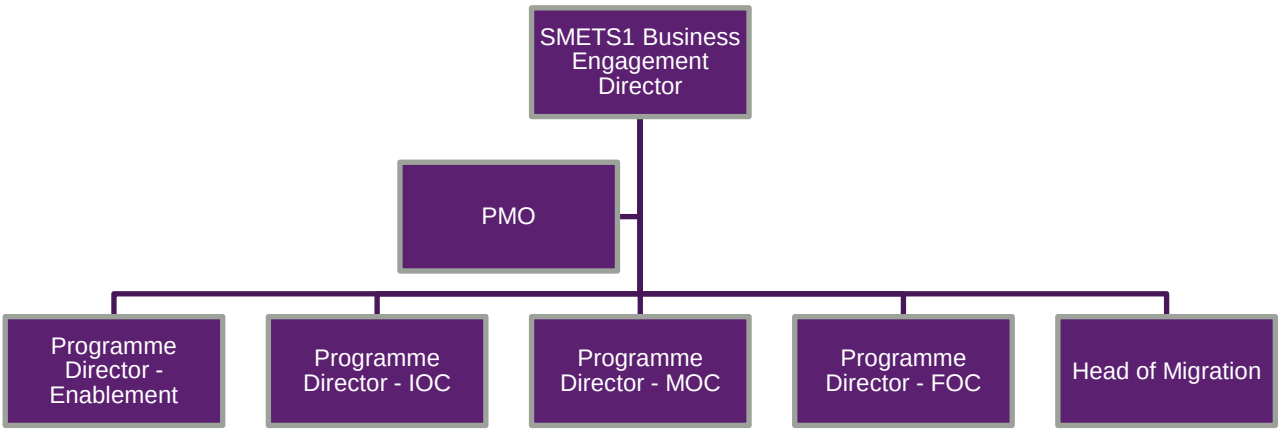


Figure 1: SMETS1 Programme structure

It should be noted that the sub-team structure within the Payroll system (below) does not always match the SMETS1 programme structure illustrated in the figure above. Resources from the different sub-teams are deployed and prioritised across the programme as needed.

Sub Team structure reported in RY19/20	Current Sub-team RY20/21	Description
Service Delivery	Service Delivery	The overall purpose of this team is to deliver the Enrolment and Adoption of SMETS1 meters into the DCC in accordance with DCC Licence Conditions, liaising with internal and external stakeholders to ensure all end-to-end components are in place to enable the safe and efficient migration of meters.
Commercial and Regulation	Commercial and Regulation	**Commercial** Accommodate changes to the Service Providers' contracts for any of the capability releases. Drive and lead on procurements and negotiations with current and new Service Providers for any of the capability releases; and Complete and review contract signatures for Service Providers' contracts for any of the capability releases. **Regulation** Run consultations as required for other SEC designated documents. Produce Live Services Criteria documentation for go-live and present to SEC Panel and BEIS; and Identify requirements and dependencies for go-live governance including internal DCC governance and external governance.
Design and Assurance (CTO)	Design and Assurance (CTO)	The SMETS1 service introduces new components to DCC's core infrastructure. While this is designed to be 'seamless' to end-customers there is greater complexity in terms of data flows, security, and physical Device Model combinations. The SMETS1 CTO team's primary focus is to deliver a

Sub Team structure reported in RY19/20	Current Sub-team RY20/21	Description
		high-level technical design and provide assurance of supplier technical design.
Testing	Testing	The SMETS1 Test Services and Assurance Team will oversee multiple testing stages for the three different capability releases, incl. Pre-integration Test (PIT); Early Integration Test (EIT); System Integration Testing (SIT); Migration SIT; Business Assurance Testing (BAT); and User Integration Testing (UIT).
Operations	Operations	In terms of readiness for operations, and managing the SMETS1 Service on an ongoing basis, the SMETS1 Operations team's primary focus and purpose lies in supporting the migration activity as well as establishing an Early Life Support in time for the first capability release. As part of this, a period of internal DCC testing immediately prior to go live – Transition to Operations (TTO) – will take place before each capability release. This will involve business acceptance and operational acceptance testing to ensure that the service can be handed over to operational teams within the DCC and remaining non-functional processes and activities have been verified as being fit-for-purpose.
Security	Security	The primary purpose of the SMETS1 Security team is to produce and finalise the Security Architecture and Risk Assessment for each of the programme's capability releases. This includes security assessing and assuring the integration of all SMETS1 service providers and components.

1.2 Cost Centre Variance

Variance by GLs in the RIGs

The table below provides a breakdown of incurred and forecast costs in price control format i.e. mapping costs directly against the price control General Ledger codes (GLs). Non-payroll costs are explained in a later section. Payroll and Recruitment are justified within the next section.

Table 1: Cost centre variance by GL

			RY20/21	RY21/22	RY21/22
Total Baseline - SMETS1			**6.859**	**1.038**	**-**
Total Incurred - SMETS1			**19.153**	**7.944**	**2.888**
Total Variance - SMETS1			**12.293**	**6.905**	**2.888**
Payroll costs	PR	£m	4.656	1.928	-
Non-payroll costs	NP	£m	- 0.097	0.037	-
Recruitment	RC	£m	- 0.037	-	-
Accommodation	AC	£m	0.100	-	-
External services	ES	£m	7.414	4.585	2.384
Internal services	IS	£m	0.069	0.355	0.504
Service management	SM	£m	0.190	-	-
IT Services	IT	£m	- 0.002	-	-

Payroll costs variance

The overall Payroll costs variance is positive, with incurred costs £3.990m higher than the baseline for the programme.

Variance by Sub-Team

In RY20/21, the overall Payroll Variance is positive. All teams, except Design & Assurance, returned a material (greater than £150,000) variance in RY20/21. In RY21/22, the Operations, Service Delivery and Testing teams are showing material variances. The reasons for this are set out below.

Table 2: Cost centre variance by sub-team

SMETS1 Payroll Costs £m	RY20/21	RY21/22	RY22/23
Total Variance	**4.656**	**1.928**	**-**
Commercial and Regulation	0.536	0.005	-
Design and Assurance	(0.045)	-	-
Operations	1.843	0.726	-
Security	0.238	0.085	-
Service Delivery	1.750	0.875	-
Testing	0.336	0.237	-

1.3 Drivers for Variance – Resource

1.3.1 Progress against objectives in RY20/21

Middle Operating Capability (MOC)

The capability to migrate and operate Secure devices went live in August 2020, around 6 weeks later than originally planned. This was partly due to extra time required in SIT testing to resolve some critical defects which had not been disclosed to DCC and were discovered late in testing and partly due to stability issues in the production environment.

Final Operating Capability (FOC)

During Systems Integration Testing (SIT) in early 2020, a significant issue was uncovered which related to the L+G communications hubs behaving unpredictably during migration. Regrettably, the energy suppliers were unable to fix the defect, and DCC found itself in a situation of adapting its FOC solution to take account of the faulty behaviours.

The hubs had not been coded correctly to undergo a migration and DCC discovered that a significant proportion of these hubs went into a suspended state for 7 days during which time they would not respond to any requests. This was not shared or communicated to DCC, by either energy suppliers and/or service providers, during the design of the solution. Detailed technical analysis indicated that the issue was related to how the hubs responded when the mobile network terminated connections during migration.

DCC set up several technical proof-of-concept trials to try and establish the root cause and to identify potential workarounds. Despite detailed investigation with the hub manufacturer, firmware provider and mobile phone network provider, the root cause could not be identified, and a useful workaround could not be established. DCC did establish from these trials that in all cases the hubs did recover after 7 days.

In August 2020, DCC together with the suppliers of active meters in the FOC cohort, determined that an enduring fix or workaround for the 7-day delay issue may not be forthcoming and a decision was taken to change the migration solution to cope with hubs going into a 7-day delay and accept that FOC migration would behave differently to other cohorts. Whilst this was deemed acceptable for consumers with dormant

devices or active devices in credit mode, due to the risk of a pre-pay consumer running out of credit during a 7-day suspension, it was not considered appropriate for devices in pre-pay mode.

On this basis, a new plan was developed with a revised go-live date of 13 December 2020. It was also proposed that the functionality would be released in multiple drops; delivering a minimal viable product which would allow migrations to commence followed by further drops later in the year to complete the required functionality. DCC progressed with this plan but critical defects with the code were discovered during user testing in November which meant the December date was missed.

DCC resolved these issues and finally went live with the initial release at the end of February 2021. Further releases are planned in RY21/22 to deliver remaining functionality.

Core Release Programme

Core release 1.1 was delivered to plan in May 2020. The need for a second Core release was identified during the first part of RY20/21. This second release went live in September 2020 and addressed several emergent issues:

- The need to support PPMID firmware upgrade,
- The need to respond to the high level of alerts seen in production on the IOC cohort of migrated meters by making changes to suppress some alerts,
- The removal of PIN randomisation for the IOC cohort,
- The addition of split supplier IDs and fie sequencing for the MOC capability.

Aclara Testing

SIT testing of Aclara devices completed on time but during testing of the Core 1.1. release with Aclara meters, further device specific behaviour was discovered in relation to Auxiliary load functionality. This drove further work for DCC to document this behaviour and consult on a new version of the SMETS1 Supporting Requirements (S1SR) document. Aclara DMCs were added to the EPCL on 25th August 2020. BEIS has acknowledged that the firmware issues with Aclara meters were outside of DCC's control.

DMCT

Several DMCT issues were identified and addressed during the year, as below:

- **IOC** – Testing of DMCs for IOC was completed during RY20/21 with the last entries onto the Eligible Products Combination List (EPCL) made on 4th December 2020. This enabled all dormant devices to be migrated by the end of 2020.
- **MOC** – DCC had determined that all of the Secure DMCs in scope were equivalent to the DMC tested in SIT and planned to add all subsequent DMCs to the EPCL shortly after go-live of the Secure capability, by the end of August 2020. Objections to this proposal from one energy supplier resulted in a delay whilst BEIS made a determination in relation to this objection. The remaining DMCs were added by the end of November 2020. Some DMCs originally considered out of scope for migration as they include functionality not supported by the DCC solution were also confirmed as being in scope which drove additional DMCT testing not originally planned. Final device entries for MOC Secure are planned for 30th July 2021.
- **FOC** - Secure DMCT was impacted by the delays to the main cohort as DMCT does not begin until Systems Integration Testing (SIT) has completed. This was further compounded by active energy suppliers finding firmware defects in their devices just as DMCT was about to start in February 2021. DCC had to suspend and then restart DMCT once firmware fixes had been made available causing an additional 4-week delay.
- **SEC Changes** – BEIS recently changed the SEC to obligate DCC to make a case for migrating devices which are not currently covered by SEC rules. DCC is required to submit proposals to the Secretary of State making an economic case to migrate these devices as well as proposing changes to the SEC to allow these to be migrated. This will carry additional work for Service Delivery and for Operations into the next year. This was not part of DCC's original planning.

- **Device security testing** – DCC were requested by SEC Panel's Security Sub-Committee to carry out device security testing in order to assess the risk of vulnerabilities in SMETS1 devices being exploited to attack DCC's total system via the Home Area Network (HAN). While this risk was always there, its scale would be unknown until testing was carried out to assess it. The delivery of this testing was not explicitly part of the programme's initial scope. DCC ran a contract tender for this work which resulted in more commercial and legal resource being deployed than was originally planned.

1.3.2 Commercial and Regulation

There are two main capabilities within the Commercial and Regulation team that support SMETS1.

Commercial - Drive and lead on procurements and negotiations with current and new Service Providers for any of the capability releases; and Complete and review contract signatures for Service Providers' contracts for any of the capability releases.

Regulation - Run consultations as required for SEC designated documents; Produce Live Services Criteria documentation for go-live and present to SEC Panel and BEIS; and identify requirements and dependencies for go-live governance including internal DCC governance and external governance.

Activities driving change in resource in RY20/21

There were four main areas of activity that drove the variance in resources:

- Industry challenge to DCC's proposals for adding EPCL entries for MOC – DCC had to prepare evidence for BEIS to make an adjudication on the addition of EPCL entries by substantive equivalence. DCC had to collate a substantial amount of evidence which required legal and regulatory review. Changes to the SEC were also required as a result of this which drove a need for more regulatory resource.
- Device security testing – DCC were requested by SEC Panel's Security Sub-Committee to carry out device security testing in order to assess the risk of vulnerabilities in SMETS1 devices being exploited to attack DCC's total system via the Home Area Network (HAN). DCC ran a contract tender for this work which resulted in more commercial and legal resource being deployed than was originally planned.
- FOC Legacy Technical Issues – Once legacy technical issues were discovered in Systems Integration Testing, DCC had to make changes to supplier contracts to carry out additional proof of concept tests and then change the design of its migration solution. This drove a requirement for more commercial resource. Amendments to the SEC also had to made which used more regulatory resources.
- Core Release 1.2 – an extra release of core functionality was delivered which required additional contracting with suppliers and changes to the SEC.

The activities described above necessitated the increased or extended use of the following resources: Programme Director, Senior Regulatory Advisors, Senior Regulation Manager, Commercial Business Partners, Contract Managers, Procurement Manager and Legal Counsel.

1.3.3 Operations

The SMETS1 Operations team's primary focus and purpose was supporting the migration activity as well as establishing an Early Life Support function in time for the first capability release. As part of this, a period of internal DCC testing immediately prior to go live – Transition to Operations (TTO) – takes place before each capability release. This will involve business acceptance and operational acceptance testing to ensure that the service can be handed over to operational teams within the DCC and remaining non-functional processes and activities have been verified as being fit-for-purpose.

Original plans for operation resources assumed migrations would complete at the end of December 2020 but migration as continued beyond that due to delays in delivering the main programme cohort capabilities and a slower than anticipated migration rate from industry.

Activities driving change in resource in RY20/21

There were four main areas of activity that drove the variance in resources:

- Industry have migrated active devices slower than the rate previously assumed which has caused the overall migration plan to run longer than anticipated. Currently the number of migrations is averaging around 39% of the volumes which were forecast.
- IOC Delays to adding EPCL entries – Aclara devices were late being added to the EPCL due to device specific behaviours being discovered during testing that required either fixes from Aclara or updates to the SEC documentation before they could be added to the EPCL. This meant that commencing migration of the Aclara estate of over 1 million meters was delayed by several months and as a result the IOC migration lasted longer than originally planned.
- MOC EPCL entry delays – late delivery of the MOC cohort capability combined with a challenge from industry relating to proposed EPCL entries delayed migration of the MOC estate causing it to last longer than planned.
- FOC Delays – Both the availability of mandatory L&G Firmware and the difficulties with the migration of SIMs resulted in delays. Migrations are now likely to go well into next reporting year. It has been necessary to bring in or prolong the right expertise from the below to look at the technical requirements and the testing and the communication of that to the Customers.

The following roles were all required during the year and contributed to the variance when compared to the baseline; Customer Stakeholder and Engagement Manager, Data Architect, Device Specialists, E2E Architects, Early Life Support Analyst, Heads of Migration Control, Head of Service Design and Knowledge, Head of SMETS1 Operational Readiness, Operations Analysts, Planning Analysts, Senior Enterprise Service Assurance & Quality Manager, Technical Supports, Test Lead (BAT), Testing Services Managers and War Room Manager.

Activities driving change in resource in RY21/22

There is a significant decrease in incurred resource costs in RY21/22 relative to RY20/21. However, there is also a decrease in the baseline, resulting in a material resource variance. This is caused by the anticipated extended need of particular resources caused by:

- Delays to FOC and FOC DMCT. Launch of the main capability to migrate devices has been delayed. Issues with device firmware identified by active energy suppliers has compounded this meaning that migration will not complete until towards the end of the next reporting year.
- BEIS changed the SEC to require DCC to establish new ways of migrating devices (where it makes economic sense) that cannot be migrated under the current SEC rules. Migration of these devices was not part of DCC's original migration plan. Because these will require DCC to make changes to its migration solution and to the SEC, DCC anticipate that the 'mopping up' of these migrations will continue well into next year.

The activities described above are likely to necessitate the increased or extended use of the following resources; Customer Stakeholder and Engagement Manager, Data Architect, Device Specialists, E2E Architect, Early Life Support Analysts and Manager, Operations Analyst, Planning Analysts, Planning and Insights Manager, Reporting Analysts, Senior Enterprise Service Assurance & Quality Manager.

1.3.4 Security

The primary purpose of the SMETS1 Security team is to produce and finalise the Security Architecture and Risk Assessment for each of the programme's capability releases. This includes security assessing and assuring the integration of all SMETS1 service providers and components.

Activities driving change in resource in RY20/21

There were two main areas of activity that drove the variance in resources:

- Device security testing – DCC were requested by SEC Panel's Security Sub-Committee to carry out device security testing in order to assess the risk of vulnerabilities in SMETS1 devices being exploited to attack DCC's total system via the Home Area Network (HAN). While this risk was always there, its scale would be unknown until testing was carried out to assess it. The delivery of this testing was not explicitly part of the programme's initial scope.

  DCC ran a contract tender for this work which resulted in more commercial and legal resource being deployed than was originally planned. Extra security resource was required to create the tender documentation, adjudicate on bids and then oversee the testing activities. DCC has made several reports back to the SEC Panel Security Sub-committee in relation to this. They may request further work to be carried out next year as well.

- Delays to FOC – the delays to FOC and redesign of the migration solution, which was driven by legacy technology issues inherited by DCC, required an extension to the security resources on the programme in order to provide security assurance for the new designs.

The activities above meant the following roles were all required during the year and contributed to the variance when compared to the baseline: Lead Security Architect, Programme Assurance Security Specialist, Security Architect, Project Assurance Security Specialist, Security Culture Coordinator Cloud Security Architect.

1.3.5 Service Delivery

The overall purpose of this team is to deliver the programme for the Enrolment and Adoption of SMETS1 meters into the DCC in accordance with DCC Licence Conditions, liaising with internal and external stakeholders to ensure all end-to-end components are in place to enable the safe and efficient migration of meters.

Activities driving change in resource in RY20/21

Changes to the delivery plan set out in section 1.2.1 (Progress against objectives in RY20/21) above drove the need for additional Service Delivery staff, in particular project management and PMO resources, as more parallel project activity was required and projects ran for longer.

The following roles were all required during the year and contributed to the variance when compared to the baseline. Business Analysts, Delivery Support Analysts, PMO Analysts, PMO Manager, Programme Directors, Programme Manager and Project Managers.

Activities driving change in resource in RY21/22

There is a significant decrease in incurred resource costs in RY21/22 relative to RY20/21. However, there is also a decrease in the baseline, resulting in a material resource variance. This is caused by the anticipated extended need of particular resources caused by:

- Additional FOC releases in 21/22 – In order to start migrations on FOC as early as possible, the initial FOC release was a minimal viable product. Remaining functionality is being delivered in a number of releases during 21/22. This is driving the need for additional programme and PMO resource to manage these releases.

- SEC Changes – BEIS recently changed the SEC to obligate DCC to make a case for migrating devices which are not currently covered by SEC rules. DCC is required to submit proposals to the Secretary of State making an economic case to migrate these devices as well as proposing changes to the SEC to allow these to be migrated. This was not part of DCC's original planning and will require new projects to be established to deliver the required proposals and implement necessary changes to DCC's migration solution.

The activities described above are likely to necessitate the increased or extended use of the following resources: Business Analysts, Delivery Support Analyst, Enterprise Delivery Director, PMO Analyst, PMO Manager, Programme Managers, Programme Director, Project Managers.

1.3.6 Testing

The SMETS1 Test Services and Assurance Team will oversee multiple testing stages for the three different capability releases

Activities driving change in resource in RY20/21

There were two main areas of activity that drove the variance in resources:

- Delays to FOC go-live due to legacy technology issues – this drove a significant amount of extra testing due to the need to run a series of proof of concept tests as well as rerunning SIT testing. The SIT testing phase to deliver the main cohort capability lasted over 7 months longer than originally planned. Consequently, test assurance resources were required for longer.
- Core Release 1.2 – an extra release of Core functionality was delivered which required formal governance of test exit through SEC Panel's Testing Advisory Group (TAG). This drove a need for extra test assurance resources.

The following roles were all required during the year and contributed to the variance when compared to the baseline, Device Model Combination Testing Manager, Test Assurance Analysts.

Activities driving change in resource in RY21/22

There is a significant decrease in incurred resource costs in RY21/22 relative to RY20/21. However, there is also a large decrease in the baseline, resulting in a material resource variance. This is caused by the anticipated extended need of particular resources caused by:

- Additional FOC releases in 21/22 – In order to start migrations on FOC as early as possible, the initial FOC release was a minimal viable product. Remaining functionality is being delivered in a number of releases during 221/22. This is driving the need for test assurance resources to complete test assurance and test governance activities for these subsequent releases.

The material variance is caused primarily by the activities of: Test Assurance Analyst and Test Assurance Leads.

1.4 Drivers for Variance – Non-Resource

1.4.1 Summary

During RY20/21, there were seven procurements within the SMETS1 programme that had material variance, (i.e. over £0.15million). The breakdown is provided below.

Table 3: Material variance for SMETS1 non-resources internal costs

	Incurred (£m)	RY20/21	RY21/22	RY22/23	
	Total Incurred External Services	9.957	4.909	2.384	
	Total Incurred Internal Services	0.552	0.516	0.504	
	Variance (£m)	**RY20/21**	**RY21/22**	**RY22/23**	
	Total Variance External Services	7.301	4.585	2.384	
	Total Variance Internal Services	0.069	0.355	0.504	
GL	**Variance – detail (£m)**	**RY20/21**	**RY21/22**	**RY22/23**	**Procurement Type**
ES	SMETS1 delivery partner - REDACTED	1.663	0.590	-	REDACTED
ES	SMETS1 Requesting Party – REDACTED	1.966	1.976	0.528	REDACTED

ES	SMETS1 Requesting Party-REDACTED	2.215	0.712	-	REDACTED
ES	SMETS1 migration - REDACTED	0.600	0.678	-	REDACTED
ES	SMETS1 Migration Reporting System	0.340	-	-	REDACTED
ES	SMETS1 Device Security Testing	0.472	-	-	REDACTED
IS	S1MRS & SDMR	0.069	0.355	0.504	REDACTED

1.4.2 SMETS1 delivery partner - REDACTED

Driver for the original procurement and first extension

DCC first ran a procurement to select a resource partner to provide key resources for the SMETS1 programme particularly during the period of greatest activity leading up to MOC cohort go-live in 2019 and 2020. This was justified in the Price Control for RY18/19.

An extension to the engagement of this delivery partner was justified in last year's Price Control, RY20/21.

DCC sought and obtained approval from the Board in September 2019 to retain delivery partner resources until May 2020, and to reduce resource levels to 13 in a phased manner by this date. (The resources chart below shows that resource levels in fact reduced to 11 by the May 2020 date.) The additional cost for the extension equates to REDACTEDfurther to the REDACTEDinitial extension, previously approved by the Board in November 2018.

Securing Value for Money

In maximising value for money while ensuring that the Programme remains appropriately resourced, DCC carefully assessed several options, giving weight to the options that reduced risk, mitigated increasing costs and ensured buy-in from the Programme Directors. These options were:

- **Option A:** extend the current delivery partner with same level of resources until May 2020. DCC did not recommend this option to the DCC Board because of cost.
- **Option B:** replace the existing delivery partner resources with non-Delivery Partner contractors. This option meant that there would be no delivery partner resources left in place post September 2019. This would leave a significant gap in resourcing while contractors were being sourced. This option was discounted due to excessive risk to the delivery of the Programme and achievability in the timescales.
- **Option C:** retain the delivery partner resources beyond September 2019, whilst swapping out with non-delivery partner contractors as soon as practically possible. DCC did not recommend this option as it required filling 20 positions whilst retaining 13 critical roles from the delivery partner.
- **Option D:** challenge REDACTED to look at the existing SMETS1 Programme and recommend improvements and efficiencies and keep the solution at or within the cost of option C.

The programme recommended that the Board endorse option D on the basis that it overall reduced the risk of a cliff edge exit and established an agreement to progressively reduce the overall team size and was cost effective. More specifically, the benefits of option D were that it:

- Retained the insight gained from working within the Programme
- Reduced cost through a rationalisation of the resource base.
- Retained critical resources from the delivery partner.

Based on the expected cohort delivery timelines, the delivery partner resources were required until May 2020 at a cost of REDACTED. This included contingency of REDACTEDin the event of unforeseeable further change. The cost of this preferred option was higher than the least expensive option by REDACTEDand lower than the most expensive option by REDACTED. Based on a range of considerations we came to the conclusion that this option was the most economic and efficient.

Driver for the further extension in RY2021

As SMETS1 projects and programmes were delivered, DCC rolled off REDACTED resource or replaced it with cheaper alternatives. Only a few critical resources, those with scarce skills or experience, were retained in the later stages of the programme. Delays to MOC and FOC cohort go-lives resulted in extra requirements for the reporting solution and the need to carry out an additional Core release. This in turn drove an increase in resource requirements, above the levels previously anticipated.

SMETS1 started RY20/21 with 22REDACTEDresources and finished with four (one programme manager working on FOC and three architects). The architects had very specific skillsets relevant to the delivery of FOC that DCC had trouble sourcing from the external market. The programme also used one REDACTED programme manager to work on the Dual Band Comms Hub (DBCH) programme to fill a gap at short notice. The details of the resource profile are shown in the figure below:

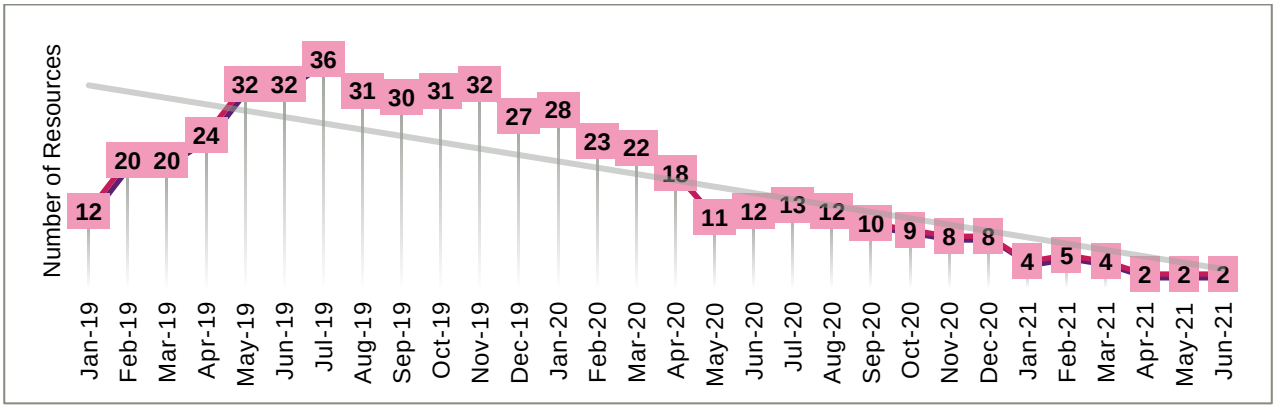


Figure 2: Delivery partner resource profile (FTEs)

Securing Value for Money

There were two main stages in securing value for money and managing the contractual arrangement with the delivery partner. Firstly, there needs to be high level sign off for the overall need for engagement and budget. Secondly, individual engagements and extensions must be correctly authorised through the appropriate DCC procurement and purchase order system.

Adhering to a governance process

The below table shows the overall authorisation for the delivery partner engagement and the clearance of the budget.

Original board papers for REDACTED resource were, BPC2019029 approved in September 2019 for REDACTEDand BPC2018020 Approved in November 2018 for REDACTED.

The additional spend in 20/21 with REDACTED to complete FOC and other core activities was covered in the following PCRs which were approved via Programme and Operations Review (POR) / Delivery Hub Working Group (DHWG):

- PCR21/20_06,
- PCR – 251,
- Business Case for DBCH Programme Manager.

Table 4: SMETS1 delivery partner - overall governance and budget approval

Type	Name	Date	Value
Contract Signed		Dec 2018	

Type	Name	Date	Value
DCC Board Paper	Initial Paper - Nov'18 Paper 12 (BPC2018020)	Nov 2018	REDACTED
	Updated Paper - Sep'19 Paper 9 (BPC2019029)	Sep 2019	REDACTED
Business Case	SMETS2 - R2/DBCH Business Case - Feb'20	Feb 2020	REDACTED
PCRs	PCR21/20_06 - Architects	May 2020	REDACTED
	PCR - 251	Nov 2020	REDACTED
Cumulative Governance			REDACTED

Adhering to a procurement process

The table below shows the individual engagements and extensions that contributed to the additional spend in RY20/21.

Table 5: SMETS1 delivery partner - additional RY20/21 spending - purchase order authorisations

PO Name	PO Number	Date Issued	Value
R2/DBCH Support	4800437370	Mar 2020	REDACTED
Delivery Partner - up to May'20	4800432854	Mar 2020	REDACTED
Delivery Partner - up to May'20	4800438819	Mar 2020	REDACTED
Architects - Jun-Sep'20	4800445388	Jun 2020	REDACTED
Delivery Partner - up to Jul'20	4800445725	Jun 2020	REDACTED
Delivery Partner - CN029 - end Aug'20	4800455174	Sep 2020	REDACTED
Delivery Partner - PCR251	4800463892	Nov 2020	REDACTED
Delivery Partner - CN033	4800474960	Jan 2021	REDACTED
Delivery Partner - CN034	4800479208	Feb 2021	REDACTED
Cumulative POs allowing RY20/21 spending			REDACTED

RY21/22

It is an enduring annual cost, but the forecast incurred costs decrease significantly in RY21/22 as SMETS1 programme activities reduce and stop and it moves to live operations. However, the overall variance is material due to a significantly lower (zero) baseline.

1.4.3 SMETS1 Requesting Party – REDACTED

These costs are part-forecast, and part-additional costs related to the SMETS1 Requesting Parties, REDACTED and REDACTED.

Both procurements were described and justified in last year's Price Control, RY19/20.

Drivers for the Procurement

REDACTEDand REDACTED are two of the incumbent Smart Metering Service Organisations (SMSOs) in the Final Operating Capability (FOC) cohort. As such, DCC had to contract with them to create and operate a Requesting Party (RP) capability to facilitate migration of meters from their systems to DCC's SMETS1 solution.

Timelines slipped from July 2020 to February 2021 requiring further approvals to cover the increases in spending.

DCC incurred costs of REDACTEDwith REDACTEDin RY20/21 and REDACTEDwith REDACTED to develop and test this capability.

Securing Value for Money

Adhering to a governance and procurement process

The original authorisation was gained through the board paper, BPC2019022, in October 2019 which requested approval to spend REDACTEDwith REDACTED and REDACTED with REDACTED, for build of the solution

As the timeline moved, the Board approved additional expenditure in December 2020 and February 2021.

RY21/22 and RY22/23

These are enduring annual costs. The forecast incurred costs decrease significantly over the next two years as SMETS1 programme activities reduce and stop and we move to live running. However, the overall variances are material due to a significantly lower (zero) baseline.

1.4.4 SMETS1 migration - REDACTED

These costs were expected - REDACTED). This procurement was described and justified in last year's Price Control, RY19/20.

Driver for the Procurement

REDACTED are one of the incumbent Smart Metering Service Organisations (SMSOs) in the Middle Operating Capability (MOC) cohort. As such, DCC had to contract with them to create and operate a Requesting Party (RP) capability to facilitate migration of meters from their systems to DCC's SMETS1 solution. Further details were provided in last year's Price Control.

The capability went live in March 2020 and DCC incurred costs of REDACTEDin RY20/21 to operate the solution and facilitate the migration of meters from its service.

The costs that were incurred over the course of RY20/21 mainly relate to the Build and Operate phases of the solution. The individual change requests (CRs) that cover the RY20/21 spend are set out below.

Table 6: Change requests covering the REDACTED spend in RY20/21 (CRs under £50k not included)

Regulatory year (RY)	Type	Description	Value (£)

19/20 & 20/21	Part Build but mostly Operate	CR1195 – Standing up an MDUST service in UIT and provision of additional SIT & UIT environments until Oct 20.	REDACTED
20/21	Operate	Phase 2 contract covering operation of the REDACTED solution.	REDACTED
20/21 & 21/22	Operate	CR4036 – Ext of CR1195 from Nov – Apr 21.	REDACTED
21/22	Operate	CR4170 -Extension of the Phase 2 contract until September 21 and incorporating an Ext to CR4036.	REDACTED

Securing Value for Money

As described last year, REDACTED is an incumbent supplier of SMSO services and without their support the meters for which they provide those services could not be migrated into DCC's systems. Therefore, this procurement was single source, but followed the approach set out in the SMETS1 Sourcing Strategy to deliver value for money. Upon receipt of the initial quote from REDACTED for the migration work, DCC undertook the following activities to drive value for money:

- Reviewing the quotation in detail with the supplier to challenge them around their costings and remove those that we believed were unjustifiable e.g. costs for office space,
- Revisiting the scope of the requirements with internal DCC stakeholders to ensure they were adequately balanced against the cost of REDACTED providing them e.g. there was no 'gold plating' of requirements,
- Working through alternative delivery models with REDACTED and DCC's internal stakeholders to reduce costs, while still delivering the requirements e.g. changes to REDACTED's support model for migration.

DCC's efforts in this have resulted in REDACTEDsaving against the original quotes for the design and build phase of the migration solution.

Initial price (£m)	Final Price (£m)	Difference (%)
REDACTED	REDACTED	**-13.6**

RY21/22

It is an enduring annual cost, but the forecast incurred costs decrease significantly in RY21/22 as SMETS1 programme activities reduce and stop and we move to live operation. However, the overall variance is material due to a significantly lower (REDACTED) baseline.

1.4.5 SMETS1 Migration Reporting System

The original procurement of SMETS1 Migration Reporting System was justified in last year's Price Control, RY19/20.

Driver for the Procurement

This is a capability developed by REDACTED for DCC to enable DCC's Migration Control Centre (MCC) to plan and report on progress of migrations. During RY20/21 DCC made improvements to the solution in line with lessons learned from go-live of each of the cohorts. New requirements improved the accuracy and usability of the solution. These costs also include costs of supporting the solution in-life.

The SMETS 1 Programme commissioned IT and Networks (IT&N) to develop a reporting database to monitor the end to end migration process. The SMETS 1 Migration Reporting System (S1MRS) was specifically commissioned with the purpose of monitoring dashboards and customer reports detailing all migration successes and failures.

The development of this database was initially covered by the existing contract that DCC holds with REDACTED IT&N (IT&N). The current contract between DCC & IT&N provides a 9am – 5pm; Monday – Friday support model for the SMETS 2 BIMI database, but this did not include the S1MRS or any Out of Hours (OOH) support for evenings and weekends. The lack of technical support outside of business hours posed a significant risk to the migration activity.

Securing Value for Money

To ensure that value for money was being secured, we explored the following options for the SMETS1 Migration Reporting System:

- Option 0 – Do Nothing,
- Option 1 – Full 24 x 7 Support,
- Option 2 – Support 9am – 10pm & weekends,
- Option 3 – Support 9am – 5pm, on call 5pm – 10pm & weekends.

Option 2 was selected as the preferred solution. It ensures that there is resource cover whilst most of the migration activity is taking place in case any defects are raised in the Production environment. This option was also deemed to deliver the best value for money.

Securing Value for Money

This was a single source procurement with REDACTED that followed the full and standard DCC Change Request process.

REDACTED

Figure 3: SMETS1 Migration Reporting System - RY20/21 incurred costs breakdown

Adherence to Change Process

There were a large number of change requests relating to the spend in RY20/21. All of these were authorised according to DCC's change process. The table below sets out the authorisation timescales for each of these CRs.

Table 7: Details of the change requests driving RY20/21 costs (only CRs that have incurred in-year costs of over £20k included)

CR#	Title	Supplier	IA Fixed Price Cost / £	Date Raised	IA Received	DCC IA Approved	CAN Signed
CR1023	sFTP File Setup – DCC Charging Solution	REDACTED	REDACTED	3/8/18	16/5/19	8/11/19	7/5/20
CR1023	sFTP File Setup – DCC Charging Solution	REDACTED	REDACTED	3/8/18	16/5/19	1/7/19	7/5/20
CR1185	SMETS1 SFTP requirements for MOC – Secure	REDACTED	REDACTED	3/7/19	17/10/19	21/10/19	24/6/20
CR1185	SMETS1 SFTP requirements for MOC – Secure	REDACTED	REDACTED	3/7/19	17/10/19	8/11/19	13/7/20

CR#	Title	Supplier	IA Fixed Price Cost / £	Date Raised	IA Received	DCC IA Approved	CAN Signed
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	17/10/19	8/11/19	5/2/20
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	15/11/19	19/11/19	4/3/20
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	25/11/19	11/12/19	25/2/20
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	15/10/19	12/11/19	10/1/20
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	16/9/19	30/10/19	7/5/20
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	16/9/19	31/10/19	22/6/20
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	15/10/19	22/10/19	5/2/20
CR1195	Standing up and Supporting a MDUST Service in UIT	REDACTED	REDACTED	6/8/19	1/5/20	19/5/20	23/7/20
CR1274	SMETS1 Core Release 1.1	REDACTED	REDACTED	2/12/19	7/2/20	4/3/20	21/4/20
CR1274	SMETS1 Core Release 1.1	REDACTED	REDACTED	2/12/19	12/2/20	16/7/20	13/8/20
CR1274	SMETS1 Core Release 1.1	REDACTED	REDACTED	2/12/19	27/8/20	28/8/20	21/10/20
CR1274	SMETS1 Core Release 1.1	REDACTED	REDACTED	2/12/19	24/4/20	23/6/20	24/6/20
CR1274	SMETS1 Core Release 1.1	REDACTED	REDACTED	2/12/19	27/1/20	5/2/20	18/5/20
CR1274	SMETS1 Core Release 1.1	REDACTED	REDACTED	2/12/19		6/2/20	16/4/20

1.4.6 Device Security Testing

Driver for the Procurement

DCC were requested by SEC Panel's Security Sub-Committee to carry out device security testing in order to assess the risk of vulnerabilities in SMETS1 devices being exploited to attack DCC's total system via the Home Area Network (HAN).

The SMETS1 security architecture has a number of defences and controls that mitigate identified threats and their associated risks, including HAN risks. However, DCC wished to determine whether a compromised HAN device could be leveraged to initiate an attack to the SMETS1 Total System via the S1SP or could lead to a CNI level supply impact.

The lack of assurance around HAN devices led to unacceptable residual and operational risk. Therefore, DCC required a supplier to design and deliver a programme of Focused Negative testing of named HAN device controls that will quantify the true level risk to DCC Total System.

The strategy was to focus on the following three specific risks which directly related to Total System, delivery and enduring DCC operational risk impacts:

1. Cyber attacker misuses a connection to CADs (or other HAN devices) to launch an attack on multiple Meters via the internet
2. Actor deliberately compromises the integrity of Meters via external cyber-attack e.g. malware, SQL injection, buffer overflow etc,
3. Manufacturer of CADs tampers with equipment within the HAN either to attack the HAN directly or make an attack via the internet easier.

DCC went to market to procure the services of a provider to deliver the following:

i. Design and execution of Focused Negative standard test framework, to cover all risk scenario identified against each named DMC,

ii. Based on existing knowledge, outline any DMC that has specific additional risks to completion of the testing by 31st August 2020,

iii. Provide a logistics plan showing how they intend to acquire all required hardware,

iv. Provide an individual report detailing identified vulnerabilities per DMC,

v. Provide detail on re-testing process following any remedial actions identified from initial reports.

Securing Value for Money

DCC followed a full competitive procurement process as detailed in the table below.

Sourcing Approach

The table below provides a brief summary of the procurement approach and savings realised through DCC.

Table 8: Procurement Evaluation Breakdown

Procurement – SMETS1 *Device Security Testing*	
Number of Initial Expressions of Interest	3 - REDACTED Internal Subject Matter Experts (SMEs) identified a shortlist of three potential suppliers of these services. Following this, a competitive procurement was held to seek proposals. The Request for Proposal was issued to the following suppliers: • REDACTED • REDACTED • REDACTED
Number of Bids received	2 - REDACTED& REDACTED The RFP was evaluation criteria was split: • Quality – 60% • Commercial – 40% Following the RFP response deadline, two suppliers, REDACTEDand REDACTED submitted proposals.

<table>
<tr><td>Number of Bids shortlisted</td><td>2 - REDACTED& REDACTED

The initial written response scoring was carried out on 9th April 2020. Q&A sessions were held with each supplier to discuss their proposals in further detail and resultant from clarifications REDACTEDsubmitted a revised proposal.

A final moderation session was held 14th May 2020 and proposals scored for quality and commercial criteria as follows:

<table><tr><th>Proposal</th><th>Quality Score</th><th>Commercial Score</th><th>Total</th><th>Rank</th></tr><tr><td>REDACTED</td><td>55.5</td><td>40</td><td>95.5</td><td>1</td></tr><tr><td>REDACTED</td><td>45.0</td><td>10.34</td><td>55.34</td><td>2</td></tr></table>
Commercial/Pricing evaluation:

Following the RFP response submissions, the commercial evaluation was completed by REDACTED:

<table><tr><th>Supplier</th><th>Total Cost (£)</th></tr><tr><td>REDACTED</td><td>REDACTED</td></tr><tr><td>REDACTED</td><td>REDACTED</td></tr></table></td></tr>
<tr><td>Strengths of Selected Bidder</td><td>It is recommended that in accordance with the terms of the Request for Proposal, REDACTED are awarded a contract for SMETS1 Device Security Testing.

The reason for the recommendation is that following a compliant and rigorous tender the recommendation represents the best value for money. REDACTEDprovided a compliant proposal at a significantly lower price.</td></tr>
<tr><td>Challenge by DCC</td><td><table><tr><th>Initial Price</th><th>Final Price</th></tr><tr><td>REDACTED</td><td>REDACTED</td></tr></table></td></tr>
</table>

1.4.7 Internal Services

There was no Internal Services material variance in RY20/21 as the annual incurred costs for S1MRS & SDMR were largely covered by the baseline.

To note, in last year's and in this year's Price Control we have had spending and baseline for SMETS1 Migration Reporting System, S1MRS and SDMR appearing in both External Services and Internal Services. We will look to consolidate the spend and baseline in the same GL code next year.

RY21/22

In RY21/22 there is forecast material variance of £0.355m for Internal Services non-resources costs. In RY22/23 there is forecast material variance of £0.504m for Internal Services non-resources costs.

As can be seen in the table below, incurred costs, in the form of the annual S1MRS & SDMR item, are flat across the forecast years.

However, in RY21/22, the overall variance is material due to a significantly lower baseline.

RY22/23

In RY22/23, there is still an overall material variance due to the zero baseline in RY22/23. This is because there are allowed baselines only for the next two years.

Table 9: Details of material Internal Services variances in RY21/22 and RY22/23

Forecast Year		RY20/21	RY21/22	RY22/23	RY23/24	RY24/25	RY25/26
Total IS Baseline	**£m**	**0.483**	**0.161**	**-**	**-**	**-**	**-**
Total IS Incurred	**£m**	**0.552**	**0.516**	**0.504**	**-**	**-**	**-**
S1MRS & SDMR	£m	0.552	0.516	0.504	-	-	-
Total IS Variance	**£m**	**0.069**	**0.355**	**0.504**	**-**	**-**	**-**

1.5 SMETS1 External Costs – SMETS1

Under current market arrangements, five Smart Meter Service Operators (SMSOs)[2] serve over 80 energy suppliers with six different brands[3] of meters, supported by four different CSPs. The complexity of the SMETS1 Programme stems from establishing a single interface and system that will enable interoperability in all circumstances. The solution provides important shared benefits for industry and consumers, particularly the ability for all SMETS1 customers to maintain their smart services following a decision to switch supplier. The SMETS1 solution incorporates a range of existing SMETS1 Service providers, along with new service providers, to enable a service that allows all DCC Users to communicate with all enrolled SMETS1 meters.

Over the course of RY18/19, DCC procured the vast majority of the SMETS1 services that underpin the SMETS1 solution. The procurement of these services and the onboarding of the associated service providers were explained and justified as part of last year's price control submission. Over the course of RY20/21, the Programme has made significant progress, notably in delivering both IOC and MOC, as well as the continued development and implementation of the infrastructure that will support the roll-out of FOC.

As per last year, SMETS1 external costs have primarily been driven by Change and Project Requests that sought extended cover for the development and implementation of the different testing phases due to the delay on IOC, MOC and FOC.

Over the course of RY20/21, DCC has incurred a total of approximately £482.3m in external costs. A breakdown of the external costs can be summarised as follows:

Programs	(£m)
SMETS2	363.8
SMETS1	94.3
Switching	24.2

In the sections below we provide a brief overview of the commercial approach and structure that supports the SMETS1 programme together with a detailed explanation of the different project costs that were raised during the year.

[2] REDACTED
[3] REDACTED

1.5.1 Commercial Approach and Overview of the SMETS1 Supply Chain model

As per the explanations in the past two price control submissions, it is worth reiterating that the negotiations with the SMETS1 Service Providers have all been very challenging since DCC had little commercial leverage over incumbent providers. The SMETS1 solution is heavily reliant on the provision of services by existing SMETS1 Service providers. DCC previously devised for that purpose a strategy with a range of negotiating techniques and commercial levers to achieve value for money for consumers.

Notably, throughout the design phase of the Programme and the procurement of the SMETS1 Service Providers (S1SPs) during RY18/19, DCC was able to apply competitive pressure by developing in parallel two competing design options, of which one option involved DCC offering the integration of SMETS1 meters to energy suppliers directly and therefore replacing the role of the existing service providers. In anticipation of the Government making a decision on these options (BEIS go/no-go decision was made in 2018.), DCC was able to create a competitive environment that has applied pressure on delivery time and costs on the existing SMSOs.

All SMETS1 Fundamental Service Providers have been procured over the course of RY18/19 and RY19/20; the necessary background and justifications to these procurements were set out in detail through DCC's price control submissions in those respective years.

For completeness, we include a summary of the different components that make up the design of the SMETS1 service together with an overview of the SMETS1 supply chain model. The SMETS1 service design remains predicated on the concept of three capability releases deployed sequentially, with periods of platform stabilisation built in to mitigate the risks associated with a large volume of change. The service incorporates a range of existing SMETS1 service providers, along with new service providers, to enable a service whereby all DCC Users are able to communicate with all enrolled SMETS1 meters.

System Component	Description
Data Service Provider (DSP)	Amendments are being introduced to the existing DSP framework to accommodate SMETS1 device validation and routing rules.
SMETS1 Service Provider (S1SP)	Provide the service that translates the DCC format service requests into a format that SMETS1 meters can understand. S1SPs perform in effect an upgraded instance of SMSOs.
SMETS1 Communications Service Provider (S1CSP)	DCC will be utilising the S1SP network to communicate with, and control, the SIM in each communication hub. S1CSPs will support this communication function.
DCO (Dual Control Organisation)	A newly established component that enhances the security arrangements of the SMETS1 solution. It prevents the S1SP from being compromised and mass meter attack.
Commissioning Party (CP)	A newly established component that applies only during the migration of SMETS1 Devices into DCC. The Commissioning Party is performed by DCC to enable Smart Metering Systems that have been successfully migrated to DCC to be set up as "Commissioned". DCC is providing this capability as an alternative to an Active Supplier having to undertake these commission steps.

Table 14: An overview of the SMETS1 System Components

1.5.2 SMETS1 Change Request and Project Request Costs

The table below provides a brief summary of the material SMETS1 CRs and PRs that were justified over the course of the past two years together with an indication as to which phase of the Programme they relate to,

as well as what and who has driven them. The materiality threshold for external SMETS1 costs is the same as for non-SMETS1 i.e. £1m. The CRs/PRs highlighted in pink are of a material value and were completed over the course of RY20/21; they are justified in more detail further below. The other CRs/PRs were justified in previous price control submissions.

A proportion of the project costs that were signed off over the course of RY20/21 are generally due to the delay of the Programme and relate to the extension of activities that were instructed under previous CRs and PRs; other CRs and PRs however served the purpose of completing the requirements that are captured in previously agreed contracts but that were de-scoped from those contracts at the time, often for time critical and Programme delivery purposes.

Also, contrary to previous years, we have excluded from the narrative the timetables for each CR/PR. Instead, we have consolidated this information into the supplementary finance schedules, which are attached to this submission. We have done this to reduce length and allow Ofgem to review the timelines in one location.

A breakdown of the costs of each CR/PR and how they are being financed across different RYs is set out in the supplementary schedules of the RIGs.

CR Ref #	Description	Service Providers Affected	Driver
Core			
CR1303	Covers Migration Control Centre improvements and mitigate operational risk across the SMETS1 Portfolio, specific to the IOC Service Providers.	**CGI**	DCC-BEIS (LC13 plan)
CR1195	Responds to the request for the DSP to stand up and provide support for a MDUST service in the UIT Environments.	**CGI**	DCC-BEIS (LC13 plan)
IOC			
CR1181	Covers for enduring SMETS1 IOC Service from the first full month of SMETS1 IOC live running	**CGI**	DCC-BEIS (LC13 plan)
MOC			
CR1196	Responds to the request for DSP to perform detailed execution of System Integration Testing (SIT) for SMETS1 MOC-Secure covering the MOC-Secure meters device cohort.	**CGI**	DCC-BEIS (LC13 plan)
PR1231	Cover for MOC Secure Migration Solution Testing, Dormant Meter Readiness Testing and SIT including End of Cycle 1 (EOC1), EOC2 and post TAB work-off activity.	**CGI**	DCC-BEIS (LC13 plan)
FOC			
PR1230	Cover for FOC SIT testing and associated support, for remaining tests in FOC Stages 1, 2 and 3.	**CGI**	DCC-BEIS (LC13 plan)
PR1232	Covers the second extension of FOC SIT (following on from PR1230) and seeks to enable the Programme to deploy some FOC devices into Production before the end of 2020.	**CGI**	DCC-BEIS (LC13 plan)
PR1109	Covers for the DSP to support SMETS1 FOC Pre-User Testing Service (UTS).	**CGI**	DCC-BEIS (LC13 plan)

CR1123	Covers for the test execution of System Integration Testing (SIT) for FOC.	**CGI**	DCC-BEIS (LC13 plan)
CR1177	Covers the Level 2 applications support DXC will be providing in support of FOC	**DXC**	DCC-BEIS (LC13 plan)
CR1214	Facilitates PAN card disablement feature support in S1SP to enable Retail Network Service Providers (RNSP) to continue to send messages and maintain and operate that channel for an additional 336 (or x) hours after the device has been migrated.	**Secure**	DCC-BEIS (LC13 plan)
PR1134	Provides commercial cover for the execution of Device Model Combination Testing (DMCT) and Pending Product Combination Testing (PPCT) for three specific IOC DMC tranches.	**CGI**	DCC-BEIS (LC13 plan)
CR1382	Covers the extension of enduing IOC support for a further 7 months, up to and including the end of February 2021, with the option to extend all or any of these services beyond that on a month-by-month basis.	**CGI**	DCC-BEIS (LC13 plan)

Table 15: Breakdown of CRs and PRs by RY and Service Provider

1.5.3 SMETS1 Core Capabilities

CGI – CR1303 (SMETS1 Core Uplift 1.2)

Drivers and Scope

The purpose of SMETS1 core uplift 1.2 is to upgrade the SMETS1 solution so that it comprises Device Model Combinations (DMC) that operate against the CGI IE S1SP and MOC Secure S1SP. CR1303 incorporates the following changes:

- Handling of Split Supply for MOC and FOC (CR1325): this change seeks to address the existing validation in the migration process that prevents the migration of devices in scenarios of split supply.
- Pre-Migration Configuration changes (CR1303): this change is related to event generation rules on a particular device being set too sensitively by the manufacturer or the supplier, leading to the condition repeatedly triggering and repeatedly sending duplicate alerts “storm alerts”.
- Non-randomisation of PINs (CR1303): following engagement with wider industry, it was determined that meter manufacturers were not setting a single default PIN number on devices. This amendment will therefore back out the changes introduced by the previous change.
- Leading Zeros in MPRN field (CR1303): this amendment is required to correct an issue with the way MPRNs are represented in migrations. The MPRN field is handled differently by different systems. In some cases, it is treated as a string enabling MPRNs with leading zeros to be sent, whereas other systems treat the field as a number and therefore do not allow leading zeros.
- Removal of File Sequencing for MOC Secure (CR1303): this change removes the SEC requirement that obligates service providers to process migration files in sequence. Currently, significant manual intervention is required to progress migration files, and this is not sustainable for the future volume of migrations.

CR1303 introduces essential improvements to the SMETS1 Migration Control Centre (MCC). Failure to make these changes would have caused operational risks across the entire SMETS1 Portfolio, and in particular to migration of devices associated to the IOC meter cohort.

Securing Value for Money

During negotiations an additional item of work was added to the scope of this CR, adding a further REDACTED. This was originally scoped out as a small change CB095 which was to remove the Pre-Migration Configuration from the SMETS1 Uplift 1.2 code.

CGI submitted two versions of their FIA and Price Breakdown for this change and to support the dialogue and to ensure work continued without a delay to the timescales, three UWOs were issued, which did not introduce any further commercial or delivery risk to this change.

DCC secured value for money for this change by challenging CGI on the scope of a subset of resources and the expense allowance being applied. On a like for like basis, DCC were able to secure a price reduction of REDACTED, however this was offset by the additional scope change to accommodate CB095. If this additional scope is added into the starting price, negotiations resulted in a 3.7% discount.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	v1.0 (£)	Total Price (£)	delta to v1.0 (£)
Setup Labour Cost	REDACTED	REDACTED	REDACTED
Core DSP Team Setup Expenses (see UK Expenses tab)	REDACTED	REDACTED	REDACTED
ALM Licences (see ALM licences tab)	REDACTED	REDACTED	REDACTED
EIT Environment costs Jun 20 - Jul 20 (see EIT environment tab)	REDACTED	REDACTED	REDACTED
Working Capital Charge	REDACTED	REDACTED	REDACTED
Total Fixed Price Charges (excluding finance)	REDACTED	REDACTED	REDACTED

Table 16: Price Breakdown CR1303

Initial IA price (£)	Final IA Price (£)	Difference (%)	Scope
REDACTED	REDACTED	(0.2)	CR1303 excl WCC
REDACTED	REDACTED[4]	(2.24)	CR1303 excl WCC and CB095

Table 17: Initial vs Final Price CR1303

CGI – CR1195 (Standing up and Supporting a MDUST Service in UIT)

Drivers and Scope

DCC is required to implement a new testing service that allows energy suppliers to test the migration of SMETS1 installations eligible to be enrolled into the DCC system. This service, known as MDUST (Migration Device User System Test), is a regulated requirement under the Migration Test Approach Document (MTAD). MDUST provides a service that mimics production migration as closely as possible. The service is designed to build confidence in the migration process across test participants by allowing them to complete the end-to-end lifecycle, i.e. from migrating their active installations to testing their back-end systems and processes.

In May 2019, DSP provided a Preliminary Impact Assessment in response to 'CR1126 – Standing up MDUST service in UIT'. Since then, DCC has revisited the requirements for the MDUST service and undertaken

[4] The value of this CR in the supplementary schedules is lower than this value. This is due to this CR including an element of 'time and materials', and therefore actual spend was lower than expected.

consultations with a view to developing a revised business case and a more detailed set of requirements. This work has resulted in a new set of requirements with an increased scope from that originally stated in CR1126.

The DSP code used for migration has already completed Pre-Integration testing and has been through a level of supplier testing as part of the Systems Integration Test under separate CRs and PRs. Under CR1195, DSP will prepare for and execute migration testing with Service Users within the UIT environments. Testing is to cover the following two SMETS1 capability releases:

- IOC
- MOC Morrison Data Services (MOC-MDS)

For the capability releases - MOC Secure and FOC, MDUST support was excluded from this CR as the level of demand and dates when the MDUST Service would commence was still being finalised.

To prepare for MDUST, the following high-level steps are required:

- SMETS1 solution testing within the UIT environments for each of the cohorts which establishes the DUST service
- Supporting the Systems Integrator in its execution of Technical Readiness Testing Level 3
- Environment Acceptance Test (EAT)
- Pre-MDUST Testing.

For IOC, step 1 was completed under PR1004 and does not form part of the scope of supply under CR1195. For MOC-MDS, steps 1 to 3 are to be completed under PR1091 as the basic solution is to be tested in UIT in preparation for establishing a DUST service.

The table below summarises what is in scope for CR1195 and where comparable work is covered under other CRs and PRs, across the two capability releases.

<table>
<tr><th>Stage</th><th>IOC</th><th>MOC-MDS</th></tr>
<tr><td>Establishment of DUST</td><td>PR1004</td><td rowspan="3">PR1091</td></tr>
<tr><td>Migration Solution TRT3 Support</td><td rowspan="3">CR1195 Setup</td></tr>
<tr><td>Migration Solution EAT</td></tr>
<tr><td>Migration Solution Pre-MDUST</td><td>CR1195 Setup</td></tr>
<tr><td>Execute the MDUST service</td><td colspan="2">CR1195 Execution</td></tr>
</table>

Table 18: Distribution of MDUST related activities across PRs and CRs

The MDUST service supports the preparatory activities that are required by testing participants prior to live migration of SMETS1 devices. A production-like service supports energy suppliers in building confidence in the migration solution and also promote a faster ramp-up of live migration volumes. Not providing MDUST or a delay to MDUST could have led to a postponed start of migrations of active SMETS1 devices.

Securing Value for Money

The main focus of DCC negotiations to secure value for money for this change was to breakdown the DCC requirements to make this more of a transaction type of service for the execution part of the MDUST service. The DCC stipulated the level of demand that was to be expected from the Test Participants and how this would translate into test incidents that the parties, in this context CGI, would need to support. Whilst the negotiations were ongoing the DCC was able to refine the level of demand further and received four FIA responses in total. The final response back provided the DCC with a base MDUST service to minimise the charges, as the take-up and usage of the MDUST service from Test Participants was expected to be varied month on month.

DCC issued out a number of Urgent Work Orders between September and November 2019 to allow the negotiations to continue whilst further in roads were made in the charges being proposed back by CGI, without introducing any additional risks to the DCC.

The table below sets out how the pricing, broken down by the activities and in scope cohorts reduced over the four iterations of CGI's FIAs:

Detail	FIA v1.0	FIA v2.0	FIA v3.0	FIA v4.0
DSP Team MDUST Setup Phase (£)				
Labour Charge	REDACTED	REDACTED	REDACTED	REDACTED
Expenses	REDACTED	REDACTED	REDACTED	REDACTED
DSP Team MDUST Service Execution				
Labour Charge[5]	REDACTED	REDACTED	REDACTED	REDACTED
Expenses	REDACTED	REDACTED	REDACTED	REDACTED
Total Setup Charges	REDACTED	REDACTED	REDACTED	REDACTED
Price Diff. (Compared to previous FIA)		REDACTED	REDACTED	REDACTED
Price Diff. (% Reduction to previous FIA)		**33.7%**	**23.6%**	**7.3%**

Table 19: Price Breakdown CR1195

Initial IA price (£)	Final IA Price (£)[6]	Difference (%)
	REDACTED[7]	(52.6)

[5] The changes in labour charges were due to a reduction in number of days i.e. 3,195.5 in v1 to 1408 in v4.
[6] The final agreed price included a Working Capital charge of REDACTED, which had not been calculated for the earlier versions of the FIAs (FIA v1.0 through to v3.0)
[7] The value of this CR in the supplementary schedules is lower than this value. This is due to this CR including an element of 'time and materials', and therefore actual spend was lower than expected.

Table 20: Initial vs Final Price CR1195

1.5.4 Initial Operating Capability (IOC)

CGI – CR1181 (IOC Operational Service)

Drivers and Scope

CR1181 follows on from a series of CRs/PRs that were previously raised to provide the initial design, build and test activities and the associated commercial cover to reach IOC go-live as set out in the table below:

CR/PR	Title
PR052	SMETS1 IOC Initial Implementation
PR065	SMETS1 DSP System Integration Test for Initial Operating Capability (IOC).
PR1017	Changes to the Licence Condition 13 Plan
PR1004	SMETS1 DSP User Test Services (UTS) and Transition to Operate (TTO) for Initial Operating Capability (IOC)
CR1144	Revised IOC Go-Live Date and Updated Milestones
PR1001	SMETS1 DSP Migration Functionality
CR334	SMETS1 – Identify suitable supplier for meter point.
CR1048	SMETS1 Migration – uplift to TMAD v0.2
PR1093	Remedy operationally ready to support SMETS1 IOC
PR1106	Revised IOC Go-Live Date and Updated Milestones for CGI DSP (DSP as a service provider)

Table 21: Getting to IOC Go-Live - Supporting CRs / PRs

There was however no commercial cover for the provision of a SMETS1 BAU service post IOC go-live, nor for the support of the migration process. CR1181 provides cover for the enduring SMETS1 IOC service from the first full month of SMETS1 IOC live running. It also provides cover for the resources anticipated to be required to support the IOC migration process for a period of 15 months; as well as to deliver enhanced service support, similar to the extended service support plus (ESS+) for SMETS2 – which entailed the previous of a specialist resource to provide specification, design and overall SME input into SMETS1 Incident-specific Decision Trees and SMETS1 Migration issues.

At a high level, the scope of CR1181 includes:

- Additional infrastructure that needs to be built within the production and non-production environments with a full operational service being in place from go-live.
- Safety and security assurance to provide enduring support for the SMETS1 functionality.
- Support for the IOC migration process Support for an additional period of 15 months to provide continuity when resolving issues and the ability to respond to migration issues quickly.
- DSP live service support to cover specific SMETS1 processing and investigate SMETS1 related incidents.
- Part-time additional resource to provide enhanced service support for SMETS1-related migration issues during the migration process as well as SMETS1-related incident triage to investigate migration issues.

The failure to progress CR1181 would have prevented the go-live of IOC as there would not have been any commercial cover for the DSP to support the migration process as well as the SMETS1 service post go-live.

Securing Value for Money

In order to support the extensive negotiations DCC carried out on this CR, a total of 5 UWOs and 1 LOI were issued, without introducing any delivery risk to the IOC Programme or the final negotiated position.

DCC's efforts focussed on ensuring the scope of both the Core and Migration Service were suitable to the outcomes expected. Considerable efforts by both DCC and CGI were expended to ensure the assets purchased under the initial CRs and PRs to get the IOC Service live were accurately captured in the updated DSP Assets Register. These discussions entailed 5 versions of the register being produced before DCC received an acceptable response, which then allowed the CR to be finally contracted through the CAN for this CR.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

	v1.0	V2.0	v3.0	V4.0	V5.0
Detail	**Total Price (£)**				
IOC Core - Applications Management	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
IOC Core - Infrastructure and Service Management	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Total Core Service Charge	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
IOC Migration Service	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
IOC Enhanced Service Support - 6 months from April 2020	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Total Additional IOC Services	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Total IOC Service Charges	REDACTED	REDACTED	REDACTED	REDACTED	REDACTED

Table 22: Price Breakdown CR1181

It should be further noted that Total Prices in the above table excludes operational efficiencies (which will reduce the price after 12 months of service).

The above iterations of the FIA were updated over the course of 9 months – v1.0 was initially received in June 2019 and the final v5.0 was submitted in May 2020. The final version was delayed until the Asset Register was accepted by DCC.

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	(19.2)

Table 23: Initial vs Final Price CR1181

CGI – CR1382 – CGI IE Enduring Support

Drivers and Scope

Under CAN001[8], CGI was contracted to provide the following migration services for a period of 12 months up to the end of July 2020:

[8] Re-baselining of the Enduring Agreement for the provisions of the services in respect of the SMETS1 programme.

- Enhanced Migration Support Service
- Requesting Party Service; and
- Extended AWS Environments

Under PR1122, CGI was contracted to provide an SMSO Support Service for a period of 12 months up to the end of July 2020.

In July 2020, only a small proportion of the IOC meter cohort had been migrated; no MOC Secure meters had been migrated at all. This was largely due to the technical constraints associated to the migration process, including unforeseen device specific issues that were identified once the devices had already past all of the required eligibility tests. CR1382 sought to extend these four services and their respective charges for a further 7 months, up to and including the end of February 2021, with the option to extend all or any of these services beyond that on a month-by-month basis, if required by DCC. During the final stages of agreeing the CAN for CR1382, DCC split out the 4 Services, leaving the 3 that were covered by CAN01, the SMSO Support Service was handled as an update to the previously agreed PR1122.

Failure to progress and implement CR1382 would have meant that there would be no commercial cover for CGI to continue to provide the migration services that are essential for the migration of the IOC meter cohort.

Securing Value for Money

As set out above, the DCC had contracted the same 4 Services under various CRs and PRs. The table below shows the monthly charges for these Services as well as what the equivalent total charge that would have been applicable if these Services were extended for a further 7 months (the period in CR1382) were as follows:

Detail	Monthly charge (£)	Charge for 7 months (£)
SMSO Service (under PR1122)	REDACTED	REDACTED
RPS (under CR1181)	REDACTED	REDACTED
S1SP migration support	REDACTED	REDACTED
Test Environments (under CR1181)	REDACTED	REDACTED
Total	REDACTED	REDACTED

Table 24: Previously Prevailing Service Charges

The DCC issued out 3 Urgent Work Orders for CR1382 to allow negotiations to continue, which were done against a certainty that DCC needed these Services to continue to support IOC migration efforts which represented no additional risk.

The initial FIA response back from CGI set out a price of REDACTED which was contained in v1.0, the final agreed price was REDACTED as set out in v1.1 of their FIA, reflecting 1 further iteration of their FIA was necessary before being able to take this to CAN.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	Total Price (£)
SMSO Service (Aug 20-Feb 21)	REDACTED
RSP (Aug 20-Feb 21)	REDACTED
S1SP Migration Support (Aug 20-Feb 21)	REDACTED
Test Environments (Aug 20-Feb 21)	REDACTED
Total (fixed price)	REDACTED

Deduction for 20% retention	0
Total less Retention (fixed price)	REDACTED
Materials	0
Total Service Charges (Fixed Price)	REDACTED

Table 25: Price Breakdown CR1382

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	**(0.7)**

Table 26: Initial vs Final Price CR1382

Through negotiations to drive down the price of the Services, whilst preserving the scope, the final agreed price under CR1382 (and PR1122) therefore represents a saving of REDACTED or 6% against the equivalent charges that were in place with CGI, prior to this change.

Additionally, CGI agreed that these charges for the 4 Services would not be subject to an uplift for indexation, which they are entitled to, which provided a further REDACTED saving, as the applicable indexation rate was 2.6%.

In Summary, DCC were able to achieve overall savings of 8.5% as set out below:

Activity	Price (£)	Savings (£)
Baseline (equivalent Price)	REDACTED	N/A
Final FIA Price	REDACTED	REDACTED
Forfeiting Indexation	N/A	REDACTED
Total Price / Savings		REDACTED **(8.5%)**

PR1134 – CGI (SMETS1 DMCT & PPCT Execution (3 tranches))

Drivers and Scope

The IOC SIT scope did not originally cover 100% of the SMETS1 devices deployed in the field at the time. BEIS consequently directed DCC to test the remaining Device Model Combinations (DMC) - which comprise an ESME, GSME, CH and IHD - for each release, via a new DCC-led activity called Device Model Combination Testing (DMCT). DMCT is a regulatory obligation that applies to DMCs that were either not selected for SMETS1 SIT or did not exit SIT successfully. Pending Product Combination Testing (PPCT) allows for testing on DMCs that exist on the EPCL and are already migrated to the DCC Total System but require an update, for example, a Firmware update.

DMCs will be processed in tranches, in overlapping cycles. CGI S1SP and SMSO are only involved in the setup of devices and provision of support for test execution. Support for test execution will include resources to support the triage of issues impacting test execution that are within the scope of IE S1SP or IE SMSO functionality. PR1134 provides commercial cover for DMCT and PPCT for the following three tranches:

Tranche 1 (IOC)	Tranche 2 (IOC)	Tranche 3 (IOC)

1 x Tranche Setup	1 x Tranche Setup	1 x Tranche Setup
6 x Dual Fuel	6 x Dual Fuel	25 x IHD/PPMID
6 x IHD/PPMID	6 x IHD/PPMID	

Table 27: Composition of Tranches 1 to 3

Tranche 1 also included the work necessary to set up the overall DMCT Service.

Without this change, the DCC would have severely restricted the volume of IOC meters that would have been eligible for migration.

Securing Value for Money

The main focus of DCC negotiations to secure value for money for this change was to breakdown the DCC requirements to make this more of a transaction type of service for the execution part of the DMCT service. The DCC worked with CGI to develop a menu-based pricing, which allowed a time and material charge to be calculated based on the number and type of DMCs that would be tested in each tranche. This approach allowed the DCC to package up the work in tranches, at a time when the content and volumes within each tranche were extremely fluid, due to a number of factors, including the availability of test meters.

Whilst the negotiations were ongoing the DCC was able to refine the level of demand further and received three SOW responses in total.

DCC issued out a number of Letters of Instruction (LOI)[9] between October 2019 and January 2020 to allow the negotiations to continue whilst further in roads were made in the charges and composition of the tranches, without introducing any additional risks to the DCC.

The Table below sets out how the charges and composition of the tranches evolved over the course of the 3 SOWs:

Detail	v1.0 Charges (£)	v2.0 Charges (£)	v3.0 (£)
Initial Setup / Management	REDACTED	REDACTED	REDACTED
Tranche 1	REDACTED	REDACTED	REDACTED
Tranche 2	REDACTED	REDACTED	REDACTED
Tranche 3		REDACTED	REDACTED
Tranche 4		REDACTED	
Tranche 5		REDACTED	
Draw Down Fund for PPCT		REDACTED	
Total Setup Charges	REDACTED	REDACTED	REDACTED
Comparable Charges		REDACTED	REDACTED
Tranche Composition			
SOW Detail	**v1.0 Vol**	**v2.0 Vol**	**v3.0 Vol**
Initial Setup / Management	1	1	1
Tranche 1	4 DF / IHD	6 DF / IHD	6 DF / IHD
Tranche 2	2 DF / IHD	6 DF / IHD	6 DF / IHD

[9] The use of LOIs was stopped by DCC in Jan/Feb 2020.

Tranche 3		25 PPMID / IHD	25 PPMID / IHD
Tranche 4		6 DF / IHD	
Tranche 5		18 PPMID / IHD	

Table: 28: Charges and Composition of Tranches

SOW Submission dates were as follows:

- Version 1 of SOW was submitted on 04/10/2019
- Version 2 of SOW was submitted on 23/10/2019; and
- Version 3 of SOW was submitted on 02/12/2019.

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED Comparable price REDACTED	REDACTED [10]	**(13.3)**

Table 29: Initial vs Final Price PR1134

Following the agreement with CGI on version 3 of the SOW, the DCC sought to issue out SOWA and PO for each tranche, which resulted in the final composition of each being as depicted in the table below.

Tranche 1 (IOC)	Tranche 2 (IOC)	Tranche 3 (IOC)
1 x Tranche Setup	1 x Tranche Setup	1 x Tranche Setup
3 x Dual Fuel	3 x Dual Fuel	5 x Dual Fuel
3 x IHD/PPMID	3 x IHD/PPMID	

Table 30: Final Composition of Tranches 1 to 3

1.5.5 Middle Operating Capability (MOC)

CGI – CR1196 (MOC-Secure SIT execution)

Drivers and Scope

MOC Secure has one Device Model Combination (DMC) in scope of both SIT and Migration Solution Testing (MST). In contrast, IOC has been delivered against two DMCs; MOC-MDS and MOC-Secure are both considered as a single DMC each. MOC-Secure introduces SIT testing against Business Scenarios, which is a change to the testing approach when compared with IOC and MOC-MDS.

The initial scoping of the Secure SIT testing phase was requested under PR1046, which provided a resource profile for the work between February 2019 until the end of April 2019. PR1158 sought cover for MOC-Secure SIT preparation from October 2019 until the end of December 2019. CR1196 covers the completion of SIT test execution for MOC-Secure, over a period defined within DCC's LC13 plan. This tranche of work is centred on Migration Solution Testing (MST), Solution Testing (ST) and Regression Testing, and follows on from the SIT execution activities from the IOC and MOC-MDS phases.

MOC-Secure test execution was originally due to commence in May 2019 but was rescheduled due to extended IOC SIT testing and the delay in the availability of the Secure meter cohort. Under CR1196, test

[10] The value for this PR in the supplementary schedules is slightly lower than this value. This is due to PRs being billed based on a 'time and materials' basis, and therefore actual spend was lower than expected.

execution was planned to commence from the beginning of January 2020 and run through to June 2020. At a high level, the scope of CR1196 includes:

- Readiness of the Devices will be required to support SIT execution
- Device Issue Resolution Forum (DIRF) will be attended to ensure test scripts continue to operate within the documented constraint of a device
- Governance support activities associated to SIT entry
- Deriving the SIT Test Scope in line with the relevant SMETS1 test approach documents
- SIT Test Volumes and Test throughputs
- Requirement to carry out MOC-Secure SIT execution activities during the period of test execution
- Successful completion of the agreed solution tests, End of Cycle (EOC) regression tests and achieving the defect mask as detailed in the regulatory testing approach documents for SMETS1.

Not authorising this change would have meant that there would have been no commercial cover for CGI to carry out the MOC SIT phase, subsequently preventing the Secure meter cohort from going live as per directed in the LC13 plan.

Securing Value for Money

The DCC issued out 6 Urgent Work Orders for CR1196 covering the period January 2020 to end of May 2020, to allow negotiations to continue, which represented no additional risk. These UWOs covered both the work to finalise the FIA, following DCC Feedback as well as the time to finalise the CAN.

The initial FIA response back from CGI set out a price of REDACTED which was contained in v1.0, the final agreed price was REDACTED as set out in v2.0 of their FIA (this included the work up to SIT Exit and the SIT Work-off activities). During this period DCC carried out a number of feedback sessions to refine and agree the scope, which included the agreement to move the activities to support SIT work-off from a fixed price to a time and materials basis. During this period the support for the EIT environment was extended to the end of May, when it was originally was only planned to be supported by this change until the end of March 2020.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	Comparable FIA v1.0 Total Price (£)	FIA v2.0 Total Price[11] (£)	Delta (v2.0 to v1.0) (£)
Setup Labour Charge	REDACTED	REDACTED	REDACTED
HP ALM Licences	REDACTED	REDACTED	REDACTED
DSP Team Setup Expenses	REDACTED	REDACTED	REDACTED
Proportion of Early Integration Test (EIT) environment	REDACTED	REDACTED	REDACTED
Working Capital Charge	REDACTED	REDACTED	REDACTED
Total Setup Charges	REDACTED	REDACTED	REDACTED
Total Charges (excluding Finance)	REDACTED	REDACTED	REDACTED
Total charges (including finance costs)		REDACTED	

[11] Price includes both the Fixed Price (SIT Exit) and the T&M (SIT Work-Off)

Table 31: Price Breakdown CR1196

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	**(2.1)**

The final charge for CR1196 including the actual T&M charges for the work-off saved a further REDACTED which translated into a final price reduction of REDACTED or 3.2% as depicted in the updated pricing table below:

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	**(3.2)**

Table 32: Initial vs Final Price CR1196

PR1231 – CGI (SIT-B dates extension & SIT-A regression for MOC Secure)

Drivers and Scope

CR1196 provided commercial cover for MOC Secure MST, DMRT and SIT including End of Cycle 1 (EOC1), EOC2 and post TAB work-off activity. Since the submission of CR1196, both BEIS and DCC have requested that two additional EOC cycles i.e. EOC3 and EOC4 are included to the process, together with further testing in the SIT-A environment, which covers additional MOC Functional Testing and System Regression against a baseline that also includes SMETS1 Core Uplift 1.1. The purpose of executing two additional EOC cycles on SIT-B is to facilitate the achievement of SIT exit for MOC, which was not achieved previously because of the high level of defects found in EOC1 and EOC2.

PR1231 provides cover for MOC-Secure EOC3 and EOC4 testing in SIT-B as well as associated support for additional testing including:

- SMETS1 System Regression, including up to IOC, MDS and SMETS1 Core 1.1. uplift in SIT-A
- SMETS2 System Regression including up to June 2020 in SIT-A
- Additional solution test in SIT-A:
    - MOC Auxiliary Load
    - CR1251 Events
    - SMETS1 to SMETS2 Device Exchange.

The failure to pursue PR1231, and the provision of additional testing environment would have led to additional delay to the successful completion of SIT exit for the MOC Secure meter cohort.

Securing Value for Money

The initial price for PR1231 (SIT-B dates extension & SIT-A regression for MOC Secure) was calculated to be REDACTED by CGI DSP, covering a 3-month period between May 2020 and July 2020. This SOW V1.0 included 1,879 days of labour at a cost of REDACTED, 82 ALM licenses over the same period at a cost of REDACTED and expenses of REDACTED. A 1% discount to labour charges was automatically applied as the project had a length of between 3 and 6 months.

The expenses charges detailed above included an agreed discount of REDACTED per labour day to the end of June 2020 as a result of the travel restriction imposed by the UK Government starting in March 2020. This delivered a saving of REDACTED (-55.7%) against the standard expenses charge rate.

CGI DSP provided the SOW V2.0 which had a total cost of REDACTED, delivering a 5.8% saving against the SOW V1.0. The labour reduced by 105 days (-5.6%) to a total of 1,774 days at a total cost of REDACTED. This delivered a saving of REDACTED (-5.3%) and the reduction was across the majority of role types. However, the most significant saving came from the PMO Analyst role where the volume of labour required reduced by 31.5%, accounting for more than a third of the total '£' value labour saving. The volume of ALM licenses also reduced by 3 (-3.7%) to 79 licences over the 3-month period costing REDACTED (-3.2%) and the expenses charges reduced by REDACTED (-29.0%) to REDACTED.

The expenses reduction was extended for the whole duration of this PR1231 impacting all 1,774 labour days. This REDACTED saving delivered an overall saving of REDACTED against the standard expenses charge rate (-66.7%).

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	V1.0 Price (£)	Total Price v2.0 (£)	v1.0 to v2.0 (£)
Setup Labour Charges for MOC SIT and supporting teams (See PR1231 Labour Breakdown)	REDACTED	REDACTED	REDACTED
HP ALM Licences	REDACTED	REDACTED	REDACTED
Core DSP Team Setup Expenses Based on agreed daily charge rates: REDACTED - Discounted to end of July 2020	REDACTED	REDACTED	REDACTED
Schedule 7.1 Discount (1% labour discount for projects of between 3-6 months' duration)	REDACTED	REDACTED	REDACTED
Working Capital Charge		TBC	
Transfer to CR1196 Work Off (as per Actual Tracker issued on 30/06/20)		REDACTED	
Total Setup Charges	REDACTED	REDACTED	REDACTED
Total Charges (DCC View)		REDACTED	

Table 33: Price Breakdown CR1134

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED [12]	(5.77)

[12] The value for this PR in the supplementary schedules is slightly lower than this value. This is due to PRs being billed based on a 'time and materials' basis, and therefore actual spend was lower than expected.

Table 34: Initial vs Final Price PR1231

SECURE – CR1214 (PAN card disablement feature support in S1SP)

Drivers and Scope

Traditionally, third party payment providers or Retail Network Service Providers (RNSP) have played a central role in providing a physical network where customers may purchase credit for their meters (e.g. Post Office, Payzone, and Paypoint). As part of the SMETS1 solution and migration however, there is a requirement for prepayment top-ups and the associated processing of Unique Transformation Reference Numbers (UTRN) to retain the RNSP-UTRN interface for a limited period to time, in order to guarantee a consumer's capability to generate UTRN top-ups.

Under the pre-migrated SMSO agreements, a device is out of scope of the contract as soon as that device is migrated. Under CR1214, Secure has requested for the RNSP channels to be able to continue to send messages and maintain and operate that channel for an additional 336 (or x) hours after the device has been migrated.

Failure to progress and implement this change could potentially impact consumers' capability to generate top-ups, as failure to deregister a payment card with the relevant SMSO would assume the RNSP is still used to generate a top-up.

Securing Value for Money

The initial PA submitted by Secure in January 2020 was rejected by DCC mainly because of disagreement around costs. Secure re-submitted the PA which was subsequently accepted by DCC. Over the course of July 2020, two iterations of the IA were made. The first IA submitted by Secure was rejected on the basis of incorrect costs. DCC did not accept Secure's initial cost proposal of REDACTED and challenged the cost on a technical basis by benchmarking it against similar work done elsewhere at a significantly reduced cost.

Following many iterations with regard to the cost challenge (version 8 was the final agreed version of the Impact Assessment), Secure revised the cost down to REDACTED , and as there was no change in the technical solution (and no change to the effort break down for the requirement), this was deemed to be reasonable for an established product, and a 26.4% reduction in the cost was acceptable.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

	TOTAL (£)
Implementation	REDACTED
Project Support (per month for duration of migration)	REDACTED

A breakdown of the implementation costs is provided in the tables below.

Detail – Implementation Costs	Total (£)
Project Definition, resourcing, strategic review	REDACTED
Requirement Analysis	REDACTED
Requirement Analysis Review	REDACTED
Service Design	REDACTED
Service Design Review	REDACTED
Design	REDACTED
Design Review	REDACTED
Development	REDACTED
Development Review	REDACTED
Test Case Definition	REDACTED

Test Execution	REDACTED
Final Test Review	REDACTED
Governance and Release	REDACTED
	REDACTED

Table 35: Price Breakdown CR1214

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	**(26.4)**

Table 36: Initial vs Final Price CR1214

1.5.6 Final Operating Capability (FOC)

CGI – CR1123 (SMETS1 - FOC SIT Execution)

Drivers and Scope

FOC is the Final Operating Capability and is significantly more complex compared then other SMETS1 capability releases, since FOC has five Device Model Combinations (DMC) in scope of SIT and an additional DMC in Migration Solution Testing (MST). In contrast, IOC has been delivered against just two DMCs, and MOC MDS and MOC Secure are a single DMC each. In addition, FOC introduces SIT testing against Business Scenarios, which is a change to the Testing Approach when compared with IOC and MOC-MDS.

Initial scoping of the FOC Systems Integration Test (SIT) phase was covered under PR1054, which provided commercial cover until the end of July 2019. A second PR i.e. PR1147 was raised to facilitate SIT preparation for FOC, through to their completion at the end of December 2019. CR1123 covers the SIT test execution for FOC. At the time of raising CR1123, FOC SIT was initially scheduled to start in September 2019, but subsequently moved to January 2020 due to a re-plan of the SMETS1 delivery plan[13].

More generally, the scope of SIT is defined as the requirements needing to be aligned with the regulatory arrangements set out in the relevant SEC obligations specific to SMETS1. At a high level, CR1123 covers the following activities:

- Migration onto DCC systems as part of the testing the Trilliant solution capability, specifically for:
  - Solution Test FOC (functional)
  - Continual Integration Regression (CIR)
  - Solution Test FOC (migration)
  - End of Cycle (EOC)
- FOC SIT to be executed across the S1SP PPCs as defined in SMETS1 Pending Product Combination Lists for British Gas, Npower and Trilliant.
- Support the associated processes covering but not limited to Triage, Defect Management and the Device Issues Resolution Forum (DIRF).
- Incorporate into FOC SIT planning learnings from IOC SIT and testing executed for SMETS2.

Not authorising this change would have led to no commercial cover for CGI to carry out the SIT phase for FOC, preventing the timely go-live of the Trilliant meter cohort as required in the LC13 plan.

[13] At the time of submission of FIA version 1.0, FOC is scheduled for go-live on 31 July 2020

Securing Value for Money

The DCC worked with CGI extensively on this CR as the scope of SIT was revised and adapted, reflecting the firming up the assumptions underpinning this stage of testing, which as noted above was material more complex than any of the earlier SMETS1 SIT stages. During the course of these review sessions which took place over the period from the end of November 2019 and up to end of March 2020 – the duration of SIT extended due to the level of defects which were being detected. Due to the unpredictable nature of FOC SIT, DCC took the decision to foreshorten the fixed price period of SIT controlled by this CR to be the from October 2019 until the end of April 2020. Thereafter, it was more beneficial, due to the transparency of bookings and the fluid nature of testing to carry on the SIT support, including the eventual work off activities under PRs (PR1230 and then PR1232).

Whilst carrying out these review activities the DCC were able to receive three versions of the FIA – as well as get full visibility of the work actually carried out by CGI, based on actual bookings, as depicted by the table below:

Detail	FIA v1.0 Total Actual Price to end of April 2020 (£)	FIA v2.0 Total Actual Price to end of April 2020 (£)	FIA v3.0 Total Actual Price to end of April 2020 (£)
Setup Labour Charge to SIT Exit	REDACTED	REDACTED	REDACTED
HP ALM Licences	REDACTED	REDACTED	REDACTED
DSP Team Setup Expenses	REDACTED	REDACTED	REDACTED
Proportion of Early Integration Test (EIT) environment from January to end of April 2020 (extended from March 2020)	REDACTED	REDACTED	REDACTED
Working Capital Charge	REDACTED	REDACTED	REDACTED
Total Setup Charges to end Apr 20	REDACTED	REDACTED	REDACTED
Total Charges to Apr 20 (excluding Finance)	REDACTED	REDACTED	REDACTED

Table 37: FIA Price Evolution CR1123

It should be noted that version 1.0 of the FIA did not have the EIT being provisioned beyond the end of March 2020. During the period of review DCC issued out 1 LOI and 3 UWOs, which allowed the work to continue, whilst optimising DCC's ability to negotiate on the scope and prices, whilst limiting the delivery risks to the FOC Programme.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	FIA v3.0 Total Actual Price to end of April 2020 (£)
Setup Labour Charge to SIT Exit	REDACTED
HP ALM Licences	REDACTED
DSP Team Setup Expenses	REDACTED
Proportion of Early Integration Test (EIT) environment from January to end of April 2020 (extended from March 2020)	REDACTED
Working Capital Charge	REDACTED
Total Setup Charges	REDACTED
Total Charges (excluding Finance)	REDACTED

Table 38: Price Breakdown CR1123

As per the Table 38 above, the comparable FIA price for work carried out between October 2019 until the end of April 2020 is as set out in the table below:

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED [14]	**(22.72)**

Table 39: Initial vs Final Price CR1123

CGI – PR1230 (FOC-SIT Execution Extension 1)

Drivers and Scope

FOC is considered significantly more complex than the other SMETS1 capability releases due to the number (five) of Device Model Combinations (DMC) that are in scope of this release. Additionally, FOC has introduced SIT testing against Business Scenarios, which is a change to the testing approach used for IOC and MOC-MDS.

PR1230 provides cover for FOC testing and associated support, for remaining tests in FOC Stages 1, 2 and 3, including:

- Dormant Meter Readiness Testing (DMRT), which includes confirmation of firmware upgrades from the SMSO as well as device-historic information including consumption, alerts and tariff information.
- Migration Solution Test (MST) for each of the DMCs in the baselined FOC DMCL.
- Solution Test (ST) will be executed on six devices per DMC.
- Tests will be run in sequences dictated by the FOC business scenarios.
- Contingency sets on Device Set 2 and Device Set 6 will be available to start Functional Regression if required.
- Daily Reporting of FOC SIT progress.

As with CR1123 above, not authorising this change would have led to no commercial cover for CGI to carry out the SIT phase for FOC, preventing hereby the timely go-live of the Trilliant meter cohort as required in the LC13 plan.

Securing Value for Money

This PR was a follow on to CR1123 and carried forward the SIT work on a time and materials basis. The focus of DCC during the period of negotiations was focussed on refining and verifying the scope of testing activities, in order that they were presented in a way which allowed greater continuity between this change and CR1123.

During the negotiations for this PR, the DCC issued out three UWOs which allowed period which allowed the work to continue, whilst optimising DCC's ability to negotiate on the scope and prices, whilst limiting the delivery risks to the FOC Programme.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	Total Price (£)
Setup Labour Charges for FOC SIT and supporting teams (See PR1230 Labour Breakdown)	REDACTED

[14] This is the price excluding Working Capital, as this element of the charges was not present in versions 1.0 and 2.0 of the FIA / Price Breakdowns, and so for comparison purposes only has been excluded.

HP ALM Licences	REDACTED
Core DSP Team Setup Expenses	REDACTED
Apportioned EIT Environment costs May 20 - July 20	REDACTED
Schedule 7.1 Discount (2% labour discount for projects > 6 months' duration taking into account PR1232 as an assumed continuation)	REDACTED
Working Capital Charge	REDACTED
Total Setup Charges	REDACTED
Total Estimated Charges (excluding Finance)	REDACTED

Table 40: Price Breakdown PR1230

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED [15]	REDACTED [16]	(10.3)

Table 41: Initial vs Final Price PR1230

CGI – PR1232 (FOC-SIT Execution Extension 2)

Drivers and Scope

FOC is considered significantly more complex than the other SMETS1 capability releases due to the number (five) of Device Model Combinations (DMC) that are in scope of this release. Additionally, FOC has introduced SIT testing against Business Scenarios, which is a change to the testing approach used for IOC and MOC-MDS. Following the challenges experienced with the FOC migration solution, DCC had also investigated several different migration solutions for FOC. DCC approached DSP in mid-June 2020, requesting SIT impacts and volumetric for several possible migration solutions. By early July 2020, DCC had selected the migration solution for FOC and had also commenced discussions regarding a 'Minimal Viable Product' (MVP) for FOC, which could potentially be deployed into Production before the end of 2020. The agreed MVP for testing in FOC SIT was defined as including:

- Only two DMCs, namely REDACTED and REDACTED
- Option 0 SIM migration as the selected migration solution
- Communications Hubs Functions i.e. SEAP2000 (REDACTED) and SEAP2001 (REDACTED)
- Migrations for Active and Dormant sets only; and
- Migrations for devices in Credit mode only.

[15] The number of labour days was reduced from 2,649 to 2,500.
[16] The value for this PR in the supplementary schedules is slightly lower than this value. This is due to PRs being billed based on a 'time and materials' basis, and therefore actual spend was lower than expected.

PR1232 covers the second extension of FOC SIT (following on from PR1230) and seeks to enable the programme to deploy some FOC devices into Production before the end of 2020. More specifically, the scope of PR1232 can be summarised as:

- New Migration Solution Testing (MST) and Dormant Meter Readiness Testing (DMRT)
- Completion of SIT testing of the Business Scenarios for both DMCs
- System Regression for SMETS1 and SMETS2
- Daily Reporting of FOC MVP SIT testing; and
- Test Completion Report(s) for FOC MVP.

As with CR1123 and PR1230 above, not authorising this change would have led to no commercial cover for CGI to carry out the SIT phase for FOC, preventing the timely go-live of the Trilliant meter cohort as required in the LC13 plan.

Securing Value for Money

As noted above, The DCC worked with CGI extensively on this PR as the scope of SIT work off and End of Cycle (EOC) was revised and adapted, reflecting the firming up of assumptions underpinning this stage of testing, which as noted above was materially more complex than any of the earlier SMETS1 SIT stages.

Initially, the first version of the SOW was to only to provide SIT work off / EOC support up to 25th September, but by early September both parties agreed that this would be unlikely and the scope of work was to be extended until the end of October. EIT hosting and support was required until the end of November. It is for this reason that versions 2 and 3 have been used for the basis of comparisons and demonstrating value for money.

During the negotiations for this PR, the DCC issued out two UWOs which allowed period which allowed the work to continue, whilst optimising DCC's ability to negotiate on the scope and prices, whilst limiting the delivery risks to the FOC Programme.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	V1.0 Price (£)	Total Price (£)	V1.0 to Total (£)
Setup Labour Charges for FOC SIT and supporting teams (See PR1232 Labour Breakdown)	REDACTED	REDACTED	REDACTED
ALM Licences	REDACTED	REDACTED	REDACTED
DSP Team expenses - discounted to end of December 2020 for travel restrictions	REDACTED	REDACTED	REDACTED
Apportioned EIT Environment costs August 2020 - November 2020	REDACTED	REDACTED	REDACTED
Schedule 7.1 Discount (2% labour discount for projects > 6 months' duration taking into account PR1232 as a continuation of PR1230)	REDACTED	REDACTED	REDACTED
Working Capital Charge	TBC	TBC	TBC
Total Setup Charges	REDACTED	REDACTED	REDACTED
Total Estimated Charges (excluding Finance)		REDACTED	

Table 42: Price Breakdown PR1232

Initial IA price (£)	Final IA Price (£)	Difference (%)

REDACTED	REDACTED [17]	(6.2)

Table 43: Initial vs Final Price PR1232

DXC – PR1225 (Enduring PKI Solution)

Drivers and Scope

The FOC cohort requires a new enduring Private Key Infrastructure (PKI) solution which will act as an anchor trust for all systems within the FOC S1SP, providing certificate management services to all the external device sets which need secure communications. Within this solution DCC requires a Root Certificate Authority (CA) service to ensure that certificates are valid and subsequently confirm they have not been revoked.

The Trilliant SMSO currently utilises a Head End System (HES) PKI to generate the certificates needed to securely communicate with the Comms Hub. DCC have chosen Trilliant as the software supplier for the PKI solution. In previous years we explained that DXC takes on the role of the Application, Network, and Security Operations (ANSO) provider for the FOC cohort, taking care of the hosting, associated infrastructure and service management wrapper for Trilliant's software application. For the hosting element of the solution under PR1225, DCC require the:

- Issuing CA component of the solution to be hosted in DXC datacentres; and
- Root CA (incl. Root CRL) component of the solution hosted in the Capgemini datacentres.

PR1225 seeks to deliver the implementation of the HES (ANSO) application itself as well as the uplift to the design, required to support the changes in the PKI architecture following the introduction of an Offline Root CA which will be hosted by Capgemini. The environmental build and integration work for each environment will comprise:

- Preparation of the DXC High Level Design (HLD) and Low-Level Design (LLD) for the FOC HES PKI.
- Installation of the ANSO application
- Installation of the new PKI solution
- Integration activities and perpetration for TRT
- Planning of DXC support for post PKI implementation TRTs.

Failure to implement this CR would lead to non-compliance and refusal by BEIS to allow SMETS 1 programme (FOC) to be implemented.

Securing Value for Money

DCC worked closely with DXC over a number of workshops to further define the requirements after receiving an initial SoW in early June. This resulted in 13 iterations of the SOW before it being finalised and ultimately agreeing the scope at the end of June 2021.

As the costs represented a capped time and materials price structure, DCC continued to challenge costs on a monthly basis to ensure each phase of the project achieved value for money and subsequent savings against the profiled spend.

A breakdown of the costs and summary of the price reductions and savings is provided in the tables below.

#	Project Element / Phase & Procurement Items	Subtotal (£)
1	Requirement Workshop, High Level Solution & Re-planning (16/03/20 to 23/06/20)	REDACTED

[17] The value for this PR in the supplementary schedules is slightly higher than this value. This is due to PRs being billed based on a 'time and materials' basis, and therefore actual spend was higher than expected.

2	Governance	REDACTED
	Project Start-up & HLD	REDACTED
3	DCC Certificate Policy & Ops Model	REDACTED
4	PROD - FOC HES & PKI Implementation	REDACTED
5	SIT-A - FOC HES & PKI Implementation	REDACTED
6	UIT-A - FOC HES & PKI Implementation	REDACTED
7	UITB - FOC HES & PKI Implementation	REDACTED
8	HSM License Uplift for SIT	REDACTED
Total Project Charges		REDACTED

Table 44: Price Breakdown PR1225

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	(34)

Table 45: Initial vs Final Price PR1225

CGI – PR1109 (Pre-UTS Preparation & Support for SMETS-1 FOC)

Drivers and Scope

PR1109 provides cover for the DSP to support SMETS1 FOC Pre-User Testing Service (UTS). The objective of the Pre-UTS strategy for FOC is to ensure that all required preparations, including environment preparation and technical readiness testing, have been fully implemented ahead of each UIT environment (UIT-A and UIT-B) being made available to customers. This allows customers to start and complete the testing that is required under the LC13 plan i.e. UTS testing including (Migration) Device and User System Testing (MDUST/DUST).

At a high level, the scope of PR1109 can be summarised as fully preparing and verifying one UIT environment followed by a subset of the same tests to give confidence in the second environment. In the first UIT environment (UIT-B), preparation comprises:

- Technical Readiness Testing (TRT) to verify the connectivity of technical interfaces between each component is configured correctly.
- Environment Acceptance Testing (EAT) to test migration of a single SMETS1 FOC from each of the three FOC SMSOs to DCC, followed by the execution of a small subset of SRs to provide confidence that each migrated device set is functioning successfully post the migration. This proves the UIT-B environment and end-to-end component interfaces at an application level.
- Pre-UTS and Pre-MDUST exercises a small number of core success path migration business scenarios across the three FOC SMSOs covering each of the five FOC DMCs.

- Pre-UTS will test the migration methods to provide meters for any UTS services such as ET and DUST. This may take place as part of the Pre-MDUST migration testing, but if another technique is required then this will be tested separately.
- Pre-UTS provides confidence of the correct functioning of each migrated FOC meter set by exercising automated packs of SRs in different user roles, as well as exercising a small number of key business scenarios and verifying correct alert generation in certain situations.

In the second UIT environment (UIT-A), preparation will comprise the same set of environment proving tests (TRT) but SMSO, DMC and business scenario testing will be conflated into a single phase of EAT testing that comprises a reduced subset of Pre-MDUST migration and Pre-UTS scenarios covering all of the FOC SMSOs and DMCs.

Failure to implement this PR would lead the SMETS 1 programme (FOC) being unable to open up the UTS for Test Participants with any degree of confidence that the activities would be able to be carried out without unnecessary delays. This would ultimately have introduced significant delays into the UTS stage of FOC and finally FOC go live dates, whilst at the same time having a severely detrimental impact on the reputation of the DCC with BEIS and the ability for the DCC to meet its SEC obligations.

Securing Value for Money

The DCC provided feedback to CGI on their SOW three times between the period February to May 2020, with the focus on finalising the scope of the work to be carried out and to afford the DCC the opportunity to minimise the resulting charges.

The DCC received three responses back from CGI on their SOW, which had two revisions to their supporting Price Breakdown. To support this activity the DCC issued out a single UWO, without introducing any further risk to the price or delivery of this change.

The initial price was based on carrying out the Pre UTS activities but precluded any support for Work Off. This position was challenged as part of the feedback sessions held with CGI and a provision for Work Off was added into the SOW under version 2.0. This added a further REDACTED, however the initial set up labour charge came down by REDACTED or 9%.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Detail	Total Price (£)
Setup Labour Cost	REDACTED
Work-off and Additional Requests (WAR) provision	REDACTED
Total Setup Labour Cost	REDACTED
HP ALM Licences	REDACTED
DSP Team Setup Expenses Based on agreed daily charge rates: REDACTED	REDACTED
Schedule 7.1 Labour Discount (2% for projects over 6 months)	REDACTED
Estimated Total Setup Charges	REDACTED
Estimated Total Charges (excluding Finance)	REDACTED

Table 46: Price Breakdown PR1109

Initial IA price (£)	Final IA Price (£)	Difference (%)	Scope

REDACTED	REDACTED	(8.3)	Pre-UTS (excluding Work Off)
REDACTED	REDACTED	1.9	Pre-UTS + Work Off

Table 47: Initial vs Final Price PR1109

As per the previous paragraphs, the final row in the above table includes Work Off costs in the Final IA Price, but not the Initial IA. If we add the Work Off costs into the Initial IA price and compared this with the Final IA price, so we are comparing like-for-like, the discount would be 7.73%.

DXC – CR1177 (L2 Applications Support for SMETS1 FOC)

Drivers and Scope

Level 2 (L2) application support is a critical component to the FOC ecosystem. There are many suppliers, technologies and inter-dependencies required to make this capability work. DXC is currently contracted to provide the FOC meter cohort service management wrap. However, during discussions with DCC and Trilliant, it has become evident that neither DXC nor Trilliant has currently been contracted to provide an L2 applications support function. CR1177 describes the services DXC will deploy to plug that gap by providing an L2 Applications support team.

The L2 application support team ("the team") will be the logical place to which tickets will be dispatched by the Service Desk for initial Triage across the eco-system, in the absence of the Service Desk itself being able to resolve an incident or identify the correct resolver. The team will interface with DXC's Service Management team to ensure effective communication of status updates and resolutions as well as ensuring the right parties are involved and that SLAs of DXC and other suppliers within the FOC cohort are managed and escalated to DCC where necessary.

At a high level, the scope of CR1177 can be summarised as:

- Triage of all application incidents and application defects
- Resolution of L2 application incidents
- Support, deployment and testing of Maintenance Releases, Hot Fixes and Patches to resolve issues, managed via Major Incident Management and Change Control Processes
- Input into the creation of root cause analysis reports for P1 and P2 application incidents
- Support of out of hour's changes and maintenance activities in relation to Trilliant's software
- Capacity to investigate and recommend an effective application health monitoring solution
- Support for troubleshooting and resolution of issues with HAN devices led by other parties in the eco-system.

Failure to pursue CR117 would have meant no level 2 applications support for the SMETS1 FOC (ANSO) solution, creating significant operational risk.

Securing Value for Money

DCC worked extensively with DXC over three separate iterations of the SOW concluding in January 2021. This resulted in DXC reducing the overall price and accepting more risk, resulting in an initial savings of REDACTED to DCC.

In a final round of dialogue with DXC, DCC were able to negotiate a further a discount of 2% vs our last price (REDACTED) on the run element of the service, taking the price down to REDACTED

A breakdown of the costs and summary of the price reductions is provided in the tables below.

	CR Deliverable Ref	TOTAL (£)
Build / Test	Project Charges	REDACTED

Project Support	Ongoing Project Charges	REDACTED
TOTAL		REDACTED

Table 48: Price Breakdown CR1177

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	**(23.5)**

Table 49: Initial vs Final Price CR1177

II. Centralised Registration Service (Switching Programme) RY20/21 Variances Overview

Cost Centre Variance in RY20/21 by GL

The table below provides a breakdown of incurred and forecasted costs in Price Control format below i.e. mapping costs directly against the price control General Ledger codes (GLs).

Baseline (£m)			RY20/21	RY21/22	RY22/23
Total Switching			**4.131**	**1.654**	**-**
Payroll costs	PR	£m	3.634	1.475	-
Non-payroll costs	NP	£m	0.157	0.068	-
Recruitment	RC	£m	0.016	-	-
External services	ES	£m	0.324	0.111	-
Incurred (£m)			**RY20/21**	**RY21/22**	**RY22/23**
Total Switching			**5.676**	**4.042**	**1.345**
Payroll costs	PR	£m	4.184	3.768	1.161
Non-payroll costs	NP	£m	0.002	0.124	0.045
Recruitment	RC	£m	0.018	0.014	0.008
External services	ES	£m	1.458	0.136	0.131
IT services	IS	£m	0.015	-	-
Variance (£m)			**RY20/21**	**RY21/22**	**RY22/23**
Total Switching			**1.545**	**2.388**	**1.345**
Payroll costs	PR	£m	0.550	2.293	1.161
Non-payroll costs	NP	£m	-0.156	0.056	0.045
Recruitment	RC	£m	0.001	0.014	0.008
External services	ES	£m	1.134	0.025	0.131
Internal services	IS	£m	0.015	-	-

Cost Centre Variance by Staff Type and Team

The table below shows the payroll variance by sub-team within the Switching cost centre.

Switching Internal Costs Payroll Costs	RY20/21	RY21/22	RY22/23
Baseline	**3.634**	**1.475**	**-**
Commercial and Regulation	0.665	0.292	-
Operations	1.015	0.483	-
Security	0.073	0.014	-
Service Delivery	1.658	0.636	-
Testing	0.224	0.049	-
Incurred	**4.184**	**3.768**	**1.161**
Commercial and Regulation	0.594	0.338	0.015
Operations	0.997	1.216	0.510
Security	0.218	0.135	0.060
Service Delivery	2.075	1.838	0.498
Testing	0.300	0.241	0.077
Variance	**0.550**	**2.293**	**1.161**
Commercial and Regulation	-0.071	0.046	0.015
Operations	-0.017	0.733	0.510
Security	0.145	0.121	0.060
Service Delivery	0.417	1.201	0.498
Testing	0.076	0.192	0.077

2 Centralised Registration Service (Switching Programme)

Purpose, Scope and Structure

DCC is Ofgem's key delivery partner and active co-ordinator of contractors working to deliver the Design, Build and Test (DBT) phase of its Switching Programme, which aims to:

> "…*improve consumers' experience of switching, leading to greater engagement in the retail energy market by designing and implementing a new switching process that is reliable, fast and cost-effective. In turn this will build consumer confidence and facilitate competition, delivering better outcomes for consumers.*"[18]

Throughout this Regulatory Year (RY) the Switching Programme remained in the DBT phase and following this DCC will commence its role as Switching Operator responsible for live operations of the system. This is expected to commence in June or July 2022. Ultimate success for the Programme is for consumers - whether householders or businesses - to access faster, more reliable switching of their energy suppliers, in turn supporting a more competitive energy market. DCC is dedicated to playing an active role in enabling the Switching Programme through efficient and economical actions to achieve Ofgem's core objectives.

The DCC Switching Programme's Aims and Objectives

DCC's contribution to the Switching Programme has three core purposes:

- To advise - providing advisory services to support the Ofgem-led definition of the end-to-end switching arrangements;
- To meet the requirements - ensuring that the procured Central Switching Service (CSS) will meet the requirements defined by the Programme;
- To deliver - delivering the procured CSS, including managing the contracted delivery partners, and managing progress through DBT and the early years of operation.

These objectives are founded on DCC's Licence and the Retail Energy Code (REC), and they advance through the various Programme phases of Enactment, DBT and Live Operations. DCC's focus is to design, implement, manage, and maintain a solution that will enable fast and reliable switching of energy suppliers nationwide, including the provision of secure data handling. The current aims of the Switching Programme have been directly influenced by DCC-held consultations, the next one is planned on the DCC Switching Enterprise Transition Business Case which will be developed in Autumn 2021.

Core Activity in 20/21

At the start of the Covid-19 pandemic in April 2020 industry requested that Ofgem delay the start of User Entry Process Testing (UEPT) for six months to allow energy suppliers to prioritise support for their customers, as recorded in the minutes of the Delivery Group from March 2020 (Decision DG10-D01). This request was granted and DCC and its Systems Integrator (SI) actively supported the managed re-plan of the Programme.

During this re-plan the opportunity was taken to make further changes to reduce the risk within the plan, such as increasing the defect turnaround time, extending Data Migration Testing (DMT) Live Rehearsal and including the testing of the Operational Choreography in Operational Testing (OT) rather than Systems Integration Testing (SIT). As a result of these changes, the plan, which was approved and baselined in October 2020, extends the duration of the Programme by a year with the Go Live Window set as June and July 2022.

Work on the Programme continued during the re-planning exercise and significant testing stages were completed during 2020/21:

- Functional and Non-Functional SIT was completed successfully and SIT Exit was formally approved by the Ofgem Delivery Group in March 2021;
- Non-Functional DMT was completed successfully and formally approved by the Ofgem Implementation Group in early April 2021.

In addition, both UEPT and OT started on schedule in May 2021.

[18] Ofgem, Switching Programme: strategic outline case, https://www.ofgem.gov.uk/system/files/docs/2017/01/switching_programme_-_strategic_outline_case.pdf

DCC has a Switching Programme Stakeholder Engagement Strategy and an associated approach and plan which is updated on a quarterly basis. The approach includes a stakeholder map which identifies eight broad categories of stakeholder and six different key engagement mechanisms. Regular and targeted engagement with stakeholders commenced at an early stage in the DBT phase to ensure understanding of the role of DCC and its service providers within the delivery of the overall Programme. A key part of the approach is Switching Industry Summits. As a result of the Covid-19 pandemic these were moved to on-line events and the format changed to make them shorter; two were held during the year, at the end of March 2020 and in October 2020, and each was attended by nearly 100 delegates. The Summits are designed to provide information to stakeholders on the most relevant topics at the time, such as testing, data and security. As part of our approach we also run regular stakeholder engagement satisfaction surveys, linked to the Summits, to identify areas of engagement which require improvement. The level of overall satisfaction, shown in these survey results, has been maintained at over 70%.

The progress of the delivery of the Switching Programme will continue to be closely monitored against the parameters included within the DCC Switching DBT Business Case. Key stakeholders will be engaged in this process as part of DCC's reporting and during any necessary updating or re-baselining. Updates to the DCC Switching DBT Business Case will happen when there has been a significant financial change or change in approach, including timings, for example as a result of the managed re-plan of the Programme which took place between April and October 2020. Where it has been agreed that an update to the Business Case is required, the development of this update will include stakeholder engagement and, wherever possible, a schedule of changes will be published rather than a fully revised document. The change triggering the update will be managed through Ofgem's Programme governance and the form and timing of the update will be cleared through DCC governance, including ExCo. The DCC internal Switching DBT Business Case will also be updated to reflect the changes to the Programme and the additional external costs.

Monitoring and reporting of DCC's involvement in the Switching Programme will be delivered primarily through Programme governance and ex-post annual price control reporting. For the annual price control purposes, the Switching Programme always has a zero baseline, and all costs must be justified through the price control mechanism.

There are two main Programme governance forums run by Ofgem, the Delivery Group and the Implementation Group, both of which meet monthly and a fed by a number of Working Groups. DCC reports on progress, both in terms of time and quality and a summary update on finance against the baseline budget set out in the DCC internal Switching DBT Business Case.

DCC's Role in DBT

DCC's role in the DBT phase covers seven workstreams:

- Readiness Assessment – this is the responsibility of the Programme Co-ordinator (PC) appointed by Ofgem.
- Regulatory – this is the responsibility of Ofgem's Regulatory Team. This team has been supported by DCC's Regulatory team in the drafting of versions 2 and 3 of the Retail Energy Code (REC), Version 2 will come into effect when RECCo, the independent company set up to manage the REC, goes live in September 2021 and Version 3 will come into effect when the Switching service moves into live operation.
- Solution Delivery – a key focus for DCC and its service providers.
- Business Change – this is the responsibility of Ofgem and its PC.
- Testing – a key focus for DCC and its service providers.
- Data – a key focus for DCC, the SI and the Central Switching System Provider (CSSP).
- Transition – a key focus for DCC and its service providers.

The DBT Incentivisation Framework

The DBT incentives framework places DCC's margin at risk based on the timely delivery of key milestones to agreed quality. Five delivery milestones (DM) have been identified for the DBT phase following consultation with industry:

- DM1 - DBT Readiness – this milestone represents completion of mobilisation and planning for DBT which gives certainty to the industry parties to commence their DBT activities.
- DM2 - CSS Pre-integration Test Exit – this milestone represents successful completion of the initial, Pre-integration testing (PIT) of the CSS.

- DM3 - SI Readiness for SIT – this milestone represents successful completion of the planning and preparation activities for SIT, including development and agreement of the SIT Plan.
- DM4 - End to End Testing Exit – this milestone represents successful completion of the Programme-led End to End (E2E) testing. The SI is responsible for planning and managing the execution of this stage of testing.
- DM5 - Transition Stage 2 Exit – this milestone represents successful completion of all Transition Stage 2 exit criteria when Retail Energy Location (REL) data is created for the population of the CSS.

The milestones are assessed against agreed programme entry/exit gate assessment criteria which will be maintained by the PC. The completion of incentivised milestones is assessed by the Licensed Party Assurer based on achievement of these acceptance criteria, including completion of any stakeholder engagement specified in the Product Description for the milestone.

The principles and conditions under which the target delivery dates of the incentivised milestones can be changed are set out in the Policy on Incentivised Milestone Management which is closely aligned to the Change Control process. This policy was used for the Transition Phase and was updated to reflect governance changes in the DBT Phase. The policy allows changes to the performance regime, including but not limited to impacts on the critical path, from scope change driven by the PC, delay outside of DCC's control and materialisation of risks which have been identified as being outside of DCC ownership.

The second and third of these milestones DM2 and DM3, fell into RY20/21. To note, DM4 was due to occur in RY20/21 but following the re-plan outlined above, it was moved into RY21/22. The final milestone, DM5, was due to occur in RY21/22 but will now happen in RY22/23. The remaining incentivised milestones will be fully redefined alongside the programme milestones. Please see the Performance Section of the Price Control submission for further information.

DBT Phase Programme Delivery

Costs incurred during the DBT phase are directly driven by DCC's core responsibility to deliver a Switching service that is economic, efficient, robust, and secure. This responsibility has led DCC to act in the following capacities specifically relating to the CSS, alongside Ofgem's counterparts:

- As a contract manager - managing contracted service providers, including their deliverables, performance tracking, delivery against milestones and associated payments. This includes the objectives of:
    - Taking an active role in the management and delivery of outcomes;
    - Ensuring value for money for the consumer by taking into consideration the estimated "total cost of ownership" of a new switching service across the industry when managing change;
    - Managing innovation and accommodating design modification through contractual arrangements;
    - Mitigating risks through robust processes and contractual arrangements, including mitigating delivery risk and the cost of failure;
    - Managing service providers' incentivisation frameworks;
- As a manager of design integrity - managing the acceptance and, where relevant, integration of all design artefacts and documentation including system, service, interface, hosting and data specifications. Technical Design Authorities and design integrity teams are involved in considering change requests and their impacts on the programme timescales and design, with Ofgem holding overall technical design authority and DCC managing the CSS technical design integrity;
- As a solution assurance gatekeeper - managing the testing and proving process, including the acceptance of all testing artefacts, the assurance of test results prior to integration with other service provider systems and scoping and witnessing the Acceptance Tests.
- As an issues manager - assuring triage activities and managing defect escalations and rectifications as necessary.

2.1 Cost Centre Variances

2.1.1 Cost Centre Structure

In order to manage the broad requirements of the Switching Programme efficiently, the organisational model for the DBT phase was divided into five sub-programmes. These sub-programmes provide the leadership structure through which the programme resources operate, thus allowing resources to be allocated to specific tasks as necessary. These sub-programmes are detailed in the table below.

Function type	Function	Comments / Description
Sub-programmes	Design, Build and Test	This sub-programme is responsible for the management of two of the Programme's key suppliers, the SI (NetCompany) and the CSSP (Landmark).
	Operational Readiness	This sub-programme is responsible for the development of the approach to live service delivery and the management of the Switching Service Management Tools Provider (SSMTP) (Capgemini).
	Data Management and Migration	This sub-programme is responsible for activities associated with obtaining data from industry parties and preparation for and execution of data migration.
	Data Service Provider Interface	This sub-programme is responsible for the management of the development of the interface between the CSS and the Smart Metering Data Service Provider (DSP) which is managed by CGI.
	Commercial, Regulatory and Engagement	This sub-programme is responsible for commercial management of DCC's service providers on the Switching Programme, DCC's input to the development of the enduring REC and engagement with DCC's stakeholders on the Programme.
Additional assurance functions	Design Integrity	Responsible for assuring the completeness of the E2E design
	Test Assurance	Responsible for assuring the testing undertaken by the SI.
Oversight	DCC Leadership	Overseeing these sub-programmes is the DCC Leadership function which will lead the DCC Switching Programme and interface with key stakeholders
	Programme Management Office (PMO)	Provides support and coordination to the whole programme.

The Switching programme structure at the end of RY20/21 is illustrated in the figure below.

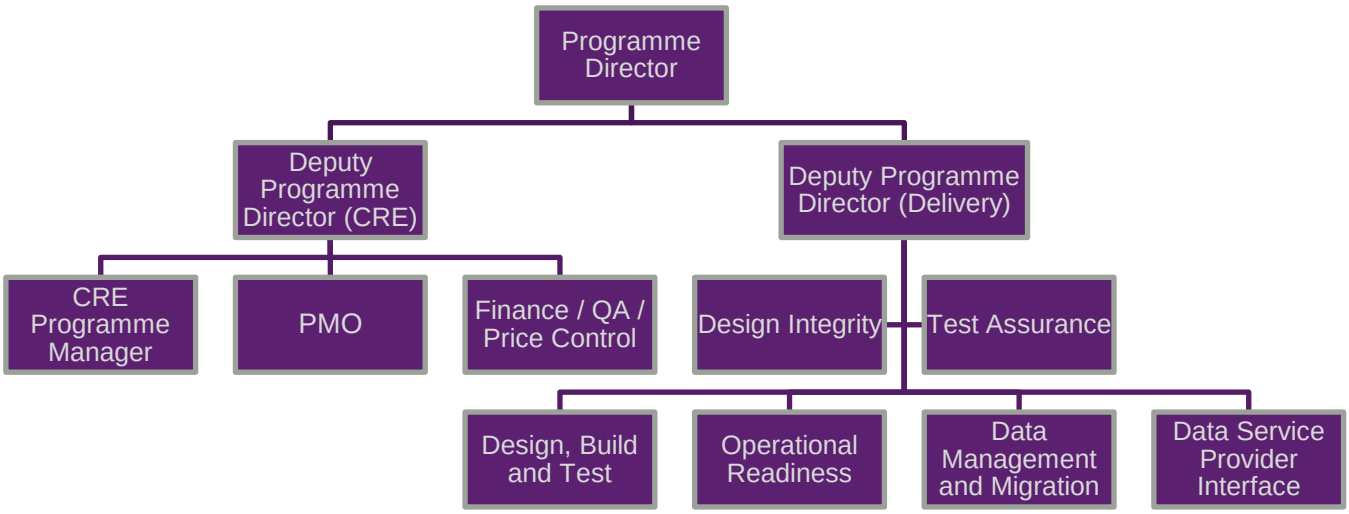


Figure 4: Switching Programme organisational structure

As the Programme moves into the next phase of DBT with a greater engagement of energy suppliers in UEPT and E2E testing and then prepares for Transition and Cutover to live operations the organisational structure has been reviewed and amended to better reflect the focus moving forwards. For RY21/22 we will be reporting against a different structure under the Deputy Programme Director for Delivery. There will be a different set of sub-programmes covering:

- User Integration Testing (UIT), OT and Transition Testing (TT);
- DMT and integration with the Smart Metering DSP;
- Transition, Cutover and Early Life Support (ELS); and
- Security and Retail Energy Location (REL) data.

There will also be a new sub-programme under the Deputy Programme Director (CRE) focusing on preparations within DCC for the in-life delivery of Switching, the Switching Enterprise Transition (SET) Programme.

The Switching Programme team for the DBT phase comprises predominantly permanent staff and has maintained a ratio of 75:25 permanent to contractor staff; however, it is acknowledged that consultants and contractors with specific skill sets may be required on an occasional basis. The ratio of temporary to permanent staff is regularly reviewed and revisited as necessary. The Programme team is insulated from the wider Smart Programme, using a dedicated and discrete team, and only calling on central DCC resources for core functions such as Finance and Communications. Any additional resource requirements are recruited specifically for the Switching Programme. This safeguards and protects the level and quality of resources working on the Switching Programme.

The permanent members of the Switching Programme team are drawn from the Programme Management Practice and Functions within the overall DCC organisation.

Incurred Cost by General Ledger Code in the RIGs

For the annual price control purposes, the Switching Programme always has a zero baseline, and all costs must be justified through the price control mechanism. The remainder of this section and the following sections therefore describe the drivers for the activities within the Switching Programme.

A breakdown of incurred and forecast costs in price control format is presented in Table 1 below. This maps costs directly against the Price Control new scope GLs. Payroll costs are explained in Section 1.3 and non-payroll External Services costs are explained in Sections 1.4 and 2.

To note, unlike other Price Control sections, this is the full incurred cost rather than solely variance from baseline. This is owing to the different nature of the Switching Programme where all costs are reviewed rather than solely variance.

Table 104: Switching - Incurred Cost by General Ledger Code in the RIGs

Incurred (£m)			RY20/21	RY21/22	RY22/23
Total Centralised Registration Services		**£m**	**5.676**	**4.042**	**1.345**
Payroll costs	PR	£m	4.184	3.768	1.161
Non-payroll costs	NP	£m	0.002	0.124	0.045
Recruitment	RC	£m	0.018	0.014	0.008
External services	ES	£m	1.458	0.136	0.131
IT services	IT	£m	0.015	-	-

Incurred Cost by Sub-Team

It should be noted that the sub-team structure within the Payroll system does not match the team structure within the Switching Programme which is illustrated in the figure above. The mapping between the two is presented in the table below.

Payroll Sub-team	Switching Sub-programme / Assurance Function	Comments
Commercial and Regulation (including Procurement)	Commercial, Regulatory and Engagement	Procurement activity ceased in Q1 of RY19/20
DBT Readiness	DBT	Since the Programme is in the DBT Phase, DBT Readiness has been achieved.
DBT Readiness	Data Management & Migration	Since the Programme is in the DBT Phase, DBT Readiness has been achieved.
DBT Readiness	DSP Interface	Since the Programme is in the DBT Phase, DBT Readiness has been achieved.
Design and Assurance	Design Integrity	
Operations	Operational Readiness	Since the Programme is in the DBT Phase, there are no live operations
Security	Design Integrity	Security is managed as part of the Design Integrity function
Service Delivery (including Programme Management)	Oversight (DCC Leadership & PMO)	Since the Programme is in the DBT Phase, there is no service delivery yet but there is use of Programme Management resource from the Service Delivery cost centre
Testing	Test Assurance	DCC is assuring the testing work of the SI

Error! Reference source not found. below shows the payroll cost by sub-team. We are presenting the i ncurred costs as these are equal to variances because the Switching programme has no formal baseline. In

RY20/21, only Service Delivery, incurred spend that exceeded the typical materiality threshold of £0.15m[19]. The Operations, Service Delivery and Testing sub-teams are forecast to show a material incurred cost during RY21/22. The Operations and Service Delivery teams are forecast to show a material incurred cost during RY22/23. The activities and events that are the primary drivers behind these costs are elaborated on in the following sections.

Table 11: Incurred Cost by Sub-team

Switching Internal Costs Payroll Costs		RY20/21	RY21/22	RY22/23
Baseline	**£m**	**3.634**	**1.475**	**-**
Commercial and Regulation	£m	0.665	0.292	-
Operations	£m	1.015	0.483	-
Security	£m	0.073	0.014	-
Service Delivery	£m	1.658	0.636	-
Testing	£m	0.224	0.049	-
Incurred	**£m**	**4.184**	**3.768**	**1.161**
Commercial and Regulation	£m	0.594	0.338	0.015
Operations	£m	0.997	1.216	0.510
Security	£m	0.218	0.135	0.060
Service Delivery	£m	2.075	1.838	0.498
Testing	£m	0.300	0.241	0.077
Variance	**£m**	**0.550**	**2.293**	**1.161**
Commercial and Regulation	£m	-0.071	0.046	0.015
Operations	£m	-0.017	0.733	0.510
Security	£m	0.145	0.121	0.060
Service Delivery	£m	0.417	1.201	0.498
Testing	£m	0.076	0.192	0.077

Key Events and Objectives Driving Activity and Cost in RY20/21

At the end of RY19/20 DCC and its service providers completed PIT in readiness for entry into SIT. Entry into SIT occurred as planned but then at the start of the Covid-19 pandemic in April 2020 industry requested that Ofgem delay the start of UEPT for six months to allow energy suppliers to prioritise support for their customers. The impact of this delay and additional changes introduced during the re-plan at industry's request was that the Programme plan, which was approved and baselined in October 2020, includes an extended period of SIT, a later start to all subsequent test phases and an increased duration of the Programme through to a Go Live Window set a year later in June and July 2022. DM4 was also moved forward from RY20/21 as a result.

The activity across RY20/21 has covered the test stages following PIT, namely Functional and Non-Functional SIT and Non-Functional DMT. This activity falls within three of the seven workstreams identified in the CSSIP:

- Testing, covering the execution of SIT and preparation for UIT, which covers UEPT and E2E Testing, and OT;
- Data, covering the execution of DMT and development of the REL;
- Transition, covering preparation for TT, Transition and Cutover.

As well as Programme delivery activities across these three workstreams, DCC has also been managing the entire Programme and its service providers. In addition, DCC has been supporting Ofgem in the drafting of

[19] The £0.15m materiality threshold is in use throughout the Price Control submission, along with the highlighting of material cells in tables. However, there is a zero baseline for the Switching programme. Therefore, we may use the materiality threshold to help explain the costs incurred within Switching but will not add any additional highlights.

versions 2 and 3 of the REC. Version 2 will come into effect when RECCo goes live in September 2021 and version 3 will come into effect when the CSS goes live in summer 2022.

The main deliverables and associated Product Descriptions worked on over the course of RY20/21 are:

- SIT Completion Report
- UIT Test Plan, Scenarios, Scripts, Test Data Requirements, Test Data Specifications and Smoke Test Scenarios
- UIT Test data tool design
- UEPT Guide for Users and UIT Counterparty Simulator Test Tool User Guide
- UEPT Self-certification Pack
- UEPT Test Readiness Report
- UIT Smoke Test and Integration Sequence Testing Completion Reports
- UIT test environment
- OT Test Plan, Scenarios, Scripts, Test Data Requirements, Test Data Specifications and Smoke Test Scenarios
- OT Test Traceability (Requirements Traceability Matrix extract)
- OT Test Readiness Report
- DMT Test Plan, Scenarios, Scripts, Test Data Requirements and Test Data Specifications
- DMT Test Readiness Report
- Cleansed data as a result of the second and third cycles of data analysis and cleansing
- Future service design
- Transition test plan
- Transition plan and approach.

2.2 Drivers for Costs Incurred – Resource

The Programme has delivered to the original plan for SIT entry and then the revised plan for all activities once that was baselined. It should be noted that there were changes in resource against the RY20/21 forecast as a result of the managed re-plan. This was primarily a result of the extension of the Programme and the need to retain resource that had originally been planned to roll off the Programme as it progressed towards the original go live date of June 2021. In addition to retaining resources for longer, additional resource was also required, particularly in the Operations sub-team, to undertake additional activities that were built into the Programme during the re-planning.

It should be noted that there has been a continuing flow of Change Requests (CR) approved by Ofgem that the Programme has been required to impact assess and then, when approved, implement. There have been increases in external costs incurred to address these CRs but no equivalent cost increase for DCC's internal resources.

2.2.1 Design, Build and Test

Payroll Sub-Team – DBT Readiness

In managing the Programme's two key service providers, the SI and the CSSP, the DBT sub-programme has been responsible for overseeing their work and approving key deliverables prior to submission into Programme governance. The sub-programme has also been responsible for managing all change relating to design and testing. The main deliverables which the SI and CSSP have worked on over the course of RY20/21 are:

- SIT execution reports
- SIT Completion Report
- UIT Test Plan, Scenarios, Scripts, Test Data Requirements, Test Data Specifications and Smoke Test Scenarios
- Test data tool design and delivery
- UEPT Guide for Users and UIT Counterparty Simulator Test Tool User Guide
- UEPT Self-certification Pack
- UEPT Test Readiness Report
- UIT Smoke Test and Integration Sequence Testing Completion Reports

- UIT Test environment
- Transition Test Plan, Scenarios, Scripts, Test Data Requirements and Test Data Specifications
- Lessons learned reports from each test preparation phase.

Activities driving change in resource in RY20/21

There were no significant changes in resource levels across the sub-programme in RY20/21.

Activities driving change in resource in RY21/22 and RY22/23

As noted earlier, the managed re-plan as a result of Ofgem's decision to delay the start of UEPT by six months will impact on the DCC resourcing model in both RY21/22 and RY22/23.

For the DBT sub-programme the impact will be seen primarily in RY21/22 since resources will be required to manage the SI and CSSP which will be continuing to work through the DBT phase longer than was originally anticipated. UEPT and OT will not now start until May 2021 and E2E Testing will not start until July 2021 followed by TT which will run until March 2022.

2.2.2 Data Management and Migration

Payroll Sub-Team – DBT Readiness

The Data Management and Migration sub-programme has two main areas of responsibility:

- Obtaining data from industry parties and putting in place mechanisms to improve the quality of that data. In this role the key activities of the sub-programme have been:
    - Overseeing and supporting the data analysis and cleanse activities undertaken by the CSSP
    - Overseeing a pilot Interactive Data Matching (IDM) project run by the CSSP in summer 2020. The objective of this project was to understand the activities that should be part of central address matching exercises to support achievement of an address data quality target at Go Live and the timescale for those activities
    - Commissioning and overseeing the first phase of the central address matching project being run by the CSSP. This project involved the use of a Feature Manipulation Engine to enhance the automated data matching that has been undertaken to date.
- Preparation for and execution of data migration. In this role the sub-programme team has been responsible for managing the SI's activities in preparation for and execution of DMT. This has included:
    - Development of test artefacts including the DMT Test Plan, Scenarios, Scripts, Test Data Requirements, Test Data Specifications, Smoke Test Scenarios, DMT Test Traceability Report and the DMT Test Readiness Report
    - Execution of both Functional and Non-functional DMT.

Activities driving change in resource in RY20/21

The delay in the later test phases following SIT meant that work on data migration did not start as early as planned which has changed the profile of resource usage in this sub-Programme across RY20/21.

Activities driving change in resource in RY21/22 and RY22/23

The managed re-plan also has the effect of extending the Programme across the whole of RY21/22 and into RY22/23 and so some activities originally planned to be completed in RY20/21 will now take place in later years. For example, the central address matching project being run by the CSSP will now take place in RY21/22 and data migration itself will form a part of the Transition in RY22/23.

2.2.3 Data Service Provider Interface

Payroll Sub-Team – DBT Readiness

In managing CGI in the development of the interface between the CSS and the DSP the Data Service Provider Interface sub-programme has been responsible for overseeing CGI's work and approving key deliverables prior to submission into Programme governance. The main deliverables which CGI has worked on over the

course of RY20/21 are the PIT and SIT for the CSS/DSP interface. The sub-programme team has also worked with DCC's Regulatory and Test Assurance teams to ensure that appropriate arrangements are in place for the governance around the development of this interface, which involves working with DCC's Test Assurance Board and the Smart Energy Code Panel's Test Advisory Group.

Activities driving change in resource in RY20/21

As a result of a decision taken to increase the involvement of CGI in both OT and TT, that it was not previously required to support, additional resource from the Data Service Provider Interface sub-programme team was required in RY20/21 to manage CGI's preparation for this testing. This decision, which was approved by Programme governance, was taken to increase the coverage within these test phases and reduce the risk associated with testing.

Activities driving change in resource in RY21/22 and RY22/23

The managed re-plan also has the effect of extending the Programme across the whole of RY21/22 and into RY22/23 and so some activities originally planned to be completed in RY20/21 will now take place in later years. As a result of the decision taken to involve CGI in test phases that they were not previously required to support, the sub-programme team will also be managing CGI through UIT, OT, TT and Transition, the last of which will take place in RY22/23.

2.2.4 Operational Readiness

Payroll Sub-Team – Operations

In managing the Programme's third key service provider, the SSMTP, the Operational Readiness sub-programme has been responsible for overseeing its work and approving key deliverables prior to submission into Programme governance. The main deliverables which the SSMTP has worked on over the course of RY20/21 are:

- Service Design
- OT processes and procedures document, OT Test Plan, Scenarios, Scripts, Test Data Requirements, Test Data Specifications and Smoke Test Scenarios
- OT Test Traceability (Requirements Traceability Matrix extract)
- OT Test Readiness Report.

The Operational Readiness sub-programme has also been responsible for planning the transition and cutover to live operations and establishing Service Management and ELS. In this role it has produced the following key deliverables:

- Transition plan and approach
- Post-implementation and Early Life Support plan
- Service Acceptance checklist
- Master Readiness Checklist and Master Handover Pack.

Key events and activities driving activity and cost in 20/21

In addition to managing the SSMTP, the Operational Readiness sub-programme has been responsible for covering two aspects of the Programme:

- Planning the Transition and cutover to live
- Establishing Service Management and ELS.

For the Transition phase, planning was carried out to inform the approach for transitioning from the old Switching arrangements to the new arrangements, which includes the migration of data into CSS and bringing on the production interfaces. The coordinated activities between the Parties Under Integration (PUI) and Licensed Parties is being choregraphed and will make up the Runbook to be executed during the actual Transition. To support the successful transition and Cutover to Live, the 'service' aspect has also been

considered and the designs, processes, procedures and tools continue to be developed that will be used to inform Service Management.

Activities driving change in resource in RY20/21

Additional resource was required from the Operational Readiness sub-programme to undertake additional activities related to service design that were built into the Programme during the re-planning.

Activities driving change in resource in RY21/22 and RY22/23

The managed re-plan also has the effect of extending the Programme across the whole of RY21/22 and into RY22/23 and so some activities originally planned to be completed in RY20/21 will now take place in later years. For example, OT has been delayed until RY21/22 and also extended with the addition of a third tranche of testing in February/March 2022 and Transition will now take place mainly in RY22/23.

2.2.5 Commercial, Regulatory and Engagement

Payroll Sub-Team – Commercial & Regulation (inc Procurement)

The Commercial team within this sub-programme led the work to agree the commercials and contract changes with DCC's service providers as a result of the managed re-plan. The team set the approach to the commercialisation of the re-plan with our service providers and then led the review of impact assessments and the challenge and negotiation of costs bringing in Subject Matter Experts from the remainder of the Programme to ensure the proposed approaches were acceptable.

In addition, the Commercial team managed a Performance Recovery Plan (PRP) with the SI resulting from continued poor planning and quality of deliverables produced. This involved working with the SI to agree the nature of the poor performance, agreeing a recovery plan and then holding weekly progress review meetings to ensure the agreed activities were being undertaken. The initial PRP resulted in improved performance from the SI, but not enough to return them to Green on the performance dashboard. A revised plan was then agreed and implementation of this second plan returned the SI's performance to acceptable levels before the end of the Regulatory Year. The Commercial team have also undertaken all the standard contract and supplier relationship management activities with our service providers, including the commercial management of Change Requests (CR).

The Regulatory team has led DCC's input to the development of the enduring REC. In this role the sub-programme team manages DCC's response to Ofgem consultations on the drafting of the REC and is providing input to technical specifications that will be included in the enduring REC, including the performance regime, the change management schedule and the Switching Operator service definition. As the RECCo has come into operation and the REC Code Manager has been appointed and commenced its mobilisation process the Regulatory team has led DCC's engagement with them to define the ways of working between the two organisations post-Switching go live ensuring engagement with the appropriate sub-programmes in the working sessions.

The Engagement team has continued to lead engagement with DCC's stakeholders on the Programme. The team has continued to update the stakeholder engagement approach and plan on a regular basis, publish a monthly delivery bulletin and arrange and run both formal and informal stakeholder engagement events such as the Switching Industry Summit and more targeted events, such as one run in January 2021 on service management. Over the year and as the Programme moves towards UEPT the focus on engagement with stakeholders has broadened to include PUIs as well as energy suppliers and the team runs monthly sessions focusing on the feedback from the Programme's E2E Plan Review sessions.

In the second half of the Regulatory Year a new sub-programme, In-life Delivery, was initiated to support DCC functions in their preparations for live operation of Switching and to define and manage a number of projects to deliver additional capabilities required that were better run centrally. The Commercial, Regulatory and Engagement sub-programme managed the preparatory analysis and planning activities that were undertaken ready for the sub-programme to start work fully in RY21/22.

The Commercial, Regulatory and Engagement sub-programme also started to develop the internal DCC Go Live Governance pathway that will be followed to ensure that all necessary governance is completed prior to reporting to Ofgem on DCC's readiness to Go Live.

Activities driving change in resource in RY20/21

The resourcing of the Commercial, Regulatory and Engagement team has remained fairly stable over the year with limited changes in personnel. It was less affected in RY20/21 than some of the other sub-programmes since the work and resourcing of the team was largely anticipated throughout the year. The team did, however, not have an Engagement Lead at the start of the year or a Communications Lead for the second half of the year.

Activities driving change in resource in RY21/22 and RY22/23

The managed re-plan has the effect of extending the Programme across the whole of RY21/22 and into RY22/23 and so some activities originally planned to be completed in RY20/21 will now take place in later years. All the activities carried out by this sub-programme will therefore continue into these Regulatory Years.

2.2.6 Design Integrity

Payroll Sub-Team – Design and Assurance

The Design Integrity team is responsible for assuring the completeness of the E2E design including maintaining the design documents and updating them in line with changes agreed through the change control process, completing quality assurance and working with the SI's design team to resolve design issues.

The team provides design input to other sub-programmes including:

- Reviewing all test artefacts to ensure alignment with the requirements and design
- Providing overall vision and guidance to the Programme service providers to support the solution design process
- Undertaking design impact assessments for change requests raised through the change control process
- Development of the E2E Reporting Solution design.

The team also includes the Programme's Security Management team which produced the Information Risk Assessment and Risk Treatment Plan for the Programme. This team also supported the procurement of the Public Key Infrastructure (PKI) provider for the Programme and provided operational support for the PKI for test environments, including providing certificates to end users.

Activities driving change in resource in RY20/21

As noted earlier, the managed re-plan requested by industry resulted in an extended period of SIT and later starts to subsequent test phases. This has required the Design Integrity team to be in place throughout RY20/21.

Activities driving change in resource in RY21/22 and RY22/23

The extended need for the Design Integrity team as a result of the managed re-plan will continue into RY21/22.

2.2.7 Test Assurance

Payroll Sub-Team – Testing

The Test Assurance team is responsible for assuring the testing undertaken by the SI. In RY20/21 the focus has been primarily on the SI's activities in running SIT and preparation for UIT and DMT which has included reviewing all the test artefacts produced by the SI. The main deliverables on which the DCC Test Assurance sub-programme has worked over the course of FY20/21 are assurance of:

- The execution of Functional and Non-Functional SIT
- The close out governance for Functional and Non-Functional SIT, including management of the SEC governance process
- The preparation activities for the UIT, OT and Transition testing phases
- The preparation and execution of Functional and Non-Functional DMT
- The close out governance for Functional and Non-Functional DMT
- Preparation activities for Data Migration Live Rehearsal testing.

In addition, the team has provided support for the management of all change relating to design and testing and addressing actions arising from the findings of reviews carried out by the Core Systems Assurer (CSA).

Activities driving change in resource in RY20/21

As noted earlier, the managed re-plan requested by industry resulted in an extended period of SIT and later starts to subsequent test phases. This has required the Test Assurance team to be in place throughout RY20/21.

Activities driving change in resource in RY21/22 and RY22/23

The extended need for the Test Assurance team as a result of the managed re-plan will continue throughout RY21/22.

2.2.8 DCC Leadership

Payroll Sub-Team – Service Delivery

The Programme is managed by the DCC Leadership team which comprises the Programme Director, two Deputy Programme Directors and programme and project managers. The Programme Management Office Team is also part of the overall DCC Leadership.

Activities driving change in resource in RY20/21

The DCC Leadership was impacted by the departure of the Deputy Programme Director responsible for Delivery and a delay in finding a suitable replacement. It was also impacted by the departure of the PMO Manager and the delay in finding a suitable replacement, although this post was filled using a consultant from Expleo, the CSA, which had also conducted a review of all the PMO processes over the summer of 2020. However, overall resource costs increased as a result of the extension of activities and the addition of the Switching Enterprise Transition sub-programme. This sub-programme will primarily be focused on monitoring the progress of DCC Functions' preparations but will also manage a small number of central projects such as looking at the way in which the Technical Operations Centre can make use of Switching data and the development of a Target Operating Model for Switching.

Activities driving change in resource in RY21/22 and RY22/23

The Leadership team is at full complement but, as noted earlier, the structure of the Delivery team within the Programme will be modified to reflect the changing focus on testing and preparation for go live. The managed re-plan has the effect of extending the Programme across the whole of RY21/22 and into RY22/23 and so the Leadership team will remain in place through to and beyond Go Live in the summer of 2022.

Drivers for Costs Incurred – Non-Resource

2.2.9 Summary

There were a limited number of non-resource procurements within the Switching programme within RY20/21. The largest category of incurred costs was for Delivery Support. The breakdown is provided below.

Table 15: External services material variance for the Switching programme

	Incurred (£m)		RY20/21	RY21/22	RY22/23	
	Total Incurred External Services	**£m**	**1.458**	**0.136**	**0.131**	
	Variance (£m)		**RY20/21**	**RY21/22**	**RY22/23**	
	Total Variance External Services	**£m**	**1.134**	**0.025**	**0.131**	
GL	**Variance**		**RY20/21**	**RY21/22**	**RY22/23**	**Procurement Type**
ES	Switching – contractor support (various)	£m	**0.252**	-	-	REDACTED
ES	ECoS COS Party Integration with CSS	£m	**0.160**	-	-	REDACTED
ES	Switching Programme Delivery Support	£m	**0.602**	-	-	REDACTED
ES	PKI Discovery / Design	£m	**0.177**	0.136	0.131	REDACTED

2.3.2 Switching – Contractor Support (various)

Driver for the Procurement

In RY20/21 Switching incurred non-resources spend over £0.15m relating to contractor support for the Delivery sub-programmes, in particular DBT and Data Management and Migration.

This support was provided by a number of contractor resources, some of whom had previously worked on the programme running the DBT Readiness sub-programme in the Enactment phase of the programme (May 2018 – April 2019). There was a need to retain their extensive knowledge of the programme, and specific expertise around programme data and solution architecture was also needed in support of the permanent members of the programme team. This was particularly important owing to the gap in Deputy Programme Director resource as outlined above.

Securing Value for Money

This non-resource spend item is formed of four contracts, none of which met the materiality threshold individually but are included in the submission for completeness. The maximum value with one supplier was £67k.

The knowledge and experience that the contracted resources had of the programme was irreplaceable so retaining these resources provided the best value for money for the programme. Value for money was managed by:

- Ensuring this resource was targeted at activities needing specific expertise not available in the wider team;
- Reducing the number of days expected; and
- Management of monthly expectations by the Deputy Programme Director (CRE).

2.3.3 ECoS COS Party Integration with CSS

Driver for the Procurement

In RY20/21 Switching incurred non-resources spend over £0.15m relating to 'ECoS COS Party Integration with CSS' [Switching]. The costs relate to two suppliers and each supplier's incurred amount is not material – the maximum spend with one supplier is £80,488.

The Government consultation on a proposal to direct DCC to provide Enduring Change of Supplier (ECoS) arrangements for smart meters commenced on 30th May 2019[20]. The proposed solution was anticipated to impact on the Switching design through the introduction of a new 'CoS Party' to the Switching ecosystem, which will require registration data from the Central Registrations Service (CRS) in order to undertake its responsibilities.

The change request form from Ofgem outlined the following as in and out of scope:

In Scope:

- Changes to Switching processes and services required to introduce the ECoS CoS Party into the Switching ecosystem.
- Functional and technical changes to the Central Switching Service resulting from integration with the CoS Party.
- Defining any key requirements for the CoS Party e.g. security, network that will inform ECoS scoping and planning.
- Indicative costs for including the capability within the CSS (design, build and test*), to provide the technical capability of the Smart Metering Enduring Change of Supplier (ECoS) solution with the existing Switching Architecture.
- Define any assumptions created in the definition of the revised end-state.
  An assessment and description of any relevant RAID (Risks, Assumptions, Issues, Dependencies).

Out of Scope**:

- Impacts on any final integration testing activities and transitional activities required with CoS party.
- Any ongoing operational cost impact once the service is live.
- Any impacts to the regulatory framework underpinning the new switching arrangements. An estimate of the rough order of magnitude of the costs that would be incurred, including both DCC and end-to-end cost impacts on interfaces between Smart Metering and any other parties than CSS
  Operational, technical, commercial and contractual Impacts of incorporating the COS Party into the DCC Total/Live Systems (it is assumed that these impacts will be addressed directly by the ECoS programme).
- Changes to DSP architecture and consequential impacts (it is assumed that these impacts will be addressed directly by the ECoS programme.
- Inclusion of the CoS Party within the Switching Service Management framework.

* Stubbed integration test only

** Will be covered by a change request raised by the ECoS Programme once the CoS party has been procured. ECoS go live is early 2023

Securing Value for Money

The change request was required to be issued to existing Switching suppliers Landmark and NetCompany.

The costs are reported as one sum here, but as noted were each immaterial individually. Furthermore, costs incurred were carried out as separate work packages including Initial Configuration and monthly charges to ensure value for money at each stage.

[20] Consultation on directing the DCC to plan for the design, development and implementation of smart meter enduring Change of Supplier arrangements - https://smartenergycodecompany.co.uk/latest-news/beis-smip-consultation-on-directing-the-dcc-to-plan-for-the-design-development-and-implementation-of-smart-meter-enduring-change-of-supplier-arrangements/

2.2.10 Switching Programme Delivery Support

Driver for the Procurement

In RY20/21 Switching incurred non-resources spend over £0.15m relating to Switching Programme Delivery Support which was to improve the performance of the PMO and then to provide additional resources due to a staffing shortfall that could not be met using internal resources. The support provided consisted of multiple purchase orders covering two separate assignments:

- Development and implementation of improved PMO processes. This work was commissioned to review the ways of working of the PMO, define improved processes and procedures and then implement the new ways of working to meet the needs of an expanded programme team.
- The provision of resource to cover for staff shortages. This work served two purposes, it provided the additional resources necessary but also helped to embed the new ways of working in the PMO. Initially a PMO Manager and a PMO Analyst were provided, this reducing after a short period to just the PMO Manager until an internal resource was recruited into the role.

Securing Value for Money

The services were commissioned from a consultancy firm via the Programme Team via direct procurement. As each item was estimated to be under £100k the procurement was not required to be done by the Procurement Team.

2.2.11 PKI Discovery / Design

Driver for the Procurement

In RY20/21 Switching incurred non-resources spend over £0.15m relating to PKI Discovery/Design to define the managed PKI certificate service to be used to support testing in DBT and then in-life operations.

DCC sought to engage a tScheme Managed PKI Service for the Switching Programme to support the provision of Transfer Layer Security (TLS) and Signing certificates to the 200 organisations that will be using the CSS (possibly rising to 400 users over time).

The Managed PKI Service provider will deliver the core components needed to deliver a PKI for the closed community. The supplier will be expected to provide the components below as part of an end-to-end PKI managed service:

- Design and build of the PKI (comprising a Root Certificate Authority (CA) as Trust Anchor with one or more Subordinate Certificate Authorities (Sub CA) signed by the Root CA);
- Fully defined Certificate Policy, Policy control, and Issuing CA procedural documents to support the PKI.
- Four PKI environments: SIT, UIT, Pre-Prod. and Production;
- High Assurance tScheme1 compliant Root CA, under the complete control of DCC;
- Full managed service for all PKI components; and
- Hardware Security Modules for the protection of CA Private keys, including the location of the Offline Root CA and online environments hosted from a secure datacentre.

The resources commissioned worked with the programme security team to identify the requirements and design the solution so that a service could be procured in time for the start of User Integration Testing.

The PKI certificate service is a critical part of the overall Switching infrastructure since the Switching Service will be handling personal data and DCC will have a Data Controller role under the General Data Protection Regulations.

Securing Value for Money

Prior to commencing this procurement DCC explored the opportunity to build on DCC's wider provision However, the approaches used had technical differences that could not be addressed to meet the requirements of Switching.

Prior to the Request for Proposal (RFP) being issued, a market engagement exercise was undertaken in November 2019 to help enable us to:

- Understand the market and the types of solution on offer.
- Refine our requirements and how they might be presented in a formal tender.

NDAs were signed and two suppliers participated in the exercise by providing a response.

The RFP was issued on 17 December 2019, expressions of interest were sought from four suppliers and two submissions were received.

Scores, rationale and rankings were captured in the relevant RFP Evaluation Matrix for this procurement. The evaluators from DCC carried out a scoring exercise and the moderation session was held on the 20 January 2020, led by DCC Procurement to agree the final scores and supplier feedback.

The legal evaluation of the proposed contract amendments determined that the changes proposed by REDACTED posed a major risk to Smart DCC and negotiations would need to take place to come to an agreement on more acceptable amendments.

The changes proposed by REDACTED failed the legal evaluation as they presented an unacceptable risk profile.

Within the final agreement and as part of the initial work, REDACTED, the successful supplier, provided some early certificates for free saving DCC work.

Table 16: PKI Discovery/Design Procurement

<table>
<tr><th colspan="4">Procurement – PKI Discovery/Design</th></tr>
<tr><td>Number of Bids received</td><td colspan="3">2</td></tr>
<tr><td>Number of Bids shortlisted</td><td colspan="3">2</td></tr>
<tr><td>Strengths of Selected Bidder</td><td colspan="3">The REDACTED proposal was the best suited to Smart DCC’s requirements and provided the best overall value for money.

Quality Review Summary:
REDACTED were the highest scoring bidder following the submission evaluation, they demonstrated a good understanding of the requirement and their experience aligned them well for this requirement.

Value for money:
Initial Requirement<table><tr><td>REDACTED</td><td>REDACTED</td></tr><tr><td>REDACTED</td><td>REDACTED</td></tr></table>
Ongoing annual cost (3 years)<table><tr><td>REDACTED</td><td>REDACTED</td></tr><tr><td>REDACTED</td><td>REDACTED</td></tr></table></td></tr>
<tr><td>Challenge by DCC</td><td>Initial Price</td><td>Per Annum (for 3 years)</td><td>BAFO</td></tr>
</table>

	REDACTED	REDACTED	REDACTED

2.3 External Costs - Switching

2.3.1 Overview

CR1037 was raised to cover the end-to-end DSP implementation of the Central Switching Service (CSS). The introduction of CSS will impact the existing Registration Data Interface and the data flowing through that interface. There would therefore be consequential changes on the DSP systems, and potentially the DCC Billing and Business Intelligence/Management Information (BI/MI) systems. DCC subsequently withdrew CR1037 and replaced it with a series of Change Requests (CRs) covering individual phases of the DCC Data System implementation.

The procurement of the CSS Fundamental Service Providers took place over the course of RYs 18/19-19/20, and the justification of how these contracts constituted value for money was explained through DCC's price control submissions in those respective years.

The materiality threshold for external Switching costs is the same as for non-Switching i.e. £1m. the value for both CR1263 and CR1264 exceeded the materiality threshold and are justified in more detail in the sections below. The table below summarises the current set of Switching CRs.

Also, contrary to previous years, we have excluded from the narrative the timetables for each CR/PR. Instead, we have consolidated this information into the supplementary finance schedules, which are attached to this submission.

Table 17: Summary of Switching (CRS) related CRs (below the materiality threshold)

CR Ref #	Description
CR1260	DSP CSS DSMS integration – DCC Service Management System (DSMS) design and build up to PIT complete (no environment changes).
CR1261	DSP CSS Design: DCC Data System PIT (Preliminary Integration Testing) design phase
CR1265	DSP CSS Post SIT: UIT testing/ User Entry Process Testing (UEPT), Transition to Operations (TTO)/Service Readiness, Go Live, Service uplift.
CR1266	DSP CSS Links: Gamma procurement and connectivity between the DCC Data System and the CSS platform hosted in the cloud, including Azure connectivity links
CR1314	Exception Handling Strategy: CSS Uplift to the Exception Handling Strategy
CR1318	MPAS Business Date: CSS Handling of MPAS (Meter Point Administration System) Business Date
CR1323	DSP Production data in SIT-B (CSS)
CR1350	CSS re-plan (April 2020): note that although DSP has provided a PIA for the impact of the shift in the plan, it is assumed that actual impact will be covered under the individual CRs such as CR1264 and CR1265 which span the period after the SIT phase up until go live.
PR1278	DSP Switching – SIT Test Execution for Ofgem changes covers testing of additional functional CRs over and above the core scope included in CR1263.

Table 18 Summary of Switching (CRS) related CRs (above the materiality threshold)

CR Ref #	Description	Service Providers Affected	Driver
CR1262	DSP CSS Implementation: DCC Data Systems implementation to PIT complete, including infrastructure design and build effort for the PIT environments and SIT-B environments (i.e. the infrastructure that would be required to develop the CSS enhancements and deliver them into a SIT-B environment).	**CGI**	Faster Switching
CR1263	Delivers the Central Switching Service (CSS) System Integration Test phase. The SIT phase will be carried out by the CSS System Integrator, but support will be provided through multiple activities such as, Regression testing, system integration and triage by the DSP.	**CGI**	Faster Switching
CR1264	Delivers the design and implementation of DCC Data systems specific to CSS. The scope of supply is to build the DCC Data System environment extensions for CSS in relation to the UIT-B, UIT-A, SIT-A, Production and DR environments.	**CGI**	Faster Switching
CR1428	The objective of CR1428 is to enable design, implementation and support of the changes required by an incoming ECoS service provider (ECoS Party) replacing TCoS.	**CGI**	Faster Switching

2.3.2 CGI – CR1262 (Switching DSP Consequential Changes (formerly CR1037) – BUILD AND PIT)

Drivers and Scope

The introduction of CSS will impact the existing Registration Data Interface and the data flowing through that interface. CR1037 was raised to cover for the delivery of all the DSP phases of the release lifecycle associated with the introduction of CSS, but subsequently split into constituent CRs covering different phases of the implementation lifecycle. CR1307 covered:

- Document the DSP's current understanding of the CSS Programme requirements where they impact DSP
- Document the DSP's current understanding of the DSP scope of work in support of the full CSS release lifecycle
- Provide a fixed price for completion of the PIT Design phase
- Identify current areas of ambiguity that will prevent DSP from providing a fixed price for the full CSS release lifecycle.

CR1261 documents the design and provides the fixed price for completion of the design work. The purpose of this CR1262 FIA v1.0 is to provide a fixed price for the completion of the DSP Build and PIT phase.

Securing Value for Money

The initial price for CR1262 (Switching DSP Consequential Changes (formerly CR1037) – BUILD and PIT) was calculated to be REDACTED by CGI DSP. However, it is important to remember the scope of activity within this CR was once within the original and much larger Switching Programme CR1037. Under CR1037 (Switching DSP Consequential Changes), the initial price for this phase of activity was calculated to be

REDACTED. The extract from the Price Breakdown V2.0 is below, as the Price Breakdown V1.0 only contained the Design phase:

Table 19: Price Breakdown CR1262

Detail	Total Price (£)
CR1037 Labour Costs for Build phase (including Anomaly Detection design effort refund) (see "Labour Breakdown - PIT Build" tab)	REDACTED
DSP Team Setup Expenses for Build phase Based on agreed daily charge rates: REDACTED	REDACTED
Infrastructure expansion of PIT environments and PIT Build support	REDACTED
Total Setup Charges for Build phase only, excluding Finance	REDACTED

The activity covered a 10-month period between September 2019 and June 2020. This CR1037 Full Impact Assessment (FIA) V2.0 included 7,482 days of labour at a cost of REDACTED, expense charges of REDACTED and Infrastructure expansion of PIT environments and PIT build support costs of REDACTED.

CGI DSP provided the CR1037 Final Impact Assessment (FIA) V2.1 and CR1037 Price Breakdown V2.1 which had a total cost of REDACTED, representing a 10.5% saving against the CR1037 Price Breakdown V2.0. The purpose of this FIA V2.1 was to provide an updated fixed price for the PIT Build phase, update the status of key CSS provided documentation and the removal of anomaly detection from scope. The labour charges reduced by REDACTED (11.3%) as the volume of labour days required reduced by 641 days (8.6%) to 6,841 labour days. Resource savings were delivered across the different team categories, but the more significant savings (REDACTED) include the Environment Team Leader, the Implementation Team Senior Developer, the System Test Manager Team Leader and a Senior Security Architect. These 4 roles alone delivered more than two thirds of the labour savings at REDACTED. The expenses charges reduced by a further REDACTED (11.4%) as a result of the reduced labour days. The Infrastructure expansion of PIT environments and PIT Build Support increased by REDACTED (12.9%) largely as a result of new third-party Thales licenses and support.

Table 20: Price Breakdown CR1262

Detail	Total Price (£)
CR1037 Labour Costs for Build phase (including Anomaly Detection design effort refund) (see "Labour Breakdown - PIT Build" tab)	REDACTED
DSP Team Setup Expenses for Build phase Based on agreed daily charge rates: REDACTED	REDACTED
Infrastructure expansion of PIT environments and PIT Build support	REDACTED
Total Setup Charges for Build phase only, excluding Finance	REDACTED

CGI DSP provided the CR1262 Final Impact Assessment (FIA) V1.0 and CR1262 Price Breakdown V1.0 which had a total cost of REDACTED, representing an 11.4% saving against the CR1037 Price Breakdown V2.1. The purpose of this CR1262 FIA V1.0 was to provide an updated fixed price for the PIT Build phase. The labour charges reduced by a further REDACTED (11.9%) as the volume of labour days required reduced

by 759 days (11.1%) to 6,082 labour days following further discussions and a review of the implementation effort required. The expenses charges reduced by a further REDACTED (12.5%) as a result of the reduced labour days. The Infrastructure expansion of PIT environments and PIT Build Support increased marginally by REDACTED (0.1%).

A further saving affecting expenses charges was also achieved but not recorded in the savings breakdown below as the continuation of the travel restrictions imposed by the UK Government starting in March 2020 continued to the end of the programme of activities. This saving of REDACTED impacted approximately 350 onshore labour days during March 2020 and June 2020, delivering further expenses savings of REDACTED.

Excluding working capital charges, this reduced the final cost of CR1262 to REDACTED a total saving of over 20.8% against the very initial price breakdown cost.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Table 21: Price Breakdown CR1262

Detail	Total Price (£)
Setup Labour Costs (see "Labour Breakdown - PIT Build" tab)	REDACTED
DSP Team Setup Expenses Based on agreed daily charge rates: REDACTED	REDACTED
Infrastructure expansion of PIT environments and PIT Build support	REDACTED
Total Setup Charges excluding Finance	REDACTED
Total (including finance costs)	REDACTED

Table 22: Initial vs Final Price CR1262

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	(20.7)

2.3.3 CGI – CR12663 (Switching DSP Consequential Changes – CSS SIT)

Drivers and Scope

Following the implementation of Faster Switching, the Central Switching Service (CSS) will become the sole source of Registration Data. Registration data is used by the DCC to:

- Assess a User's ability to receive certain DCC Services; and
- Calculate the charges payable by a Party.

The introduction of CSS will impact the existing Registration Data Interface and the data flowing through that interface.

CR1263 covers the System Integration Test phase activities for DSP:

- System Integration Test activities.

- Integration support including support for Triage, PIT application and infrastructure teams.
- Programme Management and Operations team support for the resources delivering the System Integration Testing and support.
- DSP SI Environment Management team to co-ordinate releases into the DSP test environments.

Securing Value for Money

The initial price for CR1263 (Switching DSP Consequential Changes (formerly CR1037) – SIT) was calculated to be REDACTED by CGI DSP. The preparation and CSS-SIT execution activity covered a 9-month period between January 2020 and September 2020. This Full Impact Assessment (FIA) V1.0 included 3,245 days of labour at a cost of REDACTED, expense charges of REDACTED and 68 ALM licenses over a 9-month period between January 2020 and September 2020 at a cost of REDACTED.

As a result of the travel restrictions imposed by the UK Government starting in March 2020 an expenses reduction of REDACTED per person per day was agreed with CGI. This impacted the period between March 2020 (25% or the equivalent of approximately 1 week) to June 2020 only at the time of submission of the Price Breakdown V1.0 by CGI DSP. This delivered a saving of REDACTED (35.0%) from 1,673 onshore labour days during the impacted period.

Following the initial Impact Assessment, DCC asked for a number of amendments and additions to the plan and scope of activities under this CR, including:

- Extension of Initial Integration Testing was required in order to have a sufficiently stable platform to commence Test Window 1
- Overall extended duration of SIT
- Removal of Maintenance windows and replacement with fortnightly releases from DSP
- Introduction of parallel testing between phases to limit the extent to which SIT duration was extended
- Reconsideration of the defect rates, defect fix times and retest rates needed to achieve SIT exit
- Reconsideration of the daily test run rates needed to achieve each SIT window
- Re-profiling of the resources needed to support SIT and respond to defects
- Recognition that dual fuel tests require approximately double the effort for DSP SIT testing as they result in two test runs for each test that is requested by the CSS-SI
- Re-assignment of tests between Test Windows
- Movement of the introduction of device testing between Test Windows
- Clarification of device requirements – now extended to include MOC Secure devices
- The introduction of witness testing for circa 20% of test scripts from CSS Regression window 1
- The re-profiling and need for a specific cycle of DSP System regression testing specifically for CSS, since CSS no longer exits SIT in tandem with November-20 release. As a consequence, CSS requires its own regression cycle and subsequent SEC governance
- Additional documentation deliverables supporting DSP System Regression, including a Witness Test plan and a Test Completion report.

CGI DSP provided the Final Impact Assessment (FIA) V2.0 and Price Breakdown V2.0 which had a total cost of REDACTED, representing a 2.7% increase against the Price Breakdown V1.0. The increase was all scope-related, the discount framework continued to apply, and we made further savings.

Despite the above amendments to the plan and scope of activities increasing the total duration of the CR by 4 months to January 2021, the labour charges only increased by a total of REDACTED as a result of keeping the incremental labour days required to just 159 over the whole period. The expenses charges reduced by a further REDACTED (65.0%) as a result of i) the travel restrictions reduction being extended to December 2020 along with ii) an increase in the value of the reduction from REDACTED to REDACTED (+18.5%) per onshore labour day. This value increase was backdated to the start of the activity. The volume of ALM licenses required decreased by 17.6% from 68 to 56 despite the extended duration of the work.

CGI DSP later submitted the Final Impact Assessment (FIA) V2.1 and Price Breakdown V2.1 which included working capital charges of REDACTED. This meant a cost increase of REDACTED (+5.1%) between the FIA V2.1 and V1.0.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Table 23: Price Breakdown CR1263

Detail	Total Price (£)
Setup Labour Cost (See Separate Breakdown)	REDACTED
HP ALM Licences	REDACTED
Core DSP Team Setup Expenses Based on agreed daily charge rates: REDACTED	REDACTED
Working Capital Charge	REDACTED
Total Setup Charges	REDACTED
Total Charges (excluding Finance)	REDACTED [21]

Table 24: Initial vs Final Price CR1263

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	**5.1**

As described above the increase in price was the result of significant additions to scope, increased duration of the contract by 4 months and the inclusion of working capital charges. Accounting for these factors would result in a significant like-for-like reduction between the Initial IA Price and the Final IA Price.

2.3.4 CGI – CR1264 (CSS – DSP Environments)

Drivers and Scope

CR1264 enables the CSS interface to be deployed into DSP's existing environments where these have not already been built. The scope of this CR is to build out SIT-A, UIT-A, UIT-B, Production and DR environments to support the DCC Data System aspects of CSS. New CSS Gateway components and CSS Azure connectivity will be added and configured within these environments. Without this change, it would not be possible to deploy the CSS interface to the relevant DSP environments.

At a high level, the scope under CR1264 covers:

- Build of CSS infrastructure components within existing DSP environments: SIT-A, UIT-A, UIT-B, Production and DR environment.
- Maintaining and supporting these environments up until the end of the current agreement.
- Maintaining and supporting the CSS infrastructure components added to PIT and SIT-B under CR1262 and connectivity added under CR1266 from April 2020 up until the end of the Initial Term.

[21] Separate to CR1263, CR4033 was raised to cover the delays in the Switching programme and the knock-on impact this had on the CGI DSP work and the requirement for labour over a longer period. The value of CR4033 is below the materiality threshold i.e., REDACTED. Together with CR1263, CR4033 falls under CGICAN171 part A which has a total combined value of REDACTED .

- Establishing connectivity to the CSS Service Provider systems for in scope environments, where this is not already covered by CR1266, including CSS Azure resilient connectivity implementation.
- SI and TRT effort for SIT-A, UIT-A, Production and DR.
- UIT Projects team support for TRT Level 3 for UIT-A and UIT-B.
- Security Assurance activities associated with the in-scope environments including penetration testing and a protective monitoring uplift for UIT and Production environments.
- Express Route capacity management.

The period of cover under this CR is between 1 April 2020 and 31 October 2021.

Securing Value for Money

The initial price for CR1264 was calculated to be REDACTED by CGI DSP. The activity covered a 19-month period between April 2020 and October 2021. This Full Impact Assessment (FIA) V1.0 included 1,060.5 days of labour at a cost of REDACTED, expense charges of REDACTED and infrastructure setup charges of REDACTED.

As a result of the travel restrictions imposed by the UK Government starting in March 2020 an expenses reduction of REDACTED per person per onshore day was agreed with CGI. This impacted 182 days during the period August 2020 to December 2020 only at the time of submission of the Price Breakdown V1.0 by CGI DSP. This delivered a saving of REDACTED (13.6% against the standard expenses charging calculation).

CGI DSP provided the Final Impact Assessment (FIA) V1.1 and Price Breakdown V1.1 which had a total cost of REDACTED, representing an 8.7% saving against the Price Breakdown V1.0. The labour charges reduced by REDACTED (3.2%) from REDACTED to REDACTED following savings delivered by a reduction in governance team resource following a challenge. With the travel restrictions expected to continue into 2021, it was agreed the REDACTED expenses reduction should continue to the end of March 2021. This increased the total expenses saving to REDACTED (16.0% against the standard expenses charging calculation). The total infrastructure setup costs decreased by REDACTED from REDACTED to REDACTED following a significant removal of third-party charges amongst other savings following challenges to these costs.

Excluding working capital charges, this reduced the final cost of CR1264 to REDACTED a total saving of over 9.6% against the initial impact assessment cost. Once the working capital charges of REDACTED were added, a total saving of 8.7% was achieved against the very initial impact assessment.

A further saving affecting expenses charges will also be likely achieved but not recorded in the savings breakdown below as the continuation of the travel restrictions look to continue to the conclusion of the programme of activities in October 2021. This will impact a further 830 onshore labour days from April 2021 to October 2021, delivering further expenses savings of REDACTED representing a 79% reduction.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Table 25: Price Breakdown CR1264

Detail	Total Price (£)
Total Applications and Security Implementation Labour	REDACTED
Core DSP Team Setup Expenses – based on agreed daily charge rates and discount for period Apr'20 to Mar'21 inclusive	REDACTED
Total Infrastructure Setup Costs	REDACTED
CR1264 Working Capital Charge (WCC)	REDACTED

CR1262 Infra Net off (DCC Paid for this in June 2020)	REDACTED
CR1262 WCC Net off (DCC Paid for this in June 2020)	REDACTED
Total Setup Charges Excluding WCC and Finance	REDACTED

Table 26: Initial vs Final Price CR1264

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	**(8.7)**

III. Network Evolution – RY20/21 Variances Overview

Cost Centre Variance in RY20/21 by GL

The table below provides a breakdown of incurred and forecast costs in price control format i.e. mapping costs directly against the price control General Ledger codes (GLs).

Baseline (£m)		RY20/21	RY21/22	RY21/22
Total Network Evolution		**2.241**	**1.736**	**-**
Payroll costs	PR	2.133	1.653	-
Non-payroll costs	NP	0.086	0.083	-
Recruitment	RC	0.022	-	-
External Services	ES	-	-	-
Incurred (£m)		**RY20/21**	**RY21/22**	**RY21/22**
Total Network Evolution		**7.706**	**10.627**	**4.155**
Payroll costs	PR	5.453	8.524	3.921
Non-payroll costs	NP	-0.001	0.188	0.154
Recruitment	RC	0.021	0.092	-
External services	ES	2.233	1.823	0.080
Variance (£m)		**RY20/21**	**RY21/22**	**RY21/22**
Total Network Evolution		**5.464**	**8.891**	**4.155**
Payroll costs	PR	3.320	6.871	3.921
Non-payroll costs	NP	-0.087	0.105	0.154
Recruitment	RC	-0.001	0.092	-
External services	ES	2.233	1.823	0.080

Cost Centre Variance by Staff Type and Team

The table below shows the payroll variance by sub-team within the Network Evolution cost centre.

Network Evolution Payroll Costs (£m)	RY20/21	RY21/22	RY22/23
Baseline	**2.133**	**1.653**	**-**
Commercial and Regulation	-	-	-
Design and Assurance	0.260	0.232	-
Operations	0.230	0.230	-
Security	0.112	0.112	-
Service Delivery	1.297	0.785	-
Testing	0.234	0.294	-
Incurred	**5.453**	**8.524**	**3.921**
Commercial and Regulation	0.996	2.464	0.648
Design and Assurance	0.560	0.237	0.133
Operations	0.650	1.252	0.853
Security	0.196	0.325	0.321
Service Delivery	2.597	3.558	1.827
Testing	0.455	0.688	0.138
Variance	**3.320**	**6.871**	**3.921**
Commercial and Regulation	0.996	2.464	0.648
Design and Assurance	0.300	0.005	0.133
Operations	0.420	1.023	0.853
Security	0.084	0.213	0.321
Service Delivery	1.300	2.773	1.827
Testing	0.220	0.394	0.138

3 Network Evolution

3.1 Purpose, Scope and Structure

3.1.1 Purpose and Scope

Overview and benefits

The Network Evolution Programme focuses on the future of DCC operations in the smart metering environment but will also deliver benefits for wider programmes. It explores how new process, systems and technologies can improve the live service, reduce the operating costs of the DCC system, and, above all, secure the continuity of a critical part of the UK's national infrastructure.

The Network Evolution programme is driven by the obsolescence of certain digital technologies and the advances of others 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 Data Services Provider (DSP) service with CGI is coming to an end and must expire by October 2024. The first of a maximum of three one-year extensions is now being negotiated.
- The existing 2G/3G networks, in use in the South and Central regions, have been superseded by the introduction of 4G networks, with 5G on the horizon. There is a high probability that the older networks will no longer be supported or maintained in the medium term and the DCC will need to modernise its communications provisions accordingly.
- SMETS1 and SMETS2 assets have a 15-year life, so the earlier enduring technology can be made available in the ecosystem, the lower the amount of scrappage and the longer the economic life of assets.
- REDACTED 's contract for the Smart Metering Key Infrastructure (SMKI) security service, also known as Trusted Service Provider (TSP), was due to expire in April 2022. A new tactical solution has been implemented on a 3 year plus 1 year possible extension agreement whilst 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.

Network Evolution aims to ensure that customers are obtaining value for money at all times and the opportunities that the procurements present for competition are integral, such that all service providers are continually subjected to competitive pressures. We have agreed the Communication Hubs & Networks (CH&N) outline business case with BEIS, the SEC Panel and SEC sub-committees and continue to engage with customers as we prepare the final business case for BEIS' consideration whilst we develop the outline business case for Network Evolution DSP.

3.1.2 Programme Structure

The programme comprises of four distinct sub-programmes:

- **Network Evolution DSP:** 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 Data Services Provider (DSP) to de-risk and speed up the overall re-tendering activity.
- **Network Evolution Communication Hubs & Networks (CH&N):** Designing and procuring future-proof communications hubs & networks. We require a technology with a longevity of at least 15-20 years so that the full benefit of the Communication Hub assets' operational life is realised from the

point of installation. should also have the optionality of roaming and switchable capability to increase resilience and minimise industry costs and inconvenience to the end consumer.

- **Network Evolution Trusted Services Provider (TSP):** Procure a replacement to the Smart Metering Key Infrastructure (SMKI) security service in a cost-effective way. This started in RY20/21 with a tactical re-platforming of existing SMKI services to ensure business continuity; activity to address the longer-term TSP requirements will start in RY21/22.
- **Network Evolution Test Automation:** Designing and implementing automated testing of the SEC releases to achieve faster and lower-cost testing with additional enhancements to Unit Integration Test (UIT) Proving that will allow DCC to confirm the efficacy of changes.

Timescales

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

- The existing DSP contract has been extended to provide continuity of service while the DCC works with customers to define what the future business, technology and security landscapes, opportunities and challenges look like over the next 10+ years and consults with industry on the future services to be delivered. New DSP functionalities will be procured to be built, tested and deployed at the earliest opportunity, and by October 2024 at the latest. The DCC will consult on an LC13 plan for this activity in September 2021.
- CH&N is at the shaping stage and DCC are running a procurement for 4G Single and Dual Band Communication Hubs that will come to market in 2023, and the capability to upgrade this with further services such as roaming and switching soon after. The DCC has now consulted on and published an LC13 timetable for this sub programme.
- The TSP Programme has concluded an investigation phase including collaborative discussions with the National Cyber Security Centre (NCSC) resulting in a short-term activity to re-platform the TSP Service and extend the current REDACTED contract plus a longer-term programme to support security needs from 2025 onwards.
- Our test automation and robotics workstream is currently running an active procurement exercise against an agreed design with a target deployment in spring 2022. This will enable 24/7 working and a significant reduction in the time and cost to complete regression testing.

Timescales for next-generation Communications Hubs, re-platforming of the TSP services and test automation are relatively well established, precise timescales are yet to be confirmed for some of the milestones that are further out, as they are dependent on negotiations with the supply chain and contract signature.

Programme Structure

The Network Evolution programme structure consists of a Network Evolution Programme Director, a Deputy Programme Director and two Programme Managers heading up delivery teams for the 4 programmes. These delivery teams are made up of project managers with architects, business analysts, commercial business partners, design SMEs, regulatory analysts and others on a dedicated or shared basis as required. Where one programme utilises less than all of a person's time, the preference is to use their remaining time elsewhere in Network Evolution programme to benefit from synergies.

In addition to these programme teams, Network Evolution has a PMO under a PMO Manager that spans the whole of the Network Evolution programme. The PMO ensures that programmes follow the DCC's Change Delivery Model (CDM) and best practice on aspects such as planning, and risk and issue management. PMO staff support programme and project managers in coordinating resource management across the programme.

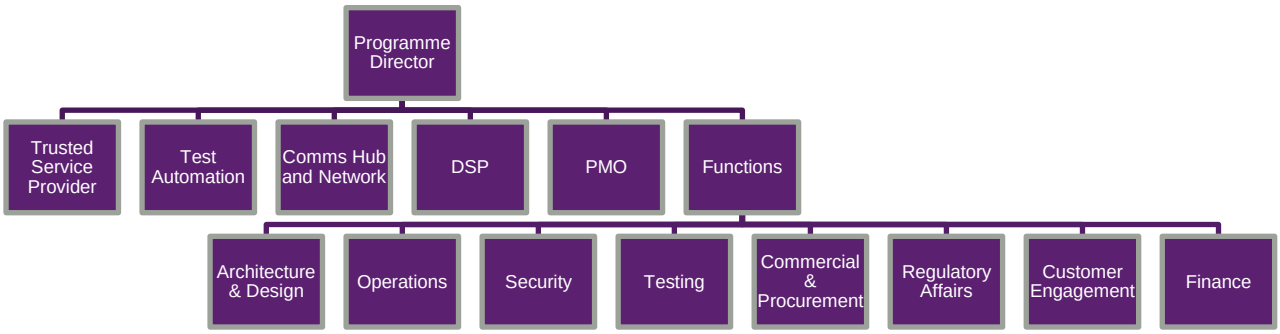
The Network Evolution programme's structure also includes senior leaders from key functions within DCC with a remit to support across all of the programmes. These include:

- Head of Strategic Customer Engagement
- Director of Architecture and Design
- Head of Service Transition, Operations
- Information Security Officer

- Test Director (Test Design and Assurance)
- Finance Business Partner
- Senior Regulatory Business Partner
- Procurement Manager (Commercial)
- Head of Legal

At the end of RY20/21, the programme structure was as follows:

Figure 5 – Programme organisational structure



It should be noted that the sub-team structure within the Payroll system does not match the functional team structure illustrated in the figure above. The mapping between the two is presented in the table below. The table provides the overview of the Network Evolution programme during RY20/21 and a description of the functional sub-teams within the structure.

Sub-team RY19/20	**Current Sub-team RY20/21**	Payroll sub-team	**Description**
Architecture and Design	Architecture and Design	Design and Assurance	Architecture and Design – expertise on technical direction and definition of the technical solutions, platforms and methodologies to address current problems in delivering services and to facilitate the move to a future landscape that takes advantage of technical advances and that will persist for the next phase of DCC. Ensures the integrity of the DCC solution architecture, ensuring that new functionality and changes to the architecture are fit for purpose and comply with the standards necessary to maintain a robust, consistent and integrated technical infrastructure.
Service Design	Operations	Operations	Ensures that processes required to support the future DCC service and technical landscape are coherent, efficient and properly defined to meet the needs of in-life operations, including SLAs. This includes the processes that customers will need to use to access and operate DCC services. Much of the Operations involvement in RY20/21 was to define requirements and business needs.
Security	Security	Security	Responsible for making sure that any technical, data or process changes are compliant with all security protocols and tested appropriately. Owns the relationships with the National Cyber Security Centre (NCSC) and the SEC Security sub-committee for Network Evolution.

Test Assurance	Testing	Testing	Testing - expertise to ensure that testing methodologies and tools in the future DCC landscape are fit for purpose and utilise best practice.
Commercial	Commercial & Procurement	Commercial and Regulation	Set the commercial strategy and lead on supplier engagements and negotiations as Network Evolution will extend and replace the key SMETS2 foundation contracts. Ensure that all procurement conforms to the regulated conditions. Lead Requests for Information (RFIs) and Invitations to Tender (ITT) to understand the market and to procure services.
Regulatory Affairs	Regulatory Affairs	Commercial and Regulation	Ensure that Network Evolution programme is delivering in line with DCC Licence Conditions, and proposed changes are understood and supported by BEIS and Ofgem as applicable. In addition, particularly in its early phases, the Network Evolution programmes need to engage and consult heavily with BEIS, customers and industry to understand existing problems and future needs and to ensure that DCC proposals are understood and supported. The Regulatory Affairs team supports Network Evolution to deliver this BEIS, customer, industry and SECAS engagement. The Regulatory Affairs team also manages any regulatory consultations for the programme, such as on the LC13 plans.
Legal	Legal	Commercial and Regulation	Guidance and oversight of legal and compliance issues and drafting of contracts. Detailed legal support is contracted to an external law firm under the oversight of the Head of Legal.
	Customer Engagement	Commercial and Regulation	The customer engagement team are responsible for planning, managing and executing programme interactions with customers, including fora such as SEC Panel and committees and Energy UK and directly with customers. This is to ensure that customers are sighted on the programme and that the programme gets necessary input including to guide decisions on scope and business cases. A subset of the customer engagement team has led on the development of the LC16 business cases for the programme that are required by BEIS.
Finance	Finance	Commercial and Regulation	Finance Business Partner from Chief Financial Officer (CFO) office – includes budgeting, forecasting and tracking of actual spend and support on business cases.

3.2 Drivers for Variance – Resource

The Network Evolution payroll is outlined below. There has been some variance to baseline in 5 teams in RY20/21 and some future expected variance in the majority of the teams.

Three key changes occurred in Network Evolution after RY20/21 forecasts were made that drove variances across multiple teams:

a) The CH&N forecast was predicated on the assumption that DCC would be able to procure the 4G equipment and services without a full competitive process. This turned out not to be the case, particularly once LC16 was amended, and the Invitation to Tender (ITT) procurement now in progress is significantly

larger and more complex than any the DCC had previously undertaken. There was no DCC template for the scale and nature of such a procurement and it required very significant levels of resource from the Commercial and Procurement teams to define, create and secure approvals for the Invitation to Tender (ITT). This drove the high level of Commercial and Procurement activity seen in RY20/21 with associated project and programme team resource requirement. Note that it also drove higher than anticipated legal costs in RY20/21. (see additional information below).

b) Licence Condition 16.6 (LC16.6) was introduced by BEIS in the final week of RY19/20 and requires the DCC to submit a Business Case for programmes over £10m to BEIS for approval or gain an exemption from the Secretary of State. This affected the 3 major programmes within Network Evolution – CH&N, DSP and TSP. In the case of TSP the Regulation team secured an exemption for the tactical solution, but business cases in line with Her Majesty's Treasury (HMT) Green Book Standard are required for CH&N and DSP. All of this activity required high levels of resource input across the Network Evolution programme. BEIS have recently confirmed that test automation will also require an LC16 business case in RY21/22

c) In August 2020 the TSP supplier (REDACTED) informed DCC that the REDACTED platform they use for SMKI will go out of service in April 2022. At this stage DCC and REDACTED were already in discussions about exercising an option in the contract to extend the service to 2024, which was the assumption in the forecast. This meant that DCC needed to mobilise the TSP programme, incurring resource and 3rd party spend.

The explanations of how these and other changes impacted resource demand in each area are set out by team below.

The Price Control certainty threshold means that items must be 'more certain than not' to occur before they are placed in the Price Control forecast. During the forecasting process in RY19/20 prior to the commencement of RY20/21, the LC16.6 requirement had not yet been authorised by BEIS and as such DCC's forecasting was extremely conservative. This manifests in some variances that appear high but are in fact in line with what DCC would have expected to spend on this activity.

Table 27 – Resource Variance

Network Evolution Payroll		RY20/21	RY21/22	RY22/23
Total Baseline	**£m**	**2.133**	**1.653**	**-**
Total Incurred	**£m**	**5.453**	**8.524**	**3.921**
Total Variance	**£m**	**3.320**	**6.871**	**3.921**
Commercial and Regulation	£m	0.996	2.464	0.648
Design and Assurance	£m	0.300	0.005	0.133
Operations	£m	0.420	1.023	0.853
Security	£m	0.084	0.213	0.321
Service Delivery	£m	1.300	2.773	1.827
Testing	£m	0.220	0.394	0.138

3.2.1 Commercial and Regulation

The Commercial and Procurement teams set commercial strategy and lead on supplier engagements and negotiations, ensuring that all procurements conform to regulatory requirements. They lead Requests for Information (RFIs) and Invitations to Tender (ITT) to understand the market and to procure services.

The Regulation team ensures that Network Evolution programmes are in line with DCC Licence Conditions, and proposed changes are understood and supported by BEIS and Ofgem as applicable.

Activities driving change in resource in RY20/21

LC16.6: This Licence Condition was introduced by BEIS after the RY20/21 forecast was created. The Regulations team was needed to secure an exemption for the TSP programme and to support interactions with BEIS on the business cases for CH&N and DSP. The Regulation team and a subset of the customer engagement team led the effort to understand what BEIS required for each programme, undertook liaison

and collaboration with BEIS on producing the Outline Business Case (OBC) for CH&N – which was submitted in December 2020, and commenced the Strategic Outline Business Case (SOBC) for DSP. The Commercial team was required to write and liaise with BEIS on the Commercial Strategy element that is required under the HMT Green Book methodology.

CH&N Programme:

ITT: In RY20/21 the CH&N programme prepared and launched a major Invitation to tender (ITT) to procure new 4G Communications Hubs and associated services worth circa £1.9bn over the life of the contracts. The forecast assumed that these would be procured directly with suppliers, however the resulting ITT required a much higher level of input than forecast. The team was required to create the Commercial Strategy and Procurement Approach, to define and assure the ITT process and to create and assure the ITT documents before the ITT was issued to bidders in December 2020. The Procurement team then managed and supported the evaluation and moderation of bidder responses starting in February 2021.

LC13B: In January 2021 BEIS directed DCC under LC13B to submit plans that had been subject to consultation for the CH&N and DSP programmes. As a result, the Regulation team led the CH&N programme in preparing a consultation document that was published in April 2021. This work continues into RY21/22 for both CH&N and DSP.

TSP Programme:

The TSP programme was mobilised with a rapid procurement exercise with existing TSP supplier REDACTED to re-platform the SMKI service which was approaching end-of-life and extend the existing contract to 2025. This required Commercial and Procurement resources as well as Regulatory Affairs support to gain an exemption from LC16.6 from BEIS for the programme.

Activities driving change in resource in RY21/22 and RY22/23

LC13B: The consultation that was launched at the end of RY20/21 for CH&N completes in RY21/22, after which BEIS will add milestones to the Joint Industry Plan. A similar consultation and submission process are required for the DSP programme in RY21/22.

CH&N Programme

ITT: The procurement of 4G Comms Hubs and associated services that started in December 2020 continues until Q4 RY21/22 when the final contracts are due to be awarded. This requires a high level of resource from the Commercial and Procurement teams to evaluate and moderate bidder responses, oversee the 'Downselect' stages, create and manage the Best and Final Offer (BAFO) stage and identify the preferred Bidders who will be awarded the contracts. The Commercial team is also involved as Subject Matter Experts (SMEs) on key Commercial Principles and contract matters and will then prepare and lead negotiations in the BAFO and final negotiation stages.

DSP Programme:

LC16.6: As above, work continues into RY21/22 on the SOBC for DSP, which will be submitted to BEIS following customer review in July 2021. This will be followed by production of the OBC for DSP later in RY21/22 and into RY22/23. The Final Business Case for the CH&N programme must be produced and submitted in Q3 RY21/22. Further Business Case work will also be required for Test Automation in RY21/22 and work is commencing on the documentation for the longer-term TSP. Both the Regulatory and Commercial teams are required to support the Business Case development.

Procurement: The DSP programme will run a "Request for Information" (RFI) to test the market for the services required to replace the current DSP and will then launch a major procurement in RY21/22 that will conclude in RY22/23 to procure ongoing DSP services to replace the current DSP contract that expires in 2024. The Commercial and Procurement teams will create and execute the RFI and then develop the Procurement Strategy, manage the creation, issue and execution of the ITT that will result in contracts being placed with the winning bidders.

3.2.2 Design and Assurance

This covers the architects and design authority to create and assure the design of systems and processes to deliver the Network Evolution Programmes.

Activities driving change in resource in RY20/21

Design and Assurance were key to a number of activities across Network Evolution In RY20/21, including:

i. Developing the designs for the CH&N programme, agreeing them with BEIS and SEC Committees (TABASC, OPSG and SSC), and defining them to a level of detail required for the ITT that was launched in December 2020.

ii. Supporting the workstreams that ran alongside the procurement of 4G Comms Hubs and services in RY20/21 to ensure that all other parts of the end to end system are designed and procured, and that procured services are successfully delivered. These workstreams require Design and Assurance resource and include the DSP Gateway changes required to support 4G alongside the current 2G/3G services, and test and transition approach.

iii. Supporting the Test Automation Framework (TAF) project as it went through an ITT and then absorbed the Production Proving element that was brought into scope.

iv. Supporting discussions with REDACTED on SMKI re-platforming that was required under the TSP programme due to the end-of-life issue notified by REDACTED on the current platform.

v. Providing oversight of the technical direction of the Network Evolution DSP programme in the "investigate" stage, including sponsoring and supporting external studies on the future technical and usage requirements landscape for DSP services, and support for requirements gathering and defining the business case.

3.2.3 Operations

DCC Operations supported Network Evolution in RY20/21 through its Service Design and Enterprise Architecture functions as well as in providing Subject Matter Experts (SMEs) from its Business As Usual (BAU) teams to support requirements gathering.

The Service Design team ensures that processes required to support the future DCC service and technical landscape are coherent, efficient and properly defined to meet the needs of in-life operations, including SLAs. This includes the processes that customers will need to use to access and operate DCC services.

The Enterprise Architecture (EA) team ensure consistency of overall DCC systems architecture, including considering the impacts of adding new 4G technology, and considering the long-term evolution of technology on DCC architecture.

Activities driving change in resource in RY20/21

Service Design was particularly important for the Comms Hubs and Networks programme in RY20/21 which had to design and build requirements for the future operating model as 4G services are introduced that will run alongside existing 2G/3G services and continue when those existing services end.

The Enterprise Architecture team was part of Operations in RY20/21 and supported the Comms Hubs and Networks and the DSP programmes. In particular, the Comms Hubs and Networks programme required support as it introduced new 4G technology into the existing landscape, and the DSP programme needed EA input in considering the long-term technology needed to run DSP services over a 10 – 15 year horizon in the face of technology change and the changing types and volumes of traffic that it needs to support.

A number of Operations' Subject Matter Experts in areas including Logistics and Service Transition were required to support the Comms Hubs and Networks programme. Activities in RY20/21 included supporting the development of the business case, in particular the Strategic Case and the Management Case and in defining and assuring the requirements for the ITT. Operations also ramped up activity to support the strategy and approach for System Integration and System Engineering of the programme.

Activities driving change in resource in RY21/22 and RY22/23

The main driver of change in demand for Operations resource in RY21/22 and RY22/23 is the increased understanding of what will be required for the DSP programme once it is live. The DSP programme is in Stage 1 ("Investigate") of the DCC's Change Delivery Model, which entails defining the business case and requirements of the programme. This is giving clarity on what will be needed in subsequent years and firming up the near-horizon years.

3.2.4 Service Delivery

Service Delivery includes the Programme Director, Programme Managers, Project Managers, PMO and Business Analysts (BAs) required to deliver the programme. Project Management increased as expected across the Network Evolution Programme as programmes within it moved through the CDM stages. Business Analysis is particularly important for gathering requirements for programmes in the "Investigate" and "Define" stages as Network Evolution programmes were in RY20/21.

Activities driving change in resource in RY20/21

The structure of Network Evolution with its 4 programmes was established in RY19/20 but it operated and was resource at a very high level from the start of RY20/21. As it has grown and progressed in line with the CDM requirements, the resourcing model has changed. The largest programmes, CH&N and DSP, were in CDM Stages 1 and 2 ("Investigate" and "Shape") respectively through the year with the emphasis on business case creation, requirements gathering and assurance requiring heavy use of BAs. The TSP programme had to ramp-up activity and move through stages 0, 1 and 2 ("Identify", "Investigate" and "Shape") more quickly than anticipated when the TSP supplier (REDACTED) notified DCC of the platform coming to the 'end-of-life' phase earlier than expected. Demand for Service Delivery resources was driven by:

Comms Hubs and Networks Programme:

- Procurement: Based on legal advice received on its Licence Conditions and procurement law, the DCC decided to competitively procure the services required to introduce 4G comms hubs to GB Smart Metering. This required a major "Invitation to Tender" (ITT) that was launched to bidders in December 2020. This required extensive work to capture and assure a very detailed set of circa 1,800 requirements, which demanded significant use of Business Analysis resource.
- Business Case: At the start of RY20/21, BEIS took powers under LC16 to approve the Business Case for major DCC programmes. This required the Outline Business Case (OBC) that was developed at Gate 1 (December 2019) to be re-created to Her Majesty Treasury (HMT) "Green Book" standards. The resulting OBC was then approved by BEIS in December 2020.
- Project Management: The programme added three PMs as it ramped up activity in RY20/21. These were responsible for overseeing the Business Case and procurement processes, requirements gathering, and the test strategy and transition approach. PM activity in each workstream included creating and maintaining plans, identifying and managing Risks, Issues, Assumptions and Dependencies, resource planning, coordinating input from across DCC and managing internal and external (BEIS, SECAS) stakeholders through reports, presentations and discussions.

DSP Programme:

- Requirements: Business Analysis added for gathering requirements, starting with the SEC requirements.
- Programme and Project Management: The DSP programme manager also covered the Test Automation Framework (TAF) project up until January 2020 and then became full-time on DSP as activity ramped up.

TSP Programme:

- Project and Programme Management: The programme was mobilised and added one Project Manager (PM) and ½ Programme Manager (ProgM) as it had to quickly move through CDM gates 0 and 1 in response the DCC being notified of the end-of-life issue on the SMKI (security certificates) platform. The Programme Manager had overall responsibility for establishing and advancing the programme, including liaising with the Senior Responsible Officer (SRO) and Supplier Management to create the business case, identify options, agree the preferred options and then procure it. The Programme Manager also worked with Regulatory Affairs to present an exemption from LC16.6 to BEIS. BEIS approved this approach. This exemption enabled the programme to pass CDM Gate 2 and place contracts for re-platforming SMKI, extending the service at the end of March in RY20/21. The PM created and maintained plans, identified and managed Risks, Issues, Assumptions and Dependencies, and worked with functional leads to plan resourcing.

- Business Analysis: BA support was required to capture and assure requirements to support the procurement of re-platforming and negotiation of the contract extension.

Test Automation Framework (TAF) Project:

- PM and BA resource had to be extended after a Request for Proposals (RFP) in Q1 – Q2 RY20/21 had to be stopped when the winning bidder incurred a Health and Safety breach on an existing DCC contract and the contract could not be awarded. Additional scope was added to TAF in Q3 when synergies with another DCC programme – Production Proving – were identified and transferred into Network Evolution through a CR. The RFP was re-created to reflect the new scope and launched at the end of RY20/21.

Activities driving change in resource in RY21/22 and RY22/23

All 4 Network Evolution Programmes and Projects continue into RY21/22 at their higher activity levels; TAF and TSP will require the current level of Programme and Project management to complete delivery in early RY22/23, while CH&N and DSP will ramp-up further as they enter the 'Develop' and 'Shape' phases respectively in RY21/22 and continue progression through RY22/23.

The DSP Programme will require increased Business Analysis resource in RY21/22 to capture and assure requirements ahead of the procurement and business case development.

3.2.5 Testing

The Test Assurance team is responsible for ensuring that testing across DCC programmes and releases is set up and executed correctly to ensure that services meet the requirements and design and are free of defects when launched in production. Test Assurance supports Network Evolution in early stages of programmes by defining Test Approaches and Strategies, secondly, providing support to the procurement of test services and finally by assuring the testing activity conducted by the appointed suppliers.

Activities driving change in resource in RY20/21

- Comms Hubs and Networks Test Strategy and Approach: Test Assurance supported the programme in defining a new testing approach. This approach is based on lessons learned from previous DCC programmes and aims to find defects in earlier test stages through better structured tests and use of real devices. The approach received a positive reception from the SEC Test Advisory Group (TAG).
- Test Automation Framework (TAF) Project: Test Assurance resource was required to revise requirements when the additional scope of the Production Proving project was transferred into the project via a change request and the RFP was re-run.
- TSP: The TSP programme defined the test strategy and approach for TSP re-platforming as required activity in CDM Stage 1.

Activities driving change in resource in RY21/22

Activity requiring Test Assurance resource continues to grow through RY21/22 as the activities above continue.

- CH&N Programme: The ITT will conclude in RY21/22 with Test Assurance resource required as Subject Matter Experts (SMEs) to support the selection of preferred bidders. Test Assurance are also supporting the procurement of testing services, the continuing development of the Test Strategy, including taking it through the TAG and TDEG groups for their approval, and supporting a consultation on a SVTAD (Service Variation Test Assured Document) required to ensure that the test approach meets regulatory requirements. Test Assurance will then be required to assure testing at all stages when the design, build and test activity starts in Q4 RY21/22 and continues through RY22/23.
- DSP: The programme will develop its Test Strategy and launch the RFI and ITT in RY21/22. Test Assurance will lead on the former and support as SMEs in specifying requirements and then evaluating bidder responses on the latter. The ITT will continue through to RY22/23 when Test Assurance will also contribute to the procurement of test services and preparing the Design, Build and Test phases.

- TSP: Test Assurance will ensure that testing is completed to standard as REDACTED delivers its new platform which will then go through System Integration and other test phases.
- Test Automation: Test Assurance will continue to act as SMEs in the ITT process to identify the preferred bidder and place contracts, and then ensure that planned testing activity is completed to standard when the supplier delivers the services in Q4 RY21/22. It will also a require an LC16 busines case.

3.2.6 Security

Responsible for making sure that any technical, data or process changes are compliant with all security protocols and tested appropriately. Owns the relationship with the National Cyber Security Centre (NCSC) and the SEC Security sub-committee (SSC) for Network Evolution.

Activities driving change in resource in RY21/22 and RY22/23

Comms Hubs and Networks: Security continues to support the programme as SMEs to define security requirements for the new services being procured, and to evaluate Bidder responses. They are also ensuring that the programme requirements are understood and approved by the SEC Security Sub-Committee.

DSP: Security will support the programme as SMEs to define security requirements for the new services being procured, and to evaluate Bidder responses. They are also ensuring that the programme requirement are understood and approved by the SEC SCC.

TSP: Security has a particularly important role on the TSP programme as it delivers the re-platformed SMKI services. This includes liaising with the supplier (REDACTED) as well as the NCSC and SEC SCC to ensure that the re-platforming is reviewed, understood and accepted.

3.2.7 Non-payroll Costs Variance

There is a non-payroll cost variance forecast in RY22/23, this is caused by the disallowance of third year costs. There is no major change in expected activity.

3.3 Drivers for Variance – Non-Resource

3.3.1 Summary

Network Evolution has led multiple procurements in the past year to support the work of the programme, four are above the materiality threshold of £150,000 in RY20/21 one is expected to incur more than £150,000 variance in RY21/22. The breakdown is provided below.

Variance (£m)			RY20/21	RY21/22	RY21/22
Total Network Evolution			**5.464**	**8.891**	**4.155**
Payroll costs	PR	£m	3.320	6.871	3.921
Non-payroll costs	NP	£m	-0.087	0.105	0.154
Recruitment	RC	£m	-0.001	0.092	-
External services	ES	£m	2.233	1.823	0.080
IT Services	IT	£m	0.000	-	-

As outlined in the Resource section above, the Price Control certainty threshold means that items must be 'more certain than not' to occur before they are placed in the Price Control forecast. During the forecasting process in RY19/20 prior to the commencement of RY20/21, the LC16 requirement had not yet been authorised by BEIS and as such DCC's forecasting was extremely conservative. This manifests in some variances that appear high but are in fact in line with what DCC would have expected to spend on this activity.

Table 28: Material variance for External Services in Network Evolution

	Incurred (£m)		RY20/21	RY21/22	RY22/23	
	Total Incurred External Services	**£m**	**2.233**	**1.823**	**0.080**	
	Variance (£m)		**1.945**	**-**		
	Total Variance External Services	**£m**	**1.771**	**1.823**	**0.080**	
GL	**Variance (£m)**		**RY20/21**	**RY21/22**	**RY22/23**	**Procurement Type**
ES	Legal Advice/Support REDACTED	£m	**0.885**	-	-	REDACTED
ES	NextGen Design Assurance REDACTED	£m	**0.172**	-	-	REDACTED
ES	Future of the DSP study REDACTED	£m	**0.280**	-	-	REDACTED
ES	Specialist support REDACTED	£m	**0.311**	**0.252**	0.080	REDACTED
ES	SMKI Solution/TSP REDACTED	£m	0.123	**1.571**	-	REDACTED

Legal Advice/Support – REDACTED

Driver for the Procurement

The Comms Hubs and Networks Programme launched a major Invitation to Tender (ITT) in December 2020 to procure 4G equipment and services worth at least £1.9 billion over the life of the contracts. The ITT is divided into two Lots, each covering Communications Hubs, Device Manager, Wide Area Network and Logistics (Lot 1 on an aggregated basis i.e. single bidder outcome, Lot 2 on a disaggregated basis i.e. multiple (4x) contract outcome.

As a regulated monopoly, DCC must comply with its Licence obligations as regards procurement activity and ensure that the procurement produces contracts which effectively flow-down DCC's responsibilities under the SEC and deliver safe, robust and secure communication hubs for insertion into millions of energy consumer homes, together with related communications services and infrastructure, with appropriate risk allocation between DCC, bidders and the wider energy industry.

Significant legal guidance and advice was needed to ensure that the risks of legal challenge were minimised in the way the CH&N services were procured and then to ensure that the ITT adheres to relevant procurement law and DCC Licence conditions, and that it was defined and described in a way that is fair, clear and transparent and that both reduces the risk of any legal challenge to the process and increases DCC's likelihood of success if there were to be a challenge.

Specialist legal input was also required on the contract schedules that will form parts of the resulting contracts that successful bidders are being asked to sign up to. With a contract of this size, had we not managed the ITT and contracting process extremely robustly and in accordance with best practice, we could have found ourselves subject to damages claims that would have dwarfed any expenditure on ex-ante legal assurance of the documentation and process, or sever programme delays whilst challenges were addressed that would have undermined the overall SMIP business case. Our considered view was that the investment in legal advice was by far the most economic and efficient option on behalf of our customers.

After the ITT was launched further legal support was needed in the execution of the ITT. This included directly supporting some parts of the process – e.g. participation in moderation sessions to ensure that the process was correctly followed and recorded in a way that is clear and withstands scrutiny in the event of challenge. REDACTED also performed legal assurance of the 'down selection' process before bidders were advised of the outcomes.

This work continues into RY21/22 as the successful bidder(s) contract processes are progressed, including adapting the contract schedules agreed during the earlier phase. The contracts are for significant value over a period of 15 years, as such it is essential that the contracts are watertight

and represent the best interest for DCC's customers, as we are negotiating these contracts on their behalf.

Securing Value for Money

Given the need for specialist legal support in areas of procurement and competition law compliance and technology contracts, the importance of legal work and a compliant procurement to the achievement of the programme timetable, the need for ad hoc specialist support (in areas such as intellectual property, data protection and TUPE) as well as the need to manage transition from legacy contracts to new suppliers, DCC appointed external solicitors to provide legal support that was commensurate with the risks presented in such an important procurement and proportionate to the value and risk profile of the procurement activity and programme. It would not have been possible or appropriate to service such a major procurement via in-house legal resource, particularly in light of wider business demands and the need for specialist support.

External legal support was therefore procured via a competitive procurement, via law firms with the requisite expertise in a major programmes of this nature. REDACTED were ultimately selected via this process.

The Commercial evaluation of the bidders focused upon day rates and discounts that may be applied by the supplier should certain spend thresholds be met rather than fixed price. This call-off structure was designed to offer best value for DCC, to enable DCC access to the services under the contract as the need arose and not be bound by fixed cost, while ensuring that an appropriate cost reduction was achieved in line with the volume of usage. Our assessment was that because of the uncertainty of the volume of support DCC would need during the process, it was more economic and efficient not to opt for a fixed price contract which could have been significantly more expensive had our need proven to be lower than anticipated.

Table 29: Legal Advice/Support for the CH&N Procurement Process - Procurement Evaluation Breakdown

Procurement – Legal Advice/Support for the Comms Hubs & Network Procurement Process		
Number of Bids received	3	
Number of Bids shortlisted	2	
Strengths of Selected Bidder	REDACTED were considered the most appropriate fit for this work owing to 'good practical appreciation of possible procurement rules/approaches'; 'impressive discussion of the procurement issues and possible mitigants' and 'overall, AG presented a well-balanced and highly experienced team with good command of the issues.' REDACTED achieved a far superior quality and interview score (53.99% versus next place bidder of 42.75%), with competitive rates and the largest volume discounts. Following moderation, REDACTED quality score (50.99) was significantly higher than the other two bidders (38.25 and 36.99)	
Challenge by DCC	**Initial Price**	**BAFO**
	N/A	N/A
	Commercial scores were based upon an evaluation of rates and volume discounts. The successful bidder would have won based upon Pre-BAFO scores alone but provided improved commercial terms as part of its BAFO leading to a 6% increase in its commercial score (leading to a 5.34% margin in overall scores), with further volume discounts offered during the life of the matter	

Table 30: Legal Bidders Discount Rates/Value

Provider	Discount (£50,001 - £100,000) (10%)	Discount (£100,001 - £150,000) (10%)	Discount (£150,001 - 250,000) (5%)	Discount (>250,000) (5%)
REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
REDACTED	REDACTED	REDACTED	REDACTED	REDACTED

NextGen Design Assurance – REDACTED

Driver for the Procurement

As outlined above, the scale and value of the contracts to be secured require a similarly scaled-up procurement process to ensure the requirements were fully scoped and nothing is missed or could be misinterpreted.

The Comms Hubs and Networks Programme collected circa 1,800 requirements as inputs to these major procurement processes for 4G Comms Hubs and Services. These requirements cover the full range of what DCC needs including, amongst others, SEC Obligations, Operational Performance measures, contractual requirements, delivery and testing services.

The importance of ensuring the requirements are complete and recorded in a way that is fit for purpose; as well as building on lessons learned from previous programmes, led DCC to seek a formal external assurer. REDACTED were commissioned to review and assure the requirements gathering and assurance process. This included assurance of the industry best-practice Requirements Traceability Matrix (RTM) used to record and track the requirements, and assurance of the requirements themselves.

In addition, the CH&N programme also used services from REDACTED to independently assure the Price Model used in the procurement. This model was provided to bidders to use in formulating and detailing their Bids and is also now being used to evaluate bids received under the ITT. The decision to gain independent assurance of the pricing model was taken following legal advice that some high-profile public procurements, including that for the West Coast rail franchise, had been successfully challenged on grounds relating to failings in the pricing model.

Securing Value for Money

Table 31: Design Assurance Procurement Evaluation Breakdown

Procurement – Design Assurance	
Number of Bids received	2 (Requirement was issued to suppliers on the Consultancy Services Framework - formed of 5 suppliers)
Number of Bids shortlisted	2
Strengths of Selected Bidder	REDACTED was higher price REDACTED and scored lower on quality. REDACTED demonstrated a good understanding of the DCC requirement. The proposed approach provided the evaluation panel

	with confidence that they could carry out this work in line with DCC's expectation. REDACTED 's score for the quality criteria was higher than REDACTED 's (45% vs 33%). Also, REDACTED 's commercial criteria scores were slightly higher (40% vs 39%). Overall, REDACTED scored 85% compared to 72% for REDACTED.	
Challenge by DCC	**Initial Price**	**BAFO**
	REDACTED	REDACTED

There was no change between Initial Price and BAFO this is because the bid was a fixed price at best-offer level in line with the rates associated with the Consultancy Framework.

Future of the DSP study - REDACTED

Driver for the Procurement

The Network Evolution DSP Programme will gather requirements, design, procure and deliver the replacement for the current DSP services to serve Smart Metering for the next 10 – 15 years. In order to understand the landscape in which the future DSP will exist, the DCC commissioned two independent studies from 3rd party consultancies. One was an initial scoping study, this was minor and below the materiality threshold, the findings of this study were shared with TABASC in July 2020.

The second, more complex study was completed in January 2021 by REDACTED to understand the known and anticipated technical and architectural landscape that will influence the design of DSP services in future. The DCC shared the findings of this study with TABASC in March 2021.

The terms of reference for each study was discussed at the SEC TABASC sub-committee before the studies were commissioned and the outputs of each study were presented to TABASC and BEIS. These studies have served to give the DSP a firm, independently assured basis for considering the future DSP.

Securing Value for Money

Table 32: Future of the DSP Study Procurement Evaluation Breakdown

Procurement – Future of the DSP Study		
Number of Bids received	7 suppliers were on the framework, 4 submitted bids	
Number of Bids shortlisted	All 4 of those who submitted a bid were shortlisted and subject to quality-related questions	
Strengths of Selected Bidder	REDACTED were selected because whilst they submitted the second best quality responses to the questions, the price they submitted was significantly lower (40%) than the first place bidder.	
Challenge by DCC	**Initial Price**	**BAFO**
	REDACTED	REDACTED

Specialist Support - REDACTED

Driver for the Procurement

DCC operates a model of using permanent resources wherever possible and sourcing contractors where needed for temporary peaks in resource requirement or demand for specialist skills. The REDACTED work in RY20/21 met these requirements. In RY20/21 REDACTED provided services to the Comms Hubs and Networks programme in these three areas:

Economic and Financial Modelling: Under the DCC's Licence Condition 16.6, which was introduced by BEIS during RY20/21, the Outline Business Case (OBC) for the CH&N Programme needed to be submitted to BEIS and therefore needed to follow the HM Treasury Green Book methodology. The OBC includes a number of options, each of which needs to be analysed under the economic and financial models and presented in the OBC. As the DCC did not have sufficient internal resource to do such modelling, and no resource with the specialist experience of modelling under the HMT Green Book methodology, the DCC procured services from REDACTED.

Price Model for Procurement: As outlined above, the CH&N Programme launched a major ITT to procure 4G equipment and services worth circa £1.9 billion over their contract lives. An economic model was required to be built, to be used in creating the pricing model that Bidders were required to use in formulating their bids. It is essential such models stand up to any scrutiny, particularly should a bidder later challenge the basis upon which a decision was made. DCC did not have sufficient economic modelling expertise internally and therefore commissioned REDACTED to carry out the work. The same model is now being used to evaluate bids received under the ITT to ensure consistency throughout the process.

Procurement Expertise: The major ITT launched in December 2020 for the CH&N programme requires significant numbers of suitably experienced procurement experts to advise on and define the process, and to create and assure the collateral sent to Bidders. There was insufficient suitable internal resource available to allow the ITT to be launched to the timelines required, and the DCC considered options of contract resource or 3rd party consultants, including the 'Big 4' consultancies. It was decided to procure services from REDACTED as they had available two experienced resources with previous understanding of the DCC.

In RY21/22 REDACTED are expected to provide the following services:

Procurement Expertise: A continuation of the work outlined above to assist with the creation and assurance of the collateral sent to Bidders for the CH&N programme.

Given the need for LC16 business cases for a number of programmes, DCC have now recruited our own in-house modelling capability which will cover as much as possible of our modelling requirement, as it represents better value for money. This forecast variance may not therefore all materialise.

Securing Value for Money

The procurement that resulted in the appointment of REDACTED for these three areas of work was REDACTED. This is owing to the fact the consultants that REDACTED were able to supply had both the expertise required and previous knowledge of DCC. This was essential as the programme is of critical importance and haste was essential. A REDACTED process was followed.

The business need given for the REDACTED was as follows:

'The NG CH&N programme has identified a capability gap in the area of requirements creation and transition planning and management. This is an immediate requirement for specific expertise to provide management of the requirements gathering process and to support Procurement/Commercial with the transition options, strategy development and planning/management to ensure that a robust process is undertaken whilst the programme moves forward at pace.'

The cost to DCC was further reviewed against the contractor benchmarks and the consultancy rate cards were aligned. Furthermore, recruitment costs were not incurred by DCC. As such, the route was determined to be cost effective.

SMKI Solution/TSP – REDACTED

Driver for the Procurement

DCC has a contract with REDACTED to supply the SMKI security service and to meet this service REDACTED used the supplier REDACTED, who provided the REDACTED SMKI platform. The contract between REDACTED and DCC was originally 7 years with a one-year optional extension provision. In May 2020 DCC commenced discussions with REDACTED about varying the terms of the contract to 9 years plus 1-year optional extension. In August 2020 DCC were advised by REDACTED that their supplier REDACTED was intending to sunset the REDACTED SMKI platform in its current format and migrate all service users to a new service. This was unexpected and required a significant workstream to be put in place at short notice to ensure no interruption to the service provided to DCC's customers. The TSP (Trusted Supplier Programme) was therefore formally mobilised.

Upon receipt of the announcement by REDACTED, DCC considered all possible options, primarily

1. Negotiating a replacement solution with REDACTED to take the service past April 2022.
2. Re-precuring a SMKI solution with another provider.
3. Securing an extension of REDACTED and REDACTED s existing platform.

The second option was not possible in the timeline available. The third option was deemed not possible by REDACTED. It was therefore decided to proceed with the first option, negotiating a replacement REDACTED solution.

This decision was reviewed by SEC Panel in February 2021.

In February 2021 we wrote to BEIS outlining our proposed approach in response to the change announced by REDACTED. BEIS granted an exemption from the need for formal business case review under LC16.6 in February 2021.

In November 2020 and April 2021, Ofgem colleagues were provided with a briefing on the TSP workstream.

The TSP workstream has two phases. Phase 1 was to negotiate the short-term replacement solution. This will be in place from April 2022 at the expiry of the current arrangement, until March 2025. Phase 2 is to procure a longer term solution. Whilst the negotiating of a new TSP service platform with REDACTED, rather than a simple extension was unexpected, it has the benefit of allowing the DCC to scope the longer-term solution in tandem and explore future solutions that could be separate from REDACTED.

Securing Value for Money

The REDACTED cost incurred in RY20/21 is not material, however it represents the first payment milestone in the contract with REDACTED for the re-platforming.

There are further payment milestones falling in RY21/22 that amount to REDACTED. The new platform contract cost is REDACTED to build over a 12-month period. Then REDACTED per month operating charge.

The current REDACTED contract and the new contract have different commercial models.

- The current contract was based on 'build and pay for a large, dedicated platform at the start, and charge monthly for its operation and support'.
- The new platform is 'build a large private cloud based platform at the start, and charge monthly for the server technology, software and operation/support'
- Some specific elements – like the server infrastructure and the REDACTED software – are amortised over the three years of the new platform life. We are consuming the server

infrastructure as a ‘private cloud service’ as opposed to paying it all upfront. There are still some minor hardware elements (firewalls and load balancers) which we are paying for upfront.

- For the overall life of the contracts, the new platform will be cheaper in a comparison.
    - Current platform contract cost REDACTED to build over a 12-18 month period. Then circa REDACTED per month operating charge.
    - New platform contract cost REDACTED to build over a 12-month period. Then circa REDACTED per month “operating charge”.
    - New platform has a much lower capex upfront cost for DCC.
    - New platform removes the legacy hardware and provides improved reliability and SLA’s from a private cloud environment

- The new REDACTED platform has been business modelled by REDACTED to show REDACTED annual cost of private cloud infrastructure vs. REDACTED annual cost for an equivalent dedicated server platform.

- Some additional benefits of the new platform:
    - DCC is taking its first steps in using private cloud/managed compute infrastructure – with using virtual machines and Kubernetes technology to drive efficiency and security of the new environment.
    - Managed compute infrastructure will be provided an ‘as a service’ model, with the added maintenance, support and sparing of a PaaS environment.
    - Additional compute resources will be easier to add to the platform – simply scaling up the quantity of resources in a cloud environment.
    - SLA’s have been improved for the new platform:
        - Definition of Persistent Service Failure has been tightened
        - Definition of Critical Service Failure has been tightened
        - Batch request size has increased from 375k to 500k
        - Improved maximum certificate requests per second.
        - Performance Measures now align with time taken to resolve an issue, as opposed to simply responding to a problem.

IV. Enduring Change of Supplier (ECoS) RY20/21 Variances Overview

Cost Centre Variance in RY20/21 by GL

The table below provides a breakdown of incurred and forecasted costs in Price Control format below i.e. mapping costs directly against the price control General Ledger codes (GLs).

Baseline (£m)			RY20/21	RY21/22	RY22/23
Total ECoS			**-**	**-**	**-**
Payroll costs	PR	£m	-	-	-
Non-payroll costs	NP	£m	-	-	-
Recruitment	RC	£m	-	-	-
Incurred (£m)			**RY20/21**	**RY21/22**	**RY22/23**
Total ECoS			**0.826**	**2.048**	**2.072**
Payroll costs	PR	£m	0.826	1.969	1.990
Non-payroll costs	NP	£m	0.001	0.068	0.082
Recruitment	RC	£m	-	0.011	-
Variance (£m)			**RY20/21**	**RY21/22**	**RY22/23**
Total ECoS			**0.826**	**2.048**	**2.072**
Payroll costs	PR	£m	0.826	1.969	1.990
Non-payroll costs	NP	£m	0.001	0.068	0.082
Recruitment	RC	£m	-	0.011	-

Cost Centre Variance by Staff Type and Team

The table below shows the payroll variance by sub-team within the ECoS cost centre.

ECoS Payroll Costs	RY20/21	RY21/22	RY22/23
Baseline	**-**	**-**	**-**
Commercial and Regulation	-	-	-
Operations	-	-	-
Security	-	-	-
Service Delivery	-	-	-
Testing	-	-	-
Incurred	**0.826**	**1.969**	**1.990**
Commercial and Regulation	0.114	0.198	0.341
Operations	0.185	0.611	0.789
Security	0.132	0.172	0.172
Service Delivery	0.387	0.716	0.478
Testing	0.008	0.272	0.211
Variance	**0.826**	**1.969**	**1.990**
Commercial and Regulation	0.114	0.198	0.341
Operations	0.185	0.611	0.789
Security	0.132	0.172	0.172
Service Delivery	0.387	0.716	0.478
Testing	0.008	0.272	0.211

4 Enduring Change of Supplier (ECoS)

4.1 Purpose, Scope and Structure

Enabling energy customers to change supplier securely and easily is one of the fundamental purposes of the smart metering rollout and is underpinned by DCC's change of supplier process. An essential component of this is the replacement of certificates on devices (primarily meters) that identify the responsible supplier.

When the original technical and security architecture for DCC was developed within the government's Smart Metering Implementation Programme, it was decided that DCC should implement a temporary solution for change of supplier, known as Transitional Change of Supplier (TCoS). The rationale was to avoid requiring additional change from energy suppliers during the mass roll-out of smart meters. While designed and successfully operated at a very high standard of security, TCoS is not fully aligned with the Trust Model for smart metering, primarily because TCoS functionality is provided by the Data Service Provider (DSP). It was always intended that TCoS should be replaced as soon as practicable by an Enduring Change of Supplier (ECoS) process, so as to introduce a greater degree of separation.

On 30 May 2019 BEIS wrote to SEC Parties and other stakeholders, consulting on a proposal to direct DCC to provide ECoS arrangements covering both SMETS2 and enrolled SMETS1 meters. This was accompanied by a solution review of options for ECoS prepared by DCC. The BEIS consultation letter endorsed the recommendation in the DCC solution review, which was that Option 2, involving the procurement by DCC of a separate centralised party to operate the Change of Supplier service, should be the preferred option, and sought views on a proposal to direct DCC to implement this solution. This option requires very little change from DCC's energy supplier customers; once implemented, their interaction with the ECoS system to effect a change of supplier event will be very similar to their existing interactions with TCoS. The formal response to consultation, concluding that DCC should be directed to implement Option 2, was issued by BEIS on 17 September 2019.

On 1 August 2019 DCC received a Direction from BEIS for the purposes of Condition 13A of the Smart Meter Communications Licence (the DCC Licence), to work to produce an implementation plan for the ECoS arrangements. The plan is required to set out the activities which DCC and its external Service Providers will need to undertake, and the deliverables required, in order to deliver the ECoS arrangements, including reaching a position where the TCoS arrangements are discontinued.

It is a requirement of Condition 13A of the DCC Licence that DCC consulted the SEC Panel and all SEC Parties regarding the proposed content of the plan before submitting it to BEIS for approval as it stands, or with required revisions. That consultation took place between 23 January 2020 and 21 February 2020. DCC received five submissions on the content of the plan and has reviewed them. DCC has made available a consultation conclusion document that responds to several comments that were submitted as part of the consultation[22].

On 16 March 2020, DCC submitted the final delivery plan and the summary of consultation responses to the Secretary of State, and on 30 March 2020 received approval from the Secretary of State.

The delivery plan includes procurement of three requirements:

- The provision and ongoing support of an IT solution to manage the activities relating to Change of Supply – notably the validation of an 'Update Security Credentials' (CoS) SR6.23 from the Gaining Supplier, the co-ordination of related messaging with the Access Control Broker and ultimately efficient replacement of Losing Supplier security credentials with ones provided by the Gaining Supplier, on the devices within the end consumers' smart metering system.
- The provision of a hosting platform to support the ECoS solution – a hosting platform and relevant infrastructure required to independently host the ECoS solution.
- The provision of a managed service agreement for ECoS – a managed service which will maintain, monitor and evaluate the service on behalf of the DCC, in order to ensure the continuity of the Service Management framework for the ECoS Service.

[22] The consultation conclusion documents is available on the Smart DCC website: Consultation on the Delivery Plan for Enduring Change of Supplier

The same supplier was shortlisted for both the second and third requirements, hosting and service management. In order to leverage better value, it was therefore decided to combine these two requirements into one procurement phase.

From April 2020, the DCC commenced work to enact the agreed delivery plan, key activities in RY20/21 included:

- Issuing the RFPs relating to the three procurements to suppliers in April 2020
- Preparing for the procurement phases – Design, Build Test (DBT) from January 2021 (completed April 2021), combined Hosting and Service Management (on track to be complete end of July 2021)
- JIP LC13 milestone has been achieved with DCC providing a final draft of the SEC Variation Testing Approach Document to BEIS as planned by 04 June 2021 (published in RY21/22 - 15 April 2021).

Overall Approach to Stakeholder Engagement

DCC continues to ensure stakeholders are kept informed and are adequately consulted through various channels and governance groups including engagement with the SEC Panel and its sub-committees, particularly TAG, the SEC Ops group, the SSC and the SMKI PMA as relevant, and on programme progress with the Implementation Managers Forum (IMF), the Smart Metering Delivery Group (SMDG), and other transitional bodies as relevant.

Key events and objectives driving activity and cost

Future activity driving resource and non-resource profiles is related to the delivery of the LC13a Plan. A full plan review will be undertaken once all new suppliers are on board in July 2021, to revalidate future milestones, but currently there is no expected change to 30 June 2022 go-live. The key delivery milestones at this point are below.

Table 34 Timeline for defined phases of ECoS

Phase	Estimated start date*	Estimated completion date*
ECoS Party Procurement	April 2020	April 2021 (Design, Build and Test) July 2021 (Hosting Services & Service Management)
ECoS Design phase	February 2021	April 2021
ECoS Build phase	May 2021	October 2021
ECoS Test phase	October 2021	June 2022
ECoS Go-Live approvals	May 2022	June 2022
ECoS Service Live	June 2022	June 2022
TCoS to ECoS migration	June 2022	April 2023

* Please note that these are indicative dates from the LC13 Plan that was set before the suppliers were onboarded. As above, the plan review with the selected suppliers will take place in July 2021 which may result in some changes to these dates.

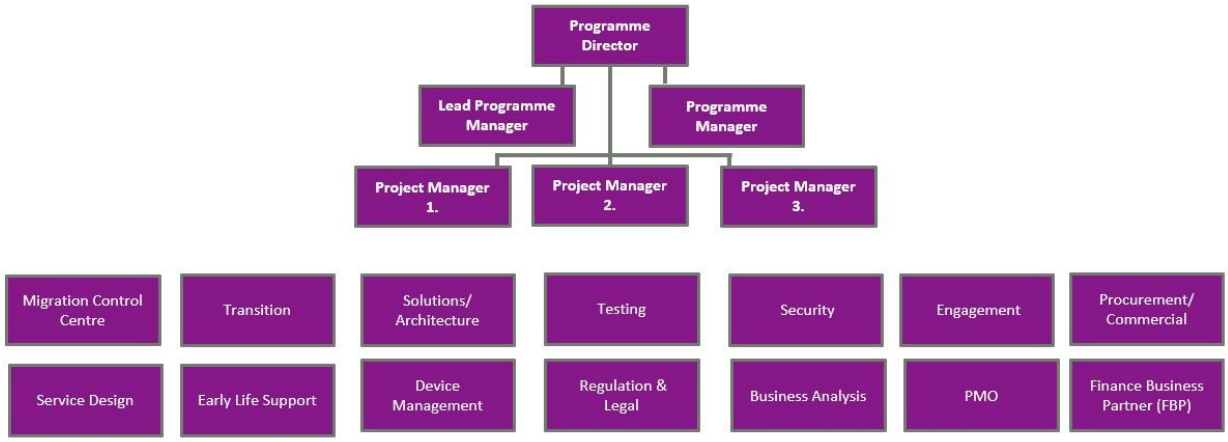
Cost Centre Structure

DCC has a substantial portfolio of other programmes to be delivered during 2020-2023, each with its own requirements in terms of human and other resources. Following the direction from BEIS, the plan for ECoS has now been built into DCC's portfolio management processes to ensure that the necessary resources are identified and made available, and any conflicting demands managed. Active management of these issues will continue as timings and requirements are further refined with the progress of the project. To assist this, the environments' schedule will be shared at the appropriate governance fora.

Functional SME input for ECoS is ascribed to cost centres across DCC. During RY19/20 and RY20/21 resources were focused around procurement, Design, Build and Test and TCoS to ECoS migration planning.

The organisational structure of the programme in RY19/20 was a sole Project Manager reporting into the Programme Manager; supported by functional teams including Regulations and Security. In RY20/21, the programme has moved into the broader structure shown in the figure below. Sub-teams have now been identified as follows and articulated as clear workstreams to support the programme into maturity and delivery.

Figure 6 Programme organisational structure



A mapping of the ECoS Programme is set out in the table below:

Table 35: Sub Team mapping

Current Sub-team RY20/21	Sub Team structure reported in RY19/20	Description
New for 20/21 - Programme Director	**N/A**	Overall Leadership of the Programme including overseeing delivery and acting as the senior stakeholder and supplier interface.
1 x Lead Programme Manager 1x Programme Manager commencing in 21/22	**Programme Manager**	Oversees the delivery of the ECoS Programme and its phases as identified by the LC13a Delivery Plan. Two will be required owing to the volume of project workstreams to oversee.
3x Project Managers for 20/21	**Project Manager**	Supports the Programme Managers. Delivers respective programme elements.
No change from 19/20	**PMO**	Provides project assurance and general project

Current Sub-team RY20/21	Sub Team structure reported in RY19/20	Description
No change from 19/20	**Regulation, Engagement and Commercial & Legal**	Functional support to the whole lifecycle, and distinct phases, of the programme including external engagement and regulatory matters.
No change from 19/20	**Business Analysis**	Comprehensively captures the requirements of the solution to be delivered.
Early Life Support Device Management Transition and Migration Control Centre are now articulated as separate teams in the structure.	**Operations**	Designs and manages the structure of the service transition. Manages and operates the Technical Operations Centre (TOC).
Solutions Architecture and Service Design are now articulated as separate teams	**Design Team**	Provides solution architecture and planning of initial design.
No change from 19/20	**Testing and Test Assurance**	Manages and provides testing services of the designed solution and assurance of system interoperability across service providers.
No change from 19/20	**Security**	Specific design, build, and testing of security requirements to ensure that the process is designed so that data remains secure through the change of supplier process.

4.2 Cost Centre Variances

Variance by GLs in the RIGs

There is solely payroll related variance in RY20/21 and payroll forecast variance in RY21/22. There are no other material variances in this cost centre.

Table 36: Variance from the RIGs by GL

				RY20/21	RY21/22	RY22/23
Baseline	**Total ECoS**		£m	**-**	**-**	**-**
Incurred	**Total ECoS**		£m	**0.826**	**2.048**	**2.072**
Variance	**Total ECoS**		£m	**0.826**	**2.048**	**2.072**
	Payroll costs	PR	£m	**0.826**	**1.969**	**1.990**
	Non-payroll costs	NP	£m	0.001	0.068	0.082
	Recruitment	RC	£m	-	0.011	-

Variance by Sub-Team

The table below shows variance in sub-teams Operations and Service Delivery for RY20/21 and variance for all teams in future years, owing to this being a new Programme and there was no baseline to measure the variance against.

Table 37: Variance from the RIGs by sub-team

ECoS Payroll Costs		RY20/21	RY21/22	RY22/23
Incurred	**£m**	**0.826**	**1.969**	**1.990**
Variance	**£m**	**0.826**	**1.969**	**1.990**
Commercial and Regulation	£m	0.114	0.198	0.341
Operations	£m	0.185	0.611	0.789
Security	£m	0.132	0.172	0.172
Service Delivery	£m	0.387	0.716	0.478
Testing	£m	0.008	0.272	0.211

4.3 Drivers for Variance – Resource RY20/21

Following the Secretary of State's approval of DCC's delivery plan, from April 2020 DCC commenced work on the ECoS programme. As a new Programme without a baseline, all expenditure this reporting year will be a variance. The following sections set out DCC's resource costs.

4.3.1 Operations

The ECoS Programme requires the following Operations resources, who provide solution architecture and service design planning as part of the scoping stage of the initial design:

- Solution Architects
- Service Design
- Transition Manager
- Device Management

Activities driving change in resource in RY20/21

Key activities undertaken during this period were to:

- Ensure architecture alignment to DCC strategic aims.
- Scope and define the high-level architecture design including the high level requirements.
- Evaluate any customer journey changes i.e. how the changes proposed via ECoS might impact our customers.

Supporting activities included (but not exhaustive):

- Identify the business areas that will need to be engaged from a design and service perspective.
- Kick-off calls with functions identified to talk through the scope and design.
- Produce Stage Gate Artefacts and approval by the required stakeholders in order to meet CDM process requirements.
- Produce impact assessments for Service Design changes to support the transition of ECoS into a live service and the assurance of Operational Business Acceptance.

Activities driving change in resource in RY21/22 and RY22/23

With this being a new Programme there was no baseline, therefore the costs of this team are fully shown as variance.

4.3.2 Service Delivery

The following Service Delivery resources are the core Programme team to deliver the end to end Programme including the migration from TCoS to ECoS:

- Programme Director

- Programme Manager
- Project Managers
- Project Management Office (PMO)
- Business Analyst

With this being a new Programme there was no baseline, therefore the costs of this team are fully shown as variance.

Activities driving change in resource in RY20/21

Key activities undertaken during this period were the issuing of the RFP relating to the three procurement processes to suppliers in April 2020. Preparing for the three procurement phases (note - the combination of phases 2 and 3 of the procurement occurred later, part-way through the work as outlined above) :

- Design, Build Test (DBT) of the application
- Hosting the application and
- Service Management

Supporting activities included (but not exhaustive) :

- Kick Off meeting with internal DCC functions to describe the Programme and explain the target outcomes
- Define the high level use cases / requirements and journey impact
- Create the following Project Artefacts:
  - Project Initiation Document
  - Programme Plan
  - Stakeholder Engagement Plan
  - Risk, Issues, Assumptions and Dependencies log
  - Business Case and Resource profile
  - Lessons Learned Log.

Activities driving change in resource in RY21/22 and RY22/23

With this being a new Programme there was no baseline, therefore the costs of this team are fully shown as variance.

4.4 Drivers for Variance – Resource RY21/22 and RY22/23

Forecast Variance – All Sub-Teams

The variance seen across all sub-teams in future years is owing to this being a new Programme and the fact there was no baseline to measure the incurred cost against. The Programme will be ramping up resources in RY21/22 and RY22/23 with new suppliers onboarded and with us moving into the Design, Build and Test phase. The ECoS Programme ‘Go Live’ is scheduled for June 2022, meaning that resources for Operational Readiness will increase i.e. Transition Managers, Services Architects and Testing. In RY22/23 the main activity that will be progressing is the TCoS to ECoS migration effecting the mainly the same teams.

4.5 Drivers for Costs Incurred – Non-Resource

RY20/21

There were no non-resource costs incurred in RY20/21.

RY21/22 and RY22/23

There is no forecast non-resource cost anticipated in RY21/22 or RY22/23 that meets the Price Control certainty threshold.

4.6 External Costs

As ECoS is a DCC programme, the narrative includes information on the External Costs incurred and forecast during the three year Price Control reporting window.

CGI – CR1428 (Enduring Change of Supplier)

Drivers and Scope

The existing Transitional Change of Supplier (TCoS) was built as a transitional solution in order not to delay the DCC Go-Live date. The original intention was for TCoS to be replaced by an Enduring Change of Supplier (ECoS) solution within two years of TCoS implementation.

CR1075 had been previously raised to manage the delivery of an ECoS Solution. This CR1428 is a replacement to CR1075. The objective of this Change Request is to enable design, implementation and support of the changes required by an incoming ECoS service provider (ECoS Party) replacing TCoS. These changes are for supporting all of the currently deployed devices: SMETS1 as well as SMETS2. Included is the requirement for full support of the migration from TCoS to ECoS. A new ECoS Party Service Provider will provide services to support migration and transition through to live operations. This will include the associated cutover activities such as management of the parallel running and reporting of both.

The requirements under CR1428 can be summarised as follows:

- Modify the Change of Supplier processing within DSP such that SRV6.23 is forwarded to the ECoS Party instead of TCoS for SMETS2+ Devices. Introduce CoS specific validation checks to verify the CoS Response returned by the ECoS Party. Enforce anti-replay checks and CoS specific ADT checks
- Modify the Change of Supplier processing within DSP such that SRV6.23 is forwarded to the ECoS Party for SMETS1 Devices. Enforce anti-replay checks and CoS specific ADT checks for SMETS1
- Enforce the validity of the SRV6.23 sender by checking against a User ID range provided by DCC Help Desk, for the above requirements
- Provide an interface for the ECoS Party to send notifications to DSP and convert the ECoS Party notifications to DCC Alerts for delivery to Service Users
- Add support for the ECoS Party to send an instruction to replace the CoS Party certificate in a Device
- Provide a mechanism to manage the ECoS Manufacturing Certificates (post commissioning)
- Provide a mechanism to manage the TCoS Manufacturing Certificate in newly commissioned Devices after the ECoS Party goes live
- Build a mechanism to handle migration from TCoS to the ECoS Party, which is managed by the DSP
- Provide a web service interface for the ECoS Party to query the Device association details from the SMI
- Provide notifications to the ECoS Party on a daily basis to notify inventory updates including association of a Device with MPxN

- Provide pre-prepared Registration Data extracts on a daily basis to the ECoS Party (optional item to be used if CSS is not available for ECoS Party go live);
- Provide interfaces for DCC Service Desk to upload the User ID Ranges Data file and the CoS ADT Forecast Data file
- Enhance DCC Service Management System (DSMS) to support the ECoS related incidents
- Support for TCoS Decommissioning
- Support for SMKI Recovery processes where the ECoS Party is the compromised party.

Securing Value for Money

The initial price for CR1428 (Enduring Change of Supplier (ECoS)) was calculated to be REDACTED by CGI DSP. This delivered a REDACTED (-1.2%) saving against the ROM cost submitted in the Preliminary Impact Assessment as this activity was expected to cost in the region of REDACTED. The labour charges of REDACTED covered 5,739 labour days of activity over 9 months between January 2021 and September 2021, with 125 of those labour days being based offshore at a reduced rate. Cost savings of REDACTED were already accounted for with the adoption of EAST in SysTest Execution. Infrastructure charges of REDACTED were also included within the total for this FIA V1.0. An option was included within the FIA V1.0 to support the tactical solution to deliver the registration data files to the ECOS party. The charges relating to this option totalled REDACTED .

CGI DSP provided the Final Impact Assessment (FIA) V2.0 and Price Breakdown V2.0 which had a total cost of REDACTED, representing a 5.0% saving against the Price Breakdown V1.0. The labour charges reduced by REDACTED (-4.5%) to REDACTED. The expense charges reduced by £57,971 (-41.5%) to REDACTED as a result of an extension of the travel restrictions imposed by HM Government to the end of June 2021. The infrastructure setup costs increased by REDACTED (2.8%) to REDACTED The optional charges to include delivery of the registration data files to the ECOS party reduced by REDACTED to REDACTED.

CGI DSP provided the Final Impact Assessment (FIA) V3.0 and Price Breakdown V3.0 which had a total cost of REDACTED, representing a 0.3% saving against the Price Breakdown V2.0. The labour charges reduced by REDACTED (-0.1%) to REDACTED. The expense charges increased marginally by REDACTED (0.5%) to REDACTED and the infrastructure setup costs decreased by REDACTED (-5.2%) to REDACTED. The optional charges to include delivery of the registration data files to the ECOS party remained unchanged between the FIA V2.0 and V3.0.

Overall, the total saving achieved between the Final Impact Assessment (FIA) V1.0 and V3.0 is REDACTED (-5.4%). However, it is important to note the expenses savings of REDACTED per onshore labour day is set to continue beyond the end of June 2021 and this isn't factored into the values in the FIA V3.0. Should this continue to the end of September 2021, a further saving of REDACTED will be achieved on the expense charges.

The other important point is the CAN for CR1428 is yet to be signed as the scope of works to be included within this FIA is changing with the intention of reducing the cost further.

A breakdown of the costs and summary of the price reductions is provided in the tables below.

Table 38: Price Breakdown CR1428

Detail	Total Price (Ex VAT) (£)
Setup Labour Cost (See Labour Breakdown tab)	REDACTED

Core DSP Team Setup Expenses (see UK Expenses tab) - Discounted until 30th June 2021 due to travel restrictions	REDACTED
Option 1 RDE - Setup Labour Cost (See Labour Breakdown tab)	REDACTED
Option 1 DSP Team Setup Expenses (see UK Expenses tab) - Discounted until 30th June 2021 due to travel restrictions	REDACTED
Infrastructure Setup Cost (See Infrastructure tab) including expenses - expenses discounted until 30th June 2021 due to travel restrictions	REDACTED
Option 1 RDE - Infrastructure Setup Cost (See Infrastructure tab) including expenses - expenses discounted until 30th June 2021 due to travel restrictions	REDACTED
Working Capital Charge (see options below)	REDACTED
Total Setup Charges	REDACTED

Table 39: Initial vs Final Price CR1428

Initial IA price (£)	Final IA Price (£)	Difference (%)
REDACTED	REDACTED	(5.4)

5 Market-wide half-hourly settlement (MHHS)

5.1 Purpose, Scope and Structure

Market-wide half-hourly settlement (MHHS) is an Ofgem-led programme, with Elexon as its key delivery partner.

MHHS will be achieved by mandating that electricity suppliers settle all customers with capable meters (or equivalents) in a half-hourly (HH) capacity. Domestic customers will retain the option to opt out of this for import settlement data but not for export. Any Third-Party Intermediaries (TPIs) would also need to access the meter independently for data.

The MHHS draft business case relies on exposing energy suppliers to the exact half-hourly costs of customer consumption patterns, rather than being profiled23 as they are now for Non-Half Hourly (NHH) customers. This exposure will make it easier for electricity suppliers to offer Time of Use (ToU) tariffs, which in turn will incentivise customers to shift load patterns. Customer load shifting will benefit both intermittent generation-balancing and reduce network infrastructure investment. Cost benefits range from £1,559m-£4,509m (NPV) from 2026 -2045. This is set against a cost of around £90m to implement. MHHS will also increase overall settlement accuracy.

DCC have been supporting Ofgem to refine their Target Operating Model (TOM) and costs associated with the DCC system changes required to support MHHS.

The changes include implementing three new market segments that encompass all Supplier Volume Aggregation (SVA24) metering systems (1 - Smart and Non-smart, 2 – Advanced, 3 – Unmetered), all of which will be settled in a half-hourly (HH) capacity (previously a mix of Non-HH & HH). Both electricity import and export settlements are included within MHHS scope. The electricity settlements calendar will also be reduced but retain an extended period for trading disputes25. There are also changes required to Supplier Agent roles, to support the three market segments. The programme will require significant change to multiple industry codes such as:

- Condition 21.14-16 of DCC's licence details the general requirements for DCC to work with the Authority, summarised as a 'duty to cooperate', with any matter designated as a Significant Code Review. MHHS has been designated as a SCR.
- Additionally, a new condition, LC21.17-18, is being introduced to the DCC licence, requiring DCC to comply with sections of the Balancing and Settlement Code (BSC) that relate to Market-wide Half Hourly Settlement Implementation.
- The relevant section of the BSC (section 12), does not place any enduring obligations on the DCC but will require the DCC to work with other MHHS participants and comply with the MHHS governance framework.

Key events and objectives driving activity and cost

In RY19/20, Ofgem evaluated the costs to industry of implementing HHS by running a series of engagements with the market.

To support MHHS, DCC will need to introduce significant system changes, this includes retrieval of 48 HH interval reads each day from both the import and export meter registers (if applicable) of every applicable meter for settlements/billing, plus an additional check read that could be as regular as daily (requirements to be confirmed by the industry working groups).

Current assumptions about the TOM are that both the Meter Data Retrieval service (MDR) and the electricity supplier will need to independently access this data for settlements and billing purposes respectively. The MDR will be a new DCC user that is appointed by the electricity supplier and will be required to comply with the Smart Energy Code (SEC) for the purpose of collecting data for the settlements process.

[23] A profile represents the pattern of electricity usage for a customer within a segment of the electricity supply market.
[24] Supplier Volume Allocation (SVA) – Suppliers obligated to provide data for entry into settlement processes.
[25] The Trading Disputes process is a way for BSC Parties to correct errors after the final settlement run.

For DCC to implement these changes, a SEC modification proposal will need to be raised and approved by Ofgem. In addition to established SEC governance, the modification will feed into an industry governance arrangement that is currently being introduced by Ofgem. DCC implementation costs and additional ongoing costs will need to be factored into the DCC price control arrangements.

The changes implemented by the DCC will be an integral part of a much wider industry change programme, largely based on the Balancing and Settlement Code (BSC), but also impacting the Retail Energy Code (REC) and Distribution Connection and Use of System Agreement (DCUSA).

5.1.1 Cost Centre Structure

In RY17/18 and RY18/19, work on this programme was undertaken by two permanent members of DCC staff working part-time on DCC's response to Ofgem's consultation and on the TOMs. These resources were assigned from DCC's Regulatory Affairs team and responded to items such as the consultations as part of their required business-as-usual activities[26] .

In RY19/20, the responsibility for MHHS was transferred to the Operations cost centre, but with continuing regulatory support and advice from the Regulatory Affairs team. DCC utilised less than 0.3 FTE Project Management, and 0.1 FTE Architect and Regulatory support across the period. The project maintained one FTE, Director of Design, to host the industry design sessions and to take the DCC perspective of MHHS offline with the regulator and other stakeholders to optimise the potential impact on DCC's systems and services. We have undertaken training to ensure staff in areas impacted understand the theory and expected process for MHHS and highlighted potential conflicts in new work.

In RY20/21, DCC representatives attended the cross-industry MHHS Design Working Groups (DWG) as well as responded to two further consultations regarding DCC system changes and programme planning assumptions. This was supported by 0.1FTE Programme Manager, Architect and Regulatory support. DCC have had monthly meetings with the MHHS Ofgem Project Team analysing the DCC solution, associated costs and delivery options.

In RY21/22 DCC will support the progress of relevant the SEC Modifications. This will be managed through the dedicated In-Life Change Team - 0.5FTE Project Manager will be assigned to this team to support the MHHS SEC Modification.

We will discuss with Ofgem its preferences for presenting information on MHHS in future submissions.

[26] The expected Ofgem business case may provide the justification for DCC to create a separate programme for MHHS.

6 Distribution Network Operator (DNO) programme

6.1 Overview

As part of the SMIP, DCC has started a programme of work to improve the service DNOs receive. The programme is based on five pillars:

- **Data Reporting** - We have developed accurate, automated DNO customer performance metrics reported via a monthly dashboard to help DNOs develop data insight to enable operational performance improvement and optimisation
- **Service Improvement** - We have established a joint, prioritised and change controlled view of the current DNO issues backlog and are delivering a DCC improvement plan to resolve the issues backlog. We now have a more effective use of DCC incident and problem management processes to manage operational issues and are in the process of constructing a "Memorandum of Understanding" agreements with Meter Manufacturers to help deliver best practices
- **Power Outage Alerts** - We will improve SMETS2 POA performance to maximise DNO benefits and contribution to SMIP business case and ensure POA requirements are integrated into NEP procurement
- **Strategic Engagement** - We have taken the opportunity to reset and rebuild the DCC-DNO engagement model facilitating coordination and alignment within DCC to optimise DNO outcomes we will continue to improve coordination between DCC, DNOs and relevant industry groups
- **Service Optimisation and Innovation** - DCC and the DNOs will explore ways to collaborate to maximise value from the DCC network. We will investigate ways to improve effectiveness of industry device testing for DNOs and explore development of a joint development and test sandpit approach. Where possible, we will align our work with the RIIO-2 Strategic Innovation Fund activity that DNOs are eligible for.

Because the programme is currently small and under SMIP, the expenditure we are incurring on it is not separately reported on in the Price Control. However, across DCC we estimate we will need to use approximately the following internal resources in RY21/22:

- Communications Manager – preparation of internal comms for launch and early communications, ongoing engagement with DNOs, SECAS and government
- Engagement Planner – Commence initial engagement with DNOs and develop DNO stakeholder map. Develop baseline DNO survey
- Regulatory Business Partner – manage financial reporting of the Programme into Exco, forecast expenditure and budget performance
- Solution Architect – Director level post leading on the development of the technical design solution
- E2E Architect – Development of conceptual solution for relevant Proof of Concepts (PoC) for DNO services

We are likely to also need support across the business in the areas below. We will try to absorb these requirements from existing resources:

- Project Manager – Management of the Service Improvement and TOC Dashboard projects
- Business Analyst – DCC and DNO requirements capture, PoC requirements
- PMO Analyst – Support all in-flight programme, project and workstream activities

We are forecasting that the programme will go live in Q1 2022/23.

In the event the requirements materially change in future, we will consider separating out and reporting on our activities to help aid transparency.