

DCC Internal Business Case for the Design, Build and Test Phase of the Switching Programme

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1 Executive Summary

This document sets out DCC's activities and costs during the Design, Build and Test (DBT) phase of the Switching Programme and the costs relating to these activities, running from June 2019 through to the start of Early Life Support. This was first issued for consultation in April 2019 as version 0.9. Appendix D outlines the changes made following that consultation to baselined version 1.0.

Working to Ofgem, Smart DCC is the lead delivery partner on a programme to improve energy switching. Together with a number of existing organisations and new contractors on switching, we are delivering significant change in the energy market which will enable faster and more reliable switching.

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's Aims and Objectives

DCC's fundamental role over the course of the Switching Programme is to act efficiently and economically to achieve the core objectives of Ofgem's Switching Programme, enabling the implementation of a reliable, flexible and cost-effective switching solution.

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 Design, Build and Test (DBT) and early years of operation.

These objectives are founded on DCC's Licence and the Retail Energy Code, and they advance through the various programme stages of procurement, Delivery, Testing, and Early Life Support. 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 a robust switching network and secure data handling.

DCC's Responsibilities during the Design, Build and Test Phase

In order to achieve our core responsibility of delivering a Switching service that is economic, efficient, robust, and secure, DCC will act in the following capacities specifically relating to the CSS, alongside our Ofgem counterparts:

- **As a contract manager** - managing contracted service providers, including their deliverables, performance tracking and associated payments;
- **As a manager of design integrity** - managing the acceptance of all design artefacts and documentation including system, service, interface, hosting and data specifications;

- **As a manager of the defined requirements** - establishing a design and test baseline for the CSS solution and providing a mechanism through which this baseline can be managed and tracked against the requirements;
- **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 Factory Acceptance Tests.
- **As an issues manager** - assuring triage activities and managing defect escalations and rectifications as necessary.

A methodical and meticulous delivery approach is required to manage these deliverables and ensure a successful outcome. DCC's approach is underpinned by several key artefacts, including the project plan, contractual agreements with new service and delivery partners, a multi-party agreement with the Existing Service Providers and the Systems Integrator, a log of risks, assumptions, issues and dependencies (RAID), and a Requirements Traceability Matrix. These key artefacts will enable DCC to track and manage the progress of DCC elements of the Switching Programme and will enable DCC to provide clear updates to key stakeholders.

Contract Management

DCC's approach to contract management under Switching is consistent with the general mandate to act in an economic and efficient manner. DCC also adheres to a good practice management framework, which allows DCC to deliver to time, quality, requirements, and the best economic value against a complex mix of contracts.

Within DCC, the contracts managed for Switching arise from various procurement routes, each with their own management approach that addresses their level of complexity. The Fundamental Registration Service Capability (FRSC) Contracts (which include the Central Registration and Address Service contracts) are the most complex and require a management approach that would not be appropriate for most other Service Providers.

Collaboration with our Service Providers is ultimately the best route for a successful and economic delivery. DCC will continue to work closely with our key Switching Service Providers to develop and manage improvements, changes and priorities.

Resourcing

In order to efficiently manage the broad requirements of the Switching Programme, the organisational model for the Design, Build and Test phase has been divided into five sub-programmes. These sub-programmes provide the leadership structure through which the programme resources will operate, thus allowing resources to be allocated to specific tasks as necessary. These sub-programmes are as follows:

- Design, Build and Test
- Data Management and Migration
- Data Service Provider Interface
- Operational Readiness

- Commercial, Regulatory and Engagement

Overseeing these sub-programmes, there will also be a DCC Leadership and Portfolio Management Office function which will lead the DCC Switching Programme and interface with key stakeholders.

DCC's programme team structure during the Design, Build and Test phase is predominantly based around permanent 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 will be regularly reviewed and corrected as necessary.

The Switching Programme will remain insulated from the wider Smart Programme, using a dedicated and discrete programme team and only calling on central DCC for core functions such as finance and communications. Any additional resource requirements will be specifically recruited for the Switching Programme. This safeguards and protects the level and quality of resources working on the Switching Programme.

2 Introduction

This internal DCC Switching Business Case sets out DCC's forecast activities and costs relating to its role as Ofgem's key delivery partner for the Design, Build and Test (DBT) Phase of the Switching Programme. It covers all of DCC's activities during the period from June 2019 up to the start of Early Life Support. DCC's involvement in the Switching Programme during the DBT Phase will be managed through the application of an 'ex post plus' price control approach. This Business Case is an aspect of the 'plus' part of the approach and will be reported on regularly throughout the DBT Phase at the programme level.

The phase of the programme before DBT was Enactment. That phase was covered by the previous internal business case. A schedule of changes to the last business case was published in September 2018¹ when DCC was more confident that they could start to prepare for DBT, as well as conclude Enactment.

Significant within the schedule of changes was additional resourcing for DBT readiness and transitional activities. The schedule covered all costs up to the end of May 2019. Although the actual DBT programme activities have commenced from April 2019, this DBT Internal Business Case focuses only where financial coverage needs to start from – June 2019 onwards. In other words, the costs covered in this document do not cover April and May 2019 even if DBT is underway in those months: the costs for those two months were agreed under the previous business case (and specifically the September 2018 schedule of changes).

Whilst there has not been a version of the DBT business case prior to Version 0.9 consulted on in April 2019, there have been earlier estimates of DCC costs for this stage of the Programme. These estimates were shared with Ofgem as part of an overall business case for the whole programme, including DCC and all other costs. The Full Business Case was published by Ofgem² and covers all developments in costs since earlier estimates.

This Internal Business Case presents what DCC believes to be an economic and efficient response to the range of requirements on DCC and is based on the information available at the time of publication. If, at the time of publication, information is not available in relation to key activities then assumptions have been made, validated where possible, and documented (see Appendix A: for further information). The DCC Switching Business Case will be revised and updated at key points in the programme to take account of the increasing level of certainty about design and delivery decisions and planned activities, timelines, resource requirements and costs.

Contracts have been signed for the Central Switching Service provider, the Systems Integrator and the Core Systems Assurer. The contract for the Service Management Tools provider is planned for completion after the May 2019 publication of this document and there will be an update via DCC's website.

Each testing phase and gate process will further increase the certainty of the plan and the Business Case in general. Throughout its execution, DCC's plan, which was developed to

¹ DCC, 'Revisions to the internal DCC Business Case for the Switching Programme up to May 2019', 28 September 2019: [Weblink to document](#)

² Ofgem, 'Switching Programme: Full Business Case', 14 May 2019: [Weblink to document](#)

align to the overall Ofgem Programme Plan, will be subject to independent external assurance to confirm that the plan continues to be realistic and achievable.

This DCC Switching Business Case was baselined in May 2019 following consultation with Ofgem and industry. It is a response to the Switching approach under Reform Package 2a (RP2a) and reflects the latest Design Baseline 4³ (DB4). (See Section 3.1.4 for a definition of the terms RP2a and DB4.) It is expected that this Design Baseline will be revised once the Service Providers develop their physical designs in response to these requirements, these changes will be clearly communicated in a schedule of changes.

2.1 Complex Multi-Stakeholder Environment

DCC operates in a complex, multi-stakeholder environment that includes our core customer groups (energy suppliers, distribution networks), intermediaries providing access to DCC systems (Managed Service Providers) and a fast-growing segment of 'other users'.

Collaboration between the various parties involved in the Switching Programme will be a vital component of the Programme's success. The diagram below defines the core programme relationships of key partners within the DBT phase of the Switching Programme, with the purple shaded blocks being the focus of this document.

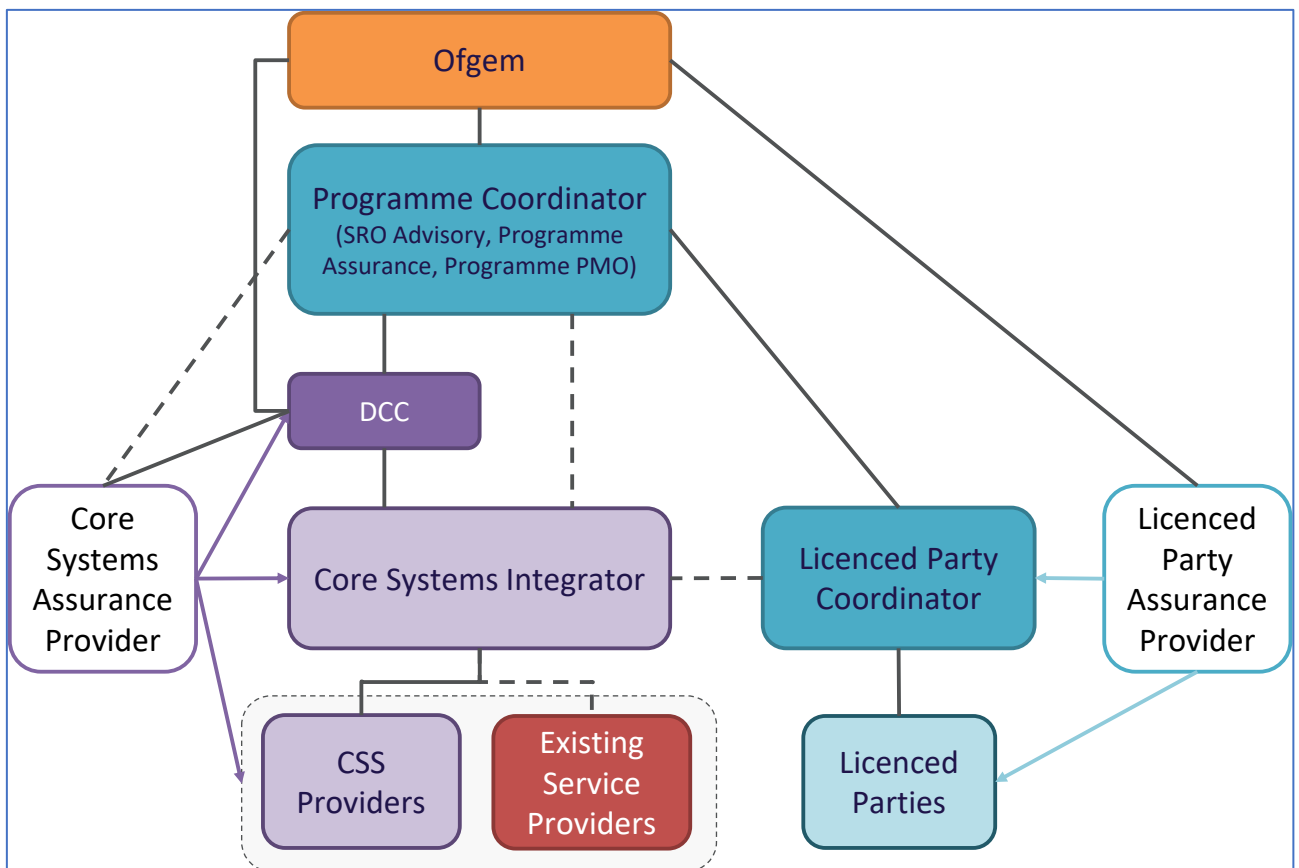


Figure 1 – Core Switching Programme Relationships

³ Ofgem, 'Switching Programme: Publication of Design Baseline 4 (DB4)', 22 June 2018: [Weblink to document](#)

The key participants in the delivery of the Switching Programme include:

- Ofgem – the independent regulator of gas and electricity markets, governed by the Gas and Electricity Markets Authority (GEMA). Ofgem licenses parties to operate within these markets and has a principal objective to protect the interests of all energy consumers.
- Licensed Party Assurance provider – a function being procured by Ofgem to provide assurance of the readiness and progress of the Licensed Parties, defined below, to participate in the various stages of integration, testing and transition into live operation of the new switching arrangements.
- Core Systems Assurance provider – a function being procured by DCC to provide Ofgem with assurance of the readiness and progress of the Existing Service Providers to participate in the various stages of integration, testing and transition into live operation of the new switching arrangements.
- Programme Coordinator – a function procured by Ofgem to provide industry coordination, Portfolio Management Office (PMO), assurance and advisory services to ensure the successful delivery of the DBT phase and transition to the enduring governance of the new switching arrangements.
- DCC – Ofgem's key Programme delivery partner, responsible for procuring and managing the contracts for the new CSS providers (registration, address and service management), the Systems Integrator and the Core Systems Assurance provider. DCC are also responsible for the build and early-life operation of the new CSS.
- Suppliers (Licensed Party) – organisations that hold a licence to supply gas and/or electricity to domestic and/or non-domestic energy consumers.
- Distribution Network Operators (DNOs) and Independent DNOs (Licensed Party) – organisations that hold a licence to transport electricity throughout the electricity distribution network.
- GTs and IGTs (Licensed Party) – Gas Transporters and Independent Gas Transporters; organisations that hold a licence to transport gas throughout the gas distribution network.
- Shippers (Licensed Party) – organisations that hold a licence to transport (ship) gas through the gas distribution network.
- Systems Integrator (SI) – a function being procured by DCC to ensure the effective integration, testing and transition into live operation of the new CSS, in combination with existing central data systems and services in the gas and electricity markets.
- Existing Service Providers (ESP) – organisations who currently provide a range of central data systems and services in the gas and electricity markets, for example UK Link, DES, MPAS, ECOES.

- CSS Providers – the three elements that will make up the new CSS (a registration service, an address matching service and a service management function); being procured by DCC.

2.2 DCC Enterprise Architecture

The DCC Enterprise Architecture function has been utilised throughout the early phases of the programme in identifying and defining all the impacts to the Total DCC System. This function has supported DCC in simulating and understanding a number of design and commercial scenarios including: how seemingly unrelated changes would materialise across the DCC's Total Systems; impact to delivery plans based on intersecting business requirements; and the development of the technology roadmap. The intention remains for this function to continue to be integrated with the programme team moving into the DBT phase as part of the design integrity function.

Their primary focus will be to ensure a consistency in the delivery approach by validating and accepting that the CSS SPs proposed changes to the DCC Enterprise are consistent with the DCC Architecture Principles and guidelines, which includes all changes to the Business, Data, Application and Technology Architecture that until now has been primarily conceptual.

Given the introduction of new service providers and licence conditions, they will have to ensure a cohesive target operating model is defined and fully functioning in tandem with the existing DCC architecture components. Using The Open Group Architecture Framework (TOGAF) standards, they will be responsible for the provision of all artefacts related to maturing the switching business capabilities and technology roadmap.

They will also remain part of the wider DCC governance in ensuring all proposed DCC enterprise changes outside of the Switching programme reference the Switching Architecture Model in their impact assessments. The current strategic planning has already proved valuable in highlighting a number of programmes with either material impacts or dependencies on the CSS delivery.

DCC are also aware of the Business Continuity Disaster Recovery (BCDR) requirements and the associated plans put in place by the Service Providers to address these requirements. These plans are captured in key artefacts to detail the location and the failover/recovery mechanism and are tested as part of the Operational Readiness BCDR testing.

The following diagram shows DCC's Total System and identifies the areas which are impacted by the CSS.

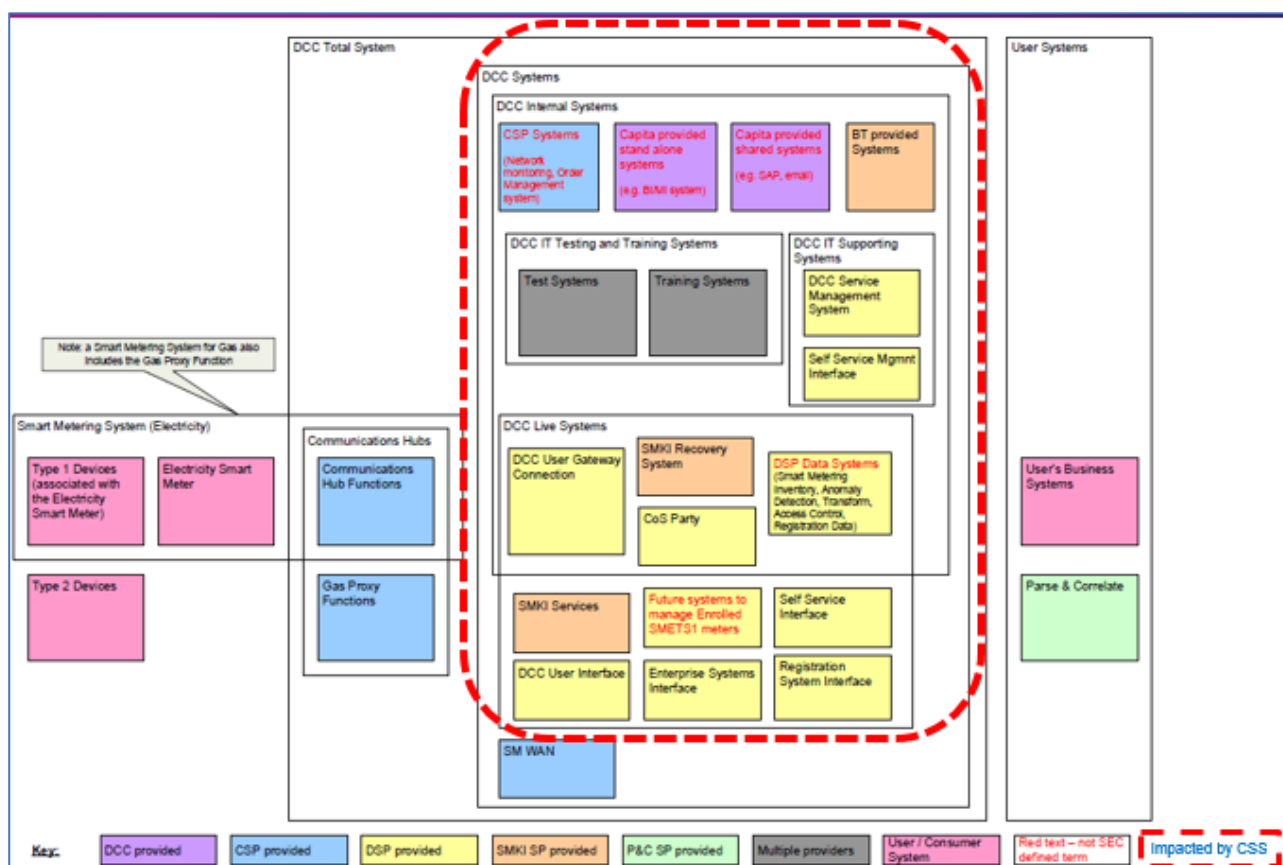


Figure 2 - DCC Total System - areas impacted by CSS

2.3 Background

Ofgem's Switching Programme aims to improve consumers' experience of switching energy suppliers, leading to greater engagement in the retail energy market, by designing and implementing a new switching process, underpinned by a Central Switching Service (CSS), that is reliable, fast and cost-effective. In turn this will build consumer confidence and facilitate competition, delivering better outcomes for consumers⁴.

Ofgem published its Outline Business Case, including a final Impact Assessment, for the Faster, More Reliable Switching Programme in February 2018. The initial consultation on the Internal Business Case is being held ahead of Ofgem publishing the Full Business Case for the programme. Ofgem's updated full business case will reflect developments in the programme since the Outline Business Case was published in February 2018. This Internal Business Case is based on Reform Package 2a, as set out with Ofgem's Outline Business Case, and the further detail developed in Design Baseline 4.

2.4 Purpose

This version of the DCC Switching Business Case is baselined for Programme purposes, with its function being:

- to provide transparency and to enable scrutiny by Ofgem and stakeholders of DCC's proposed and actual costs and activities under the ex-post plus price

⁴ Ofgem, 'Switching Programme: strategic outline case', 19 January 2017: [Weblink to document](#)

control approach as set out in Ofgem's decision on DCC's role in developing and delivering a Central Switching Service (CSS)⁵ within the overarching Centralised Registration Service (CRS) framework. (See Section 3 for a clarification of the terms CRS and CSS);

- to form a baseline scope of work and plan (for programme purposes) against which Ofgem and stakeholders can monitor DCC's delivery progress during the DBT Phase, via Switching Programme governance; and
- to form a baseline budget against which Ofgem and stakeholders can monitor DCC's incurred and forecast costs during the regulatory year⁶.
- Overall, to demonstrate that DCC is providing an economic and efficient service to the requirements placed upon it.

2.5 Scope

This DCC Switching Business Case sets out DCC's forecast activities and costs relating to the support it will provide during the DBT Phase of the Switching Programme. A Business Case is a value proposition that justifies the effort, resources and costs required to complete a project, and this internal Business Case focuses on DCC's internally managed components of the Ofgem Switching Programme. For any updates, it will also set out actuals available at the time of publication for activities already undertaken. Activities and the associated costs, margin and incentives during the Monitor and Evaluate (operational) phases are not included within the scope of this DCC Switching Business Case.

As an amendment to the previous Business Case covering Enactment (available via DCC's website), DCC made provision for planning and mobilising for the DBT phase ahead of its start. This Business Case does not cover those costs.

Within these parameters, the DCC Switching Business Case covers all DCC activities in support of the Switching Programme, including:

- Managing the design, build and test activities for the new CSS Service Providers;
- Integrating the above with the changes required to Existing Service Providers own systems as they are readied;
- Migrating data to enable the effective operation of the new Switching Arrangements and continued operation of Licensed Party systems;
- Carrying out multiple test phases including user integration, data migration, operations and Production system proving;
- Developing operational readiness ahead of Go-live and the next phase of the Programme.

⁵ Ofgem, 'Decision: DCC's role in developing a Centralised Registration Service', 17 May 2016: [Weblink to document](#) and Ofgem, 'Switching Programme: Outline Business Case', 12 February 2018: [Weblink to document](#)

⁶ Note that there remains a zero baseline for price control.

The overall costs within this Business Case form the basis of DCC costs to industry; any separate and indirect costs are captured in the Ofgem full business case.

2.6 Lessons Learnt

Implicit in a multitude of choices made on our approach to Design, Build and Test are the lessons learnt from the wider Smart Meter programmes in DCC and other relevant programmes in the sector. Our consultation on the first version led to a number of clarifications that we had learnt some key lessons and so these are now explicitly confirmed below. They are listed under key themes and chief among them is the adaptability to manage change to contracts so that we can challenge and avoid unreasonably high costs for change.

- Commercial and Procurement:
 - The draft contracts for the Switching Programme were based on the SMETS1 ANSO (Application, Network and Security Operations) contract, amended to include DCC's mandatory requirements driven from the Retail Energy Code. In addition, we have used specific lessons around the effectiveness of the SMETS change management process to develop an amended process for Switching. The contractual levers that will be used to control costs are covered later, but include an enhanced scrutiny and step-in mechanism which allows DCC to increase its level of scrutiny should a provider exceed a series of triggers, including persistent service failures and breaches that have a material impact on service performance, or to step in, which includes directive or management action should a provider exceed a series of triggers.
- Design and Architecture:
 - Within the SMETS2 programme, detailed knowledge and awareness of the system of systems architecture allowed for accurate, precise and effective design and delivery decisions to be made;
 - The Enterprise Architecture toolkit supported DCC in simulating and understanding a number of design and commercial scenarios including how seemingly unrelated changes would materialise across DCC's Total Systems, the impact to delivery plans based on intersecting business requirements, and the development of the technology roadmap.
- Security:
 - Any major network design changes or connections should be validated with BEIS and, if appropriate, the National Cyber Security Centre (NCSC) to avoid costly delays to the programme;
 - The use of Cloud technologies should be limited to UK instances only. Changes later can become costly;
 - Security should be involved in any design architecture decision-making meetings to avoid ratification or changes later in the programme;
 - Approval from Ofgem should be sought with regards to major security changes that may impact how data is used, stored or transmitted.

- Contingency:
 - The level of contingency set for the DBT phase of the Programme reflects the experience of comparable Smart Meter phases.
- Regulations:
 - The proactive management of regulatory changes impacting Service Providers' contracts reflects lessons learnt from the SMETS2 programme. We will work closely with DCC Service Providers, Ofgem and Industry to apply scrutiny to regulatory change and its cost implications (contractually). Overall this will result in more efficient management of time and cost of delivery.
- Engagement and Communications:
 - Regular and targeted engagement with Customers and Industry should commence at the early stages of the Programme to ensure ongoing interest and involvement. This is fundamental during the DBT phase as these parties will be the system's users in the near future.

This DCC Switching Business Case has followed a review process which has included consultation with key stakeholders at various stages. [Figure 3](#) below shows the timeline followed for this process.

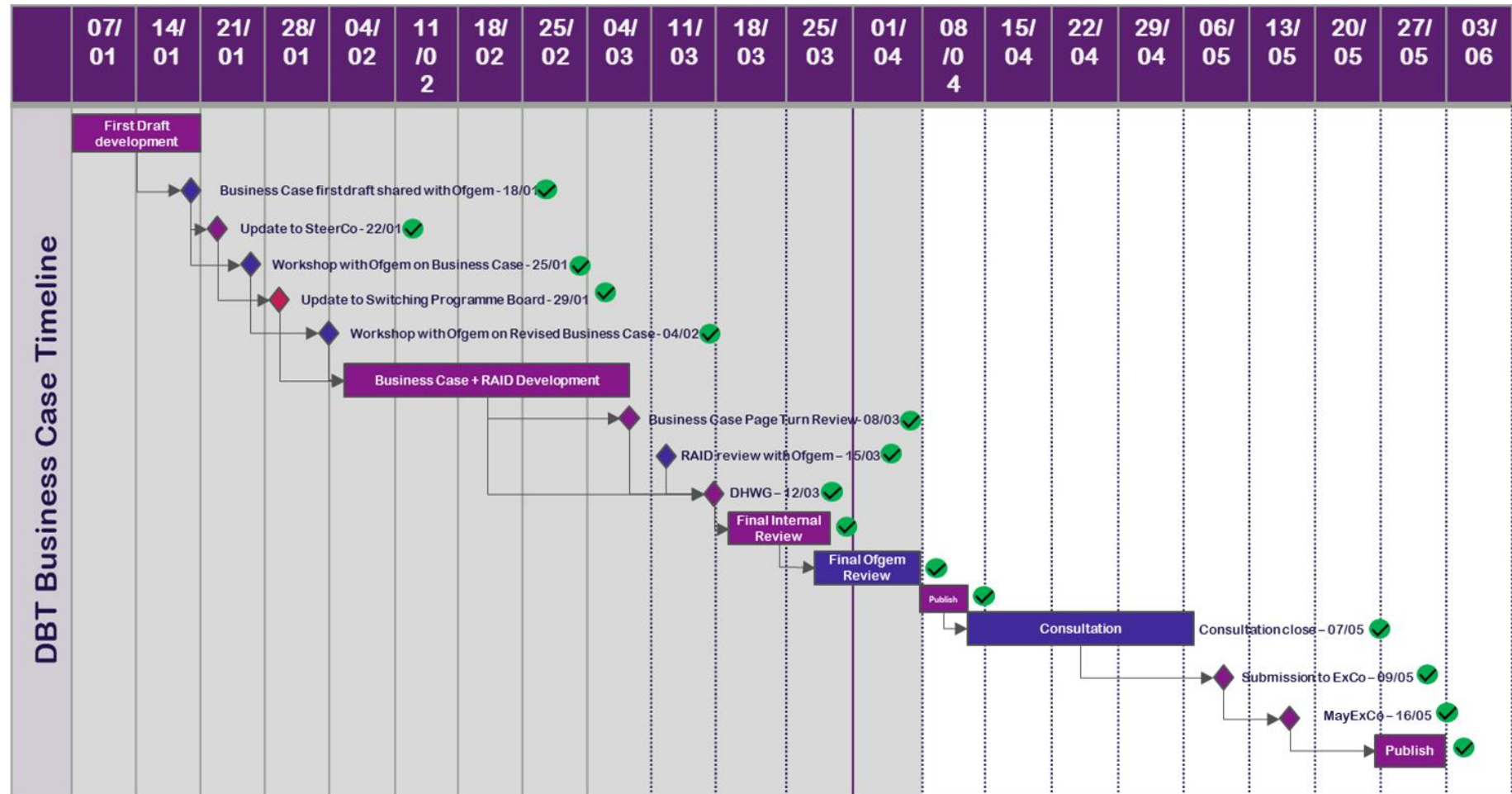


Figure 3 – Activities Leading to the Baselining of the DCC Switching Business Case

2.7 Transparency: Monitoring and Updating the DBT Business Case

The progress of the delivery of the Switching Programme will be closely monitored against the parameters included within this Business Case. Key stakeholders will be engaged in this process as part of DCC's reporting and during the process of updating or re-baselining the DCC Switching Business Case.

It is our intention that updates to this DCC business case will happen when there has been a notable change. Wherever possible, we will publish a schedule of changes rather than a fully revised document. A decision to update the business case will be prompted by a significant financial change (for example, a use of contingency) or a significant change in approach (including timings). DCC's sub-programme teams and PMO will raise the question as to whether an update should be considered. Where it has been agreed that an update to the Business Case is required, then the development of this update will include stakeholder engagement. The change triggering the update will be managed through Programme governance. The form and timing of the update must be cleared through DCC governance, including ExCo.

Monitoring and reporting of DCC's involvement in the Switching Programme will be delivered through the following reporting mechanisms:

- Programme delivery reporting – DCC Switching Programme delivery progress reporting will be provided to the Ofgem Programme and Industry through Ofgem's programme governance framework. This reporting primarily focuses on time and quality, but also provides a summary update on financial progress against the baseline budget set out in the DCC Switching Business Case. This is reported monthly with commentary;
- Ex-post annual price control reporting – DCC is required to justify its expenditure on the Switching Programme through its existing annual ex-post price control reporting framework. For the Switching programme there is a zero baseline, and all costs must be justified through the price control mechanism. This information is assessed by Ofgem's Price Control team only.
- DCC will host 3-4 summits each year with a chance for DCC customers to understand progress against the business case. The summits will include question and answer sessions with the DCC Switching team and each of the four contractors.

3 Programme Objectives and Aims

The following covers background on the Ofgem-led Faster, More Reliable Switching Programme; including the overall approach and objectives, and then moves on to requirements on DCC as the key delivery partner.

Ofgem's programme is being delivered over five phases, as illustrated below. As detailed in the introduction, this Business Case concerns DCC's role during DBT from June 2019 onwards, although DCC has been involved in earlier stages. The Blueprint Phase and the Detailed Level Specification stages were completed by May 2018, and the Enactment phase was completed in April 2019. The full DBT work phase is intended to run from April 2019 to summer 2021 (see Section 10 for granularity on the funding and coverage

included in this document). The diagram below gives an overview of the Switching Programme phases.

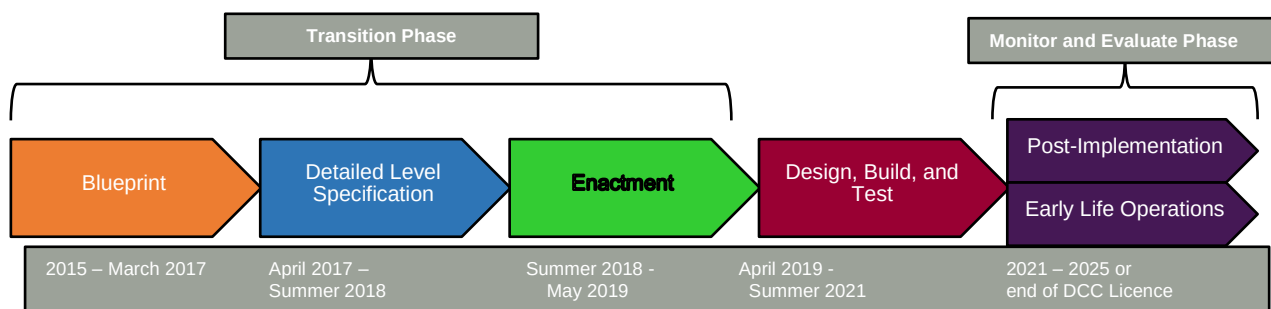


Figure 4 – Switching Programme Phases

In February 2015, Ofgem published their decision document⁷ which initiated the Switching Programme. In this document Ofgem concluded that the new switching arrangements would be underpinned by a new Centralised Registration Service (CRS) which will be procured and operated by DCC.

In May 2016, Ofgem amended DCC's Licence⁸ placing new obligations on DCC to play a contributory role in Ofgem's Switching Programme.

The amended Licence⁹ covered DCC's role throughout the phases of Blueprint, Detailed Level Specification and Enactment. The Licence required that DCC procure the services that would make up the CSS (as well as the SI, CSA and communication networks), but DCC's involvement would be complete at the end of the procurement.

⁷ Ofgem, 'Decision: Moving to reliable next-day switching', 10 February 2015: [Weblink to document](#)

⁸ Ofgem, 'DCC's role in developing a Centralised Registration Service', 17 May 2016: [Weblink to document](#)

⁹ Placeholder for updated licence – due Feb 19

Defining the Terms CRS and CSS

The term **CRS** is used within DCC's Licence to refer to the Switching Programme as a whole, covering DCC's full end-to-end deliverables within the Switching Programme, including:

- A Central Switching Service (CSS), which incorporates a Registration Service and an Address Service;
- Service management;
- Communication network services;
- System integration functions; and
- Core system assurance functions.

The term **CSS** refers to the new solution on which the switching service will be built and operated, including the Registration Service, Address Service and the associated service infrastructure.

A further consultation¹⁰ and Licence amendment process was completed in February 2019. This Licence amendment split DCC's role into two phases and objectives; interim and generalised CRS objectives. The interim CRS objectives extended DCC's role into the DBT and post-implementation phases, and the generalised CRS objectives further extended DCC's role into steady state operations. Steady state operations start from the point that the programme Senior Responsible Officer (SRO) decides that the required DBT exit criteria and gateway assurance have been met.

This decision to extend DCC's role into the DBT phase and further into steady state operations, means that DCC will be responsible for managing new services and an SI who will work with Existing Service Providers in delivering the core systems. Although the DBT phase did not start until April 2019, preparation needed to commence approximately six months ahead to ensure readiness across a number of areas. This preparation for DBT was a new activity, in addition to the pre-planned work initially set out for the Enactment phase, requiring additional capacity and often different skill sets. Further information can be found in the document: Schedule of Changes – Switching Business Plan¹¹.

These changes to the Licence allow for DCC's role in operation to continue throughout the contract term (until 2025). However, there is a provision in DCC's Licence which allows Ofgem to require DCC to cease activity under the switching obligation (LC 15). Ofgem will continue to review whether DCC remains the right party to be responsible for operation of the CSS, and that the end of the current Licence term provides a likely opportunity for such a review. The update includes the consideration that any change would be made well in advance of the end of the licence term to ensure that a smooth transition can be made if necessary. Ofgem have stated that criteria for changing DCC as CSS Operator may include:

¹⁰ Ofgem, 'Switching Programme: Regulation and Governance – way forward and statutory consultation on licence modifications', 15 October 2018: [Weblink to document](#)

¹¹ Smart DCC, 'Revisions to the internal DCC Business Case for the Switching Programme up to May 2019', 28 September 2018: [Weblink to document](#)

- Persistent failure to operate the CSS or to meet the Licence requirements; or
- Changes to market structures that mean Ofgem and/or DCC believe that DCC is no longer best placed to operate the service following successful delivery.

The performance regime and price control approach applicable to the DBT phase are detailed in Section 8 of this document.

3.1 Switching Programme Objectives

The objectives of the Ofgem Switching Programme are set out in the Ofgem Switching Programme Strategic Outline Case (SOC)¹² and the relevant parts are set out below. DCC contributes to the achievement of these objectives as a key delivery partner, acting efficiently and economically to enable the implementation of a reliable, flexible and cost-effective switching solution.

DCC's overarching objective for the Switching Programme is to fulfil the obligations established in DCC's Licence and in the Retail Energy Code (REC). A fundamental driver in the development of this Business Case is the following underlying Licence objective:

"... the Licensee should fulfil [the objectives] with due consideration to the total cost to and impact on industry, taking into account, in so far as is relevant and possible, the likely impact on consumers."

For information on how DCC's role on the Switching Programme contributes to DCC's overall strategy and Licence objectives please refer to the Business and Development Plan (to be published in July 2019). This covers some of wider opportunities that faster, more reliable switching will support.

In addition to the considerations of the wider DCC Licence, the general objectives for DCC are set out in Licence Condition 5. These are paraphrased below:

- First General Objective - Development, operation and maintenance of an efficient, economical, coordinated, and secure system for the provision of Mandatory Business Services;
- Second General Objective - Deliver Mandatory Business in a manner that is most likely to facilitate:
 - effective competition between persons engaged in, or commercial activities connected with, the Supply of Energy;
 - innovation in the design and operation of Energy Networks;
 - reduction (by virtue of benefits arising from the provision of Value-Added Services) of the charges payable for Mandatory Business Services.

Paragraph 15.3 makes it clear that *"The Transition Objective and/or General Objectives of the Licensee shall prevail in the event of a conflict between their provisions and the requirements imposed on the Licensee by the Interim Centralised Registration Service Objective"*. One primary example of this objective is that, during DBT and post-implementation, any conflicts in resource will be managed through prioritisation to

¹² Ofgem, 'Switching Programme: Outline Business Case and Blueprint Phase Decision', 12 February 2018: [Weblink to document](#)

(relevant transition) Smart activities. Although this could present a risk to Switching it is managed through protected resource for key roles and functions.

A distinction has been made in this document between overarching objectives and detailed requirements. The requirements are an extensive list that cover what is needed from the CSS Framework detailed in the design baseline (DB4). Requirements will shape the solution that contractors will deliver to form the CSS, but they will also shape DCC's approach and therefore we have included the Requirements in Section 5.2.1.

Changes to Condition 15 of the Licence has split DCC's role into two phases and objectives:

- the Interim Centralised Registration Service Objective, which covers the procurements and delivery of the CRS; and
- the General Centralised Registration Service Objective, which covers the steady state operation of the CRS.

3.1.1 Interim Centralised Registration Service Objective

DCC's role in meeting the Interim Centralised Registration Service Objective can be summarised as follows:

- DCC will design, develop and deliver an adaptable solution that will enable fast and reliable switching of energy suppliers nation-wide;
- DCC will procure the above solution and prepare an operations team to take over steady state operations once the appropriate gates have been approved;
- DCC will make and manage agreements for a secure, robust and flexible switching network;
- DCC will process the personal data that is required to achieve the above solution in an efficient and secure manner.

An extract of the relevant part of the Licence is included in Appendix C:.

3.1.2 General Centralised Registration Service Objective

DCC's role in meeting the General Centralised Registration Service Objective can be summarised as follows:

- DCC will procure, deliver, manage and maintain a switching solution – a Central Switching Service (CSS) - that will improve consumers' experience of switching;
- DCC will act as an ongoing design authority for the switching solution, maintaining design baselines and providing/participating in future updates or changes as required;
- DCC will protect and maintain address data as a cornerstone of the accuracy of the switching solution;
- DCC will support the novation of its Licence as required;

- DCC will continue to maintain agreements with the switching network partners.

3.1.3 Summary of DCC's purpose

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

- To provide advisory services to support the Ofgem-led definition of the end-to-end switching arrangements, of which the CSS is just one element;
- To ensure that the procured CSS will meet the requirements defined by the programme;
- To deliver the procured CSS, including managing the contracted delivery partners, and manage progress through DBT and early years of operation.

DCC has defined a set of high-level principles it will work to under DBT. They are founded on the objectives of the programme, and are informed by regulatory obligations and guidance, expertise from within DCC and best practice advice from external sources. The detail behind these principles are captured within the Roles and Responsibilities section (Section 5) and in the Licence. The high-level principles are:

- Deliver a new switching process that is reliable and fast, ensuring requirements are robustly met by operating as an "intelligent client" (with external validation of key decisions);
- DCC will take an active role in the management and delivery of outcomes. All critical decisions (such as request for proposal evaluation) will be supported by independent expertise;
- Deliver value for money for the consumer by taking into consideration the estimated "total cost of ownership" (TCO) of a new switching service across the industry;
- Drive innovation and competition, including within contractual arrangements;
- DCC will also incentivise innovation and accommodate design modification within contracts;
- Mitigate risks through robust processes and contractual arrangements, including mitigating delivery risk and the cost of failure, retaining Intellectual Property Rights, and enabling novation;
- DCC will seek to ensure that providers are motivated by the same goals as DCC and Ofgem by including in the contracts a mechanism for incentives and cost of failure so that goal congruence is achieved.

3.1.4 CSS Solution Overview

The CSS solution will be designed, built and tested by service providers. It is assumed that Design Baseline 4 and detailed requirements will determine the solution. The term 'assumed solution' is used in this document to capture both the latest design baseline and the scope for service providers to develop a physical solution.

In delivering a new switching process that is reliable and fast, ensuring requirements are robustly met, DCC will work toward the assumed solution¹³ to support Reform Package 2a - see definition below.

Defining the Terms RP2a and DB4

Reform Package 2a (RP2a) is Ofgem's defined reform package that will enable reliable, next working day switching. This reform package requires the development of a Central Switching Service (CSS) for which DCC is responsible.

Design Baseline 4 (DB4) is a suite of published products that define the agreed and baselined Switching arrangements against which the Switching Programme operates. These products define the design and delivery of the CSS and the End to End (E2E) Switching arrangements, as well as the CSS and E2E data security arrangements.

The diagram in Figure 4 above illustrates the databases, application layer, orchestration and interfaces (including their direction). This is aligned with the assumptions that underpin information DCC has provided to Ofgem to support the overall Programme-level Business Case.

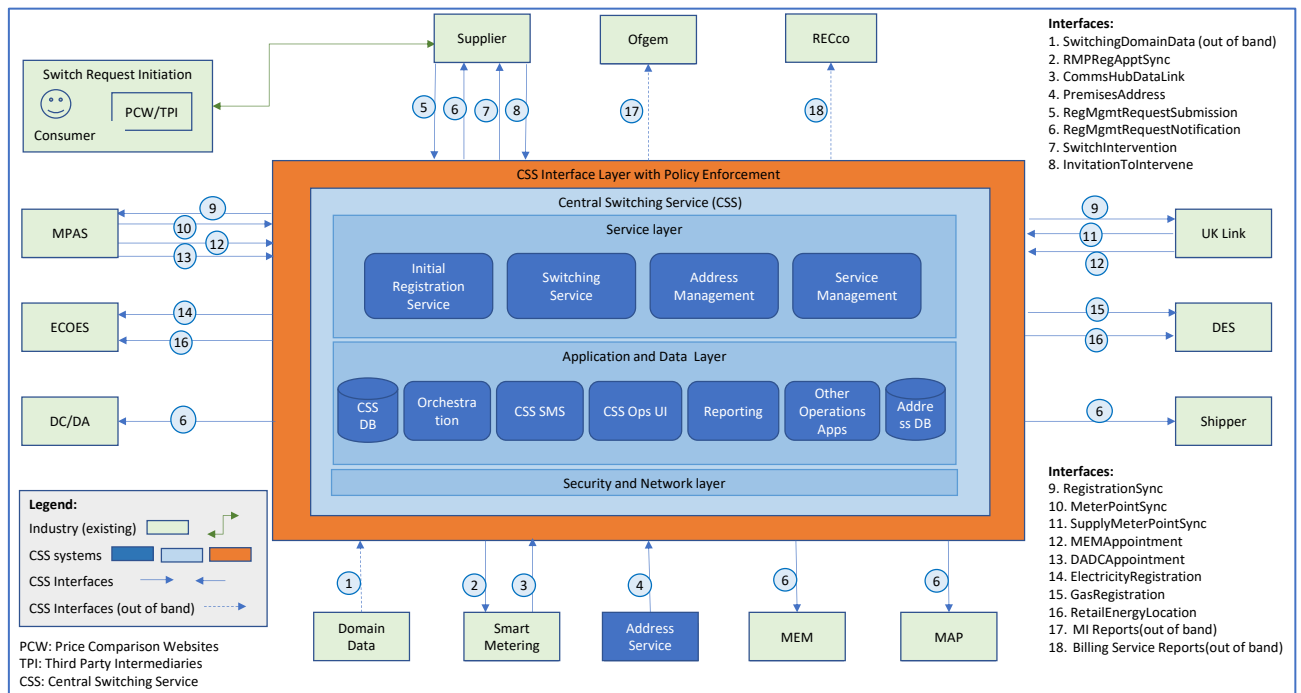


Figure 5 - Central Switching Service and Interfaces

The solution set out in Figure 5 above is illustrative of the flows and roles under the Switching framework as reflected in the overall plans. Whilst this overview defines the interactions required for the functioning of the CSS, the procured solution may vary from

¹³ The solution may change following the commencement of the relevant contractors as they may recommend an alternative approach.

this, reflecting the service, cost and market requirements of the service layer within the CSS.

4 Programme Governance

4.1 DCC's Programme Governance and Reporting Mechanisms

The Switching Programme is subject to a rigorous set of governance and reporting processes to ensure that the Programme continues to deliver to the defined requirements and budget. These include the following:

- Weekly and monthly leadership meetings - to review progress from the previous period, define priorities for the current period and identify milestones for the month ahead,
- Weekly Ofgem/DCC progress meetings - to discuss current developments, agree an aligned position and review the Programme Board reports or specific agenda items,
- Weekly sub-programme meetings – arranged to meet the specific needs of the sub-programme and relevant suppliers,
- Monthly End-to-End Plan reviews with all contracted service providers.

4.1.1 DCC Governance

As mentioned earlier in the document, DCC's deliverables for the Switching Programme are subject to the wider governance of the Programme. In addition to this wider governance, DCC has internal quality controls for its contractual programme managed through DCC's governance structure including the following forums:

- Weekly Delivery Hub Working Group (DHWG) - the principle decision making authority for Design, Build, Test and Run. The DHWG provides gate approval within the formal change processes and allows Functional Leads and ExCo members to provide advice to the programme outside of the SteerCo.
- Monthly SteerCo – provides a forum in which the Switching Programme progress and SteerCo report content can be discussed, enabling them to provide support, guidance and steer for the Programme. They are responsible for agreeing or rejecting changes and agreeing any escalations to ExCo.
- ExCo and DCC Board - accountable for overseeing the implementation of the Board's Strategic and Corporate objectives and managing DCC's business and operational activity day-to-day. They are responsible for managing DCC's strategic risks and issues, responsibly allocating resources, and maintaining good governance. With this in mind, the Switching Programme is required to provide occasional updates such as progress against key milestones and will require ExCo and/or the Board to sign off significant spend and contract signing.

The Governance outlined above acknowledges that DCC are a delivery partner working to a wider programme governance structure. DCC's framework allows significant decisions to be worked through internally to ensure quality and assurance within the wider context. It reserves the right for DCC to independently manage internal processes which will fit into the Ofgem model.

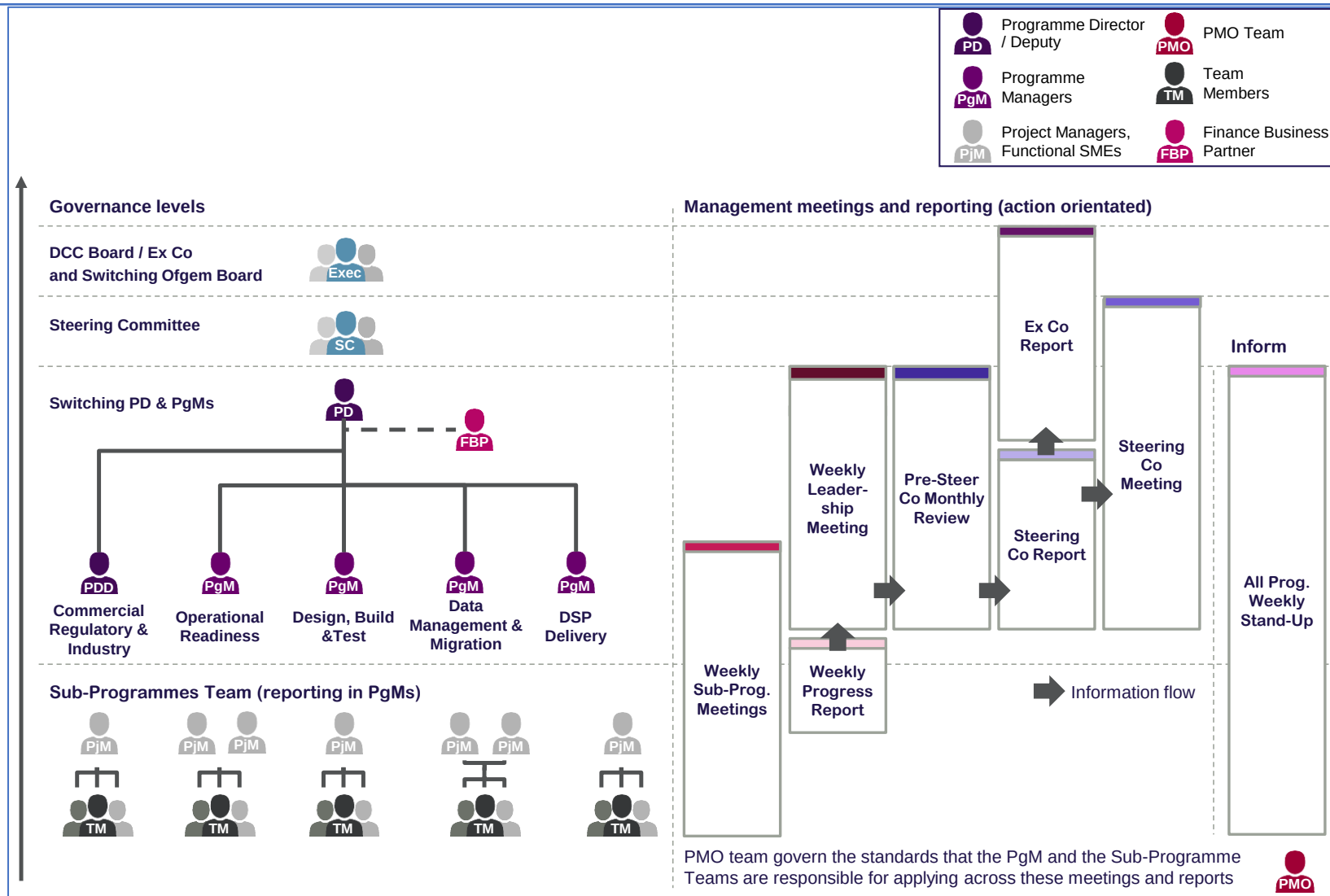


Figure 6 – Governance and Reporting Structure

4.2 Overarching Delivery Programme Governance

Ofgem controls the overall programme governance, taking input from DCC and the SI, as well as the CSA and CSS providers, depending on the subject and level of clearance required. DCC will have regular involvement in the Ofgem-led governance groups including the Delivery and Design groups. The following diagram gives an overview of the overall Switching Programme governance structure as defined by Ofgem. DCC, as Ofgem's key delivery partner, is involved in all of these groups.

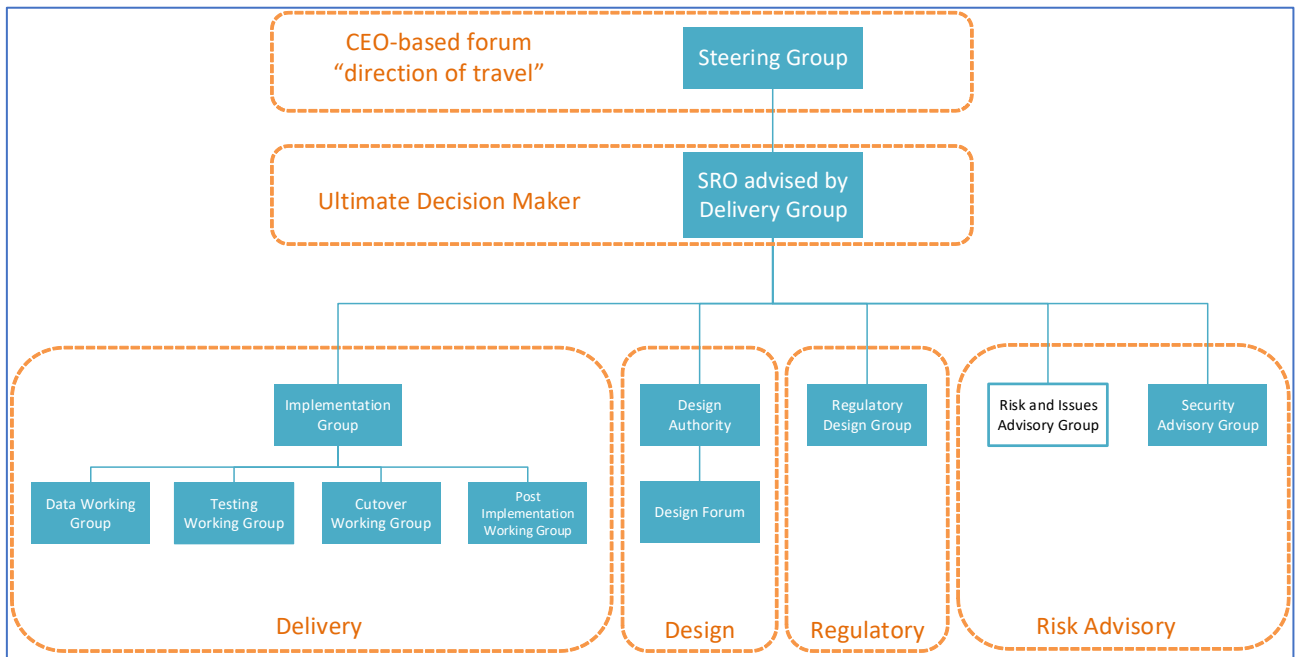


Figure 7 – Ofgem’s Delivery Governance Structure

As shown in the above diagram, the SRO holds ultimate decision-making control over high level delivery milestones. This could include fundamental changes or the movement of key milestone dates within the programme plan.

The SRO will be guided by, among others, representatives from Industry and System Providers to enable access to advice on delivery risks.

The table below has been produced by Ofgem and details the core external meetings and working groups.

Group	J	F	M	A	M	J	J	A	S	O	N	D	Detail
Programme Board*	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	Programme Board closed down PB transitions to Delivery Group
SPDG *		⊗											SPDG (old) closed down
Existing System Provider Forum*	⊗	⊗	⊗	⊗									ESP Forum closed down
Commercial Forum *		⊗											Commercial Forum closed down Last meeting in Feb to finalise margins and incentives
Delivery Group	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	January meeting a 'practice' meeting to discuss TORs
Implementation Group		⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	February meeting a 'practice' meeting to discuss TORs
Design Authority	⊗	⊗	⊗										Change management cycle to be reviewed by PC DA cycle under review to fit within needs of DBT
Design Forum	⊗	⊗	⊗										Change management cycle to be reviewed by PC DF cycle under review to fit within needs of DBT
Regulatory Group			⊗	⊗	⊗		⊗		⊗		⊗		March meeting a 'practice' meeting to discuss TORs
Data Working Group	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	Operates monthly or at frequency determined by chair
Testing Working Group					⊗	⊗	⊗		⊗		⊗		
Cutover Working Group										⊗	⊗	⊗	
Security Advisory Group			⊗	⊗		⊗		⊗		⊗		⊗	SAG tasked with delivery of security matters
Risks and Issues Advisory Group													TBD
Post-implementation Working Group													Unlikely to be established until 2020

Table 1 – Governance Meetings and Working Groups (source – Ofgem)

4.3 Financial Controls and Oversight

There is a wide range of mechanisms and regular points of financial oversight that will allow for the management of costs within the programme. In the past on the Switching Programme this has allowed DCC to not only contain costs but to also find reductions. Grouped by contractual levers and wider financial oversight, the specific ways are listed below.

4.3.1 Contractual Levers

The contractual levers that will be used to control costs are:

- A requirement for continuous improvement which includes cost savings and increased value for money;
- Liquidated damages, up to 15% of the milestone payment, for failure to deliver against individual milestones;
- A service credit regime for poor operational performance;
- Definition of the change control process, including the rate card that will be used to cost Change Requests;
- Value for money, which includes DCC's right to conduct benchmarking studies and the approach to gainsharing;
- Definition of general co-operation obligations;

- Enhanced scrutiny and step-in mechanism which allows DCC to increase its level of scrutiny should a provider exceed a series of triggers, including persistent service failures and breaches that have a material impact on service performance, or to step in, which includes directive or management action should a provider exceed a series of triggers, including persistent service failures and breaches that have a material impact on service performance.

In addition to these mechanisms, contract and supplier relationship management will be in place to ensure the terms of the contract are met and that performance is reviewed regularly. In a number of cases, our contracting reflects lessons learnt from wider DCC programmes.

4.3.2 Financial Oversight

DCC abides to several financial oversight verifications throughout the delivery of its programmes.

Internal Monthly Financial Performance reviews are held with Programme Directors, the Chief Financial Officer (CFO) and the Director of Regulatory Strategy to address any variances to plans, highlighting upcoming risks and opportunities, and provides a forum for programme updates.

These are channelled into the External Finance Updates for Customers which are held quarterly. These are held with customers to provide updates on current projects and allows an opportunity for customers to provide feedback.

Any spend outside of agreed business plan will follow a stringent approval process. This will require a further business case, approval from ExCo members and depending on value, approval from the Board for any draw down on the Prudent Estimate. DCC holds an overall contingency commonly referred to as the Prudent Estimate which is recovered as part of the annual Charging Statement. More detail pertaining to the usage of the Prudent Estimate is outlined within section 9.2.3.

As part of our annual review of costs, DCC is subject to Price Control measures to ensure that all costs represent good value for money and are economic and efficient. Further information of DCC's Price Control mechanisms are explained in section 8.4.

4.4 Change Control Process

DCC activity on the Switching Programme is subject to the same wider Change Control Process as all delivery partners. The process is currently being updated for the DBT phase. The Programme Co-ordinator, DCC and Ofgem are all engaged in this process and an initial output will be provided prior to first publication. In addition to the wider process, DCC also uses an internal Project Change Control process in a similar way to the governance processes described above. This process has been developed specifically for the Switching Programme following lessons learnt on the SMETS programmes. The DCC Change Delivery Method (CDM) is used to manage a change to the schedule, costs or benefits of an existing programme. It is also used to manage minor changes in scope that do not require a brand-new project and is supported by an escalation framework that details which authority level is required to sign off the change based on the impact to time or cost. Once a change has followed the internal DCC process it will be formally transferred into the Ofgem Change Control and Management Procedures.

For the avoidance of doubt, if a change is required within DCC's scope of activity, this change need not be managed by a formal process (and Ofgem informed) if the following criteria are satisfied:

- There is no impact to the baselined programme milestones or delivery dates including requirements or the REC;
- There is no impact on the baselined documents;
- Costs are contained within the Control Account or Work Stream (no call on contingency);
- There is no impact to product quality or scope; and
- No risk or uncertainty is added into the Programme.

If this is not the case, then the wider Ofgem change process needs to be engaged; the change will follow the established change control process (currently in review but likely to follow a link through a series of Change Requests) and managed through the agreed process. If the change impacts the scope or timing of an incentivised milestone, any change will be escalated to the programme SRO for a decision.

If the change meets all of the criteria above, then it will be deemed as a DCC 'management change' and will be handled by DCC within our remit as managers of the SI and contracts.

DCC will raise a Change Request if there is any change required to baselined documents including:

- All Baselined Programme Products (E2E Design, E2E Delivery, CSS Design, Service Management and Security), published or un-published;
- All future DCC controlled programme artefacts that are brought under change control, including the physical design baseline;
- The DBT phase plan, once baselined and published on the Ofgem website;
- All baselined REC v2.0 drafting and schedules;
- Programme Design Principles;
- Policy decisions as documented in the Ofgem Business Case (Strategic Outline Case, Outline Business Case and Full Business Case).

The change request will include an impact assessment of the proposed changes on the wider programme. This will include the impact within DCC on resource levels, budgets, configured items and declared timescales.

4.4.1 Current Baseline – Design Baseline 4

On 22nd June 2018, the publication of Design Baseline 4¹⁴ (DB4) marked the end of the Detailed Level Specification Phase of the Switching Programme. The suite of products published at that time included:

- Central Switching Service (CSS) Design and Delivery products: Focussing on how the CSS will operate; its service management and delivery plans;
- End to End (E2E) Design products describing how the new switching arrangements will operate for all market participants once implemented;
- E2E Delivery products describing the delivery plans for the new arrangements and the roles and requirements of market participants; and
- E2E and CSS Security Products: These products describe the information security and data privacy measures of the new switching arrangements – the latter not being made publicly available.

As the detailed physical designs for the systems to be implemented by the new CSS providers are produced, and the integration approach is developed by the appointed Systems Integrator, the DB4 documentation suite will need to be amended as further detail is added. This documentation suite is currently baselined, and any proposed changes will be appropriately redlined and progressed through Programme Change Control as described above.

Technical design authorities and design integrity teams will be in place to consider change requests and their impacts on the programme timescales and design, with Ofgem holding overall technical design authority and DCC managing the CSS and Address Service technical design integrity. Further information on the change control process is provided in Section 4.3.

¹⁴ Ofgem, 'Switching Programme: Publication of Design Baseline 4 (DB4)', 22 June 2018: [Weblink to document](#)

5 Roles and Responsibilities

DCC's responsibilities for the delivery of the DBT phase spans not only the commercial management of a number of contracted service providers, but also some assurance activities and collaboration with other parties.

Much of the focus of the management information in this document relate to DCC's management new core service providers. Inherent in the structure and delivery of this programme is an internal management, with teams managed within DCC and the Switching Programme team being subject to DCC governance and line management.

The contracted service providers for the DBT phase include the following:

- Central Switching Service (CSS) providers – responsible for the provision of the Registration Service (RS) and Address Service (AS) solutions;
- Systems Integrator (SI) – required to support the implementation of the new End-to-End Switching Arrangements. This 30-month contract has been awarded to Netcompany, a specialist IT services company, to provide assurance against a scope of work described in a later section of this document;
- Core Systems Assurance (CSA) provider – responsible for providing independent assurance to the Switching Programme governance;
- Service Management (SM) tools provider – responsible for the provision of the Service Management System and a Self-Service Portal.

DCC's responsibilities to the Switching Programme includes both internal DCC deliverables and externally supplied deliverables which will be managed by DCC. The following list details these external contracts and their suppliers.

Contractual agreements have been placed with:

Systems Integrator provider – Netcompany

CSS provider - Landmark

Core Systems Assurance provider - Expleo

Service Management provider – will be confirmed in a further update

During the DBT Phase, DCC is responsible for:

- The delivery and provision of an economic, efficient, robust and secure switching service;
- Contract Management of the Service Providers, including performance management and issuance of milestone completion certificates and associated payments;

- The acceptance of all design artefacts, including system, service, interface, hosting and data specifications;
- The establishment of a CSS design baseline including: Registration Service, Address Service, Switching Operations Systems and Services, and Infrastructure Services;
- The establishment of a CSS Design Authority function which will maintain the CSS Design and Test Baseline, CSS Design requirements traceability matrix and test traceability matrix;
- The acceptance of all testing artefacts, including pre-integration test specifications, test data and test results;
- The assurance of the results of unit/link, systems, non-functional and security testing prior to integration with other service provider systems;
- Specification of the scope of Factory Acceptance Testing and witnessing of this activity;
- The assurance of triage activities and establishment and management of defect escalation/rectification activities.

Once DBT is complete and the required tests and assurances have been met (over the course of 2020-2021) the Switching Programme will move on to steady state operations. This will be covered by a subsequent DCC business case.

5.1 Key Activities

The key activities of DCC during the DBT Phase of the Switching Programme relate to the delivery, integration and end-to-end testing of the Switching solution as shown in Figure 5 in readiness for steady state operations. The transfer to live operations will occur during summer 2021, as detailed in the project plan in Section 5.2.3.

The requirements for DBT are extensive and have been captured in the design documents. The plan and associated requirements have allowed us to make realistic assumptions (which are captured in the Risks, Assumptions, Issues and Dependencies (RAID) log in Appendix A:) to allow DCC to generate an indicative budget for our involvement in the Switching Programme. These assumptions will be tested as contractors begin to develop their approach.

Activities within DBT are split into a number of phases, the purpose of each phase is shown below. At a high level the phases consist of:

- Mobilisation and planning activities;
- Design, build and initial test activities for the newly appointed Service Providers and Existing Service Providers to ready their systems for integration with each other;
- A Systems Integration Test phase to verify that all Central Data Services, when integrated, comply with the E2E functional and non-functional requirements;

- A Data Migration phase to demonstrate that Licensed Party systems (including interfaces to CSS and other E2E Switching Solution systems) and processes operate according to the functional requirements;
- A User Integration Test phase to demonstrate that Licensed Party systems (including interfaces to CSS and other E2E Switching Solution systems) and processes operate according to the functional requirements;
- Data Migration and Transition Testing to test the planned approach to Data Migration (transformation and transfer) and the planned approach for the multi-stage transition into live operation;
- An Operational Test phase to verify that the Central Data Services can be installed and operated under the live configuration; and
- A live Proving Test phase to verify the set-up of the Production system, demonstrating that it is fit for purpose and to assess the readiness for go-live of the E2E Switching Solution as a whole.

5.1.1 DBT Sub-Programmes

The phases outlined above will be split and managed by five DBT sub-programmes and three functions:

- Design, Build and Test Sub-Programme;
- Data Management and Migration Sub-Programme;
- Data Service Provider (DSP) Interface Sub-Programme;
- Operational Readiness Sub-Programme;
- Commercial, Regulatory and Engagement Sub-Programme;

The new Programme structure brings together a mix of core professional programme functions that are needed for the overall coordination and management and do not constitute a sub-programme. The following core functions will be needed throughout DBT, (asterisked items will benefit from the broader central DCC activity or will be allocated resource from central DCC):

- Programme leadership;
- Commercial management*;
- Financial management*;
- Price control management*;
- Legal business partner*;
- PMO (separate but working with this Core Programme function);

- Technical functions including business analysts, design and architect skills, testing, etc.

Design, Build and Test Sub-Programme

Within the DBT Programme, resources are required to manage the Core Switching Service Providers, the development of the interfaces, and testing services provided by the Systems Integrator. Liaison with Ofgem and their Programme Coordination Function and Existing Service Providers will be a fundamental part of the programme. The Switching DBT Readiness team were mobilised during the Enactment phase and are fully mobilised for the commencement of the DBT Phase.

Data Management and Migration Sub-Programme

The Data Management and Migration sub-programme will have a specific focus on Data Management and Data Migration from Existing Service Providers into the CSS; this team will be responsible for managing the development and assurance of the Data Migration tools. The quality of the data is known to be poor and, to achieve the key objectives of next day, reliable switching and to reduce the number of incorrect switches, the quality must be improved. The data team will work closely with Existing Service Providers and CSSPs to ensure that data quality criteria are established and met. Data quality is key to enabling the criteria to achieve “next working day” switching and end Early Life Support. This drive is being coordinated through the Data Working Group led by Ofgem.

DCC’s scope in the area of data management includes the following areas:

- Ensuring that the data remains secure;
- Designing the data migration solution and implementing the data migration process;
- Advising Industry and initiating Industry initiatives to cleanse and improve the quality of data before migration;
- Ensuring industry has effective processes and systems to constantly improve data quality and matching;
- Working with service providers to maintain and improve data quality and matching during data migration and transition phases;
- Ensuring effective business processes are implemented to handle non-compliant data and process unautomated switches (exception processing);
- Implementing enduring automated data quality checks and trend analysis;
- Developing data entry standards to which data inputters should adhere.

Data Service Provider Interface Sub-Programme

The costs of DSP are included in the overall total but are not final. DCC will manage the update when these are available as a schedule of change and will involve Industry, so that the costs and impact are understood prior to the change. In addition, the re-procurement of the DSP is taken into account as part of the DSP Switching activities.

More information will be provided during the industry consultation on DSP costs (which is estimated to take place in fall 2019).

The new End-to-End (E2E) Switching Arrangements will be based around a new Central Switching Service, which will support a revised set of switching business processes, harmonising the arrangements across gas and electricity and delivering a faster, more efficient and more reliable switching process to consumers. The introduction of the CSS will impact the existing Registration Data Interface and the data flowing through that interface and hence there will be consequential changes on the DSP systems which gives rise to the requirement to implement a specific project within the Switching Programme referred to as the DSP Interface Project to deliver a new interface between the CSS and the DSP.

The following diagram gives an overview of the solution, introducing the CSS as the master source of Registration Data and single aligned source of Address information, connecting via a dedicated message-based interface providing Switching data to the Smart Metering DSP.

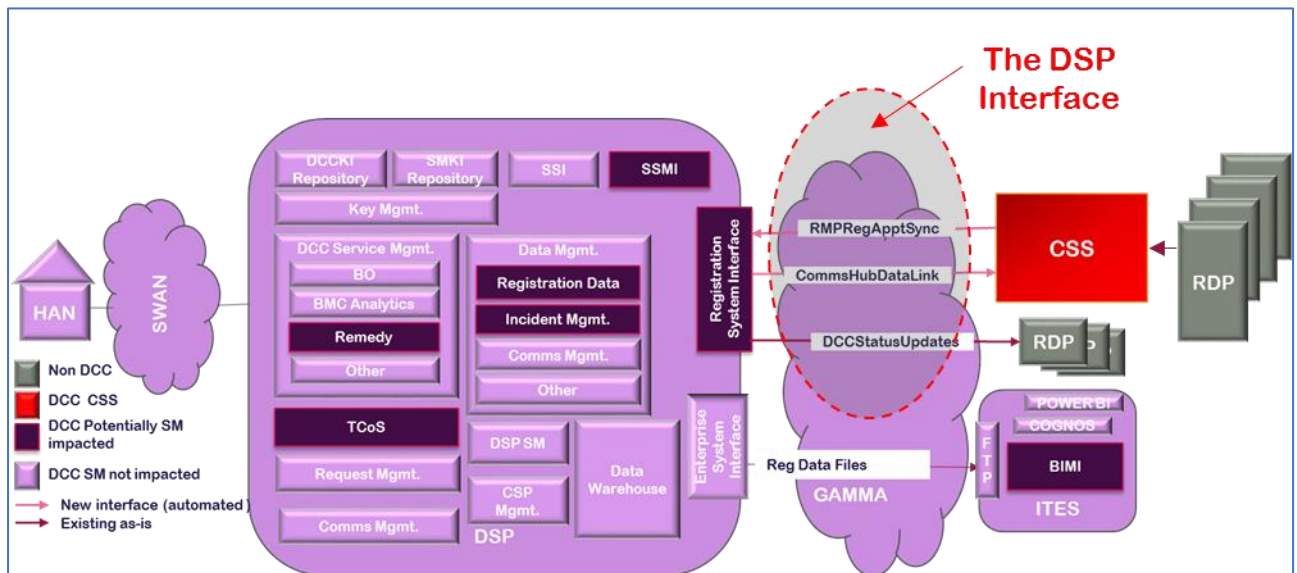


Figure 8 - Identifying the DSP Interface

The initial stage of the DSP Interface Project will be to review the CGI/DSP estimates on costs and durations of the proposed high-level solution and build this into the overall Switching Programme plan. Once this is complete, detailed solution requirements can be captured with CGI and progressed under a commercial agreement.

Following completion of the detailed design phase, DCC will deliver the detailed design of the DSP Interface solution and manage the subsequent build and Pre-Integration Testing (PIT) as part of the Switching DBT Programme phase.

The DSP Interface Project will deliver the required support to the overall Switching Programme SIT, UIT and Operational transition stages where the new DSP Interface is a factor in the end-to-end CSS solution testing, and transition into Operations.

Following completion of the UIT, there remains a potential dependency on the DSP Interface project; the future SI plan and test environments strategy could lead to a

requirement on the future DCC test facility to support DBT and consequently the DSP Interface.

Operational Readiness Sub-Programme

The Operational Readiness Programme was established at the start of the Enactment phase (June 2018) and will continue throughout Enactment and Design, Build and Test, until Go Live (currently expected to be during summer 2021).

The principle of the Operational Readiness Programme is to ensure that DCC and its service providers are ready, with the appropriate systems, processes and people in place to successfully operate the end-to-end Switching Arrangements at volume, in live operation.

The Operational Readiness Programme will ensure that:

- The Operational and Service Management requirements are defined and, as far as possible, the Existing Service Providers meet the Switching Operational and Service Management requirements;
- Changes to DCC systems to support Switching are identified, developed and implemented in the required timescales;
- All of the impacted DCC functional areas are ready and capable of supporting Switching;
- DCC Operations has everything required to accept Switching into live operation and to operate Switching both in Early Life Support and Business as Usual (BAU).

The Operational Readiness Programme will:

- Define and implement a Service Management environment across the end-to-end Switching Arrangements (including the Registration Service, Address Service and Switching Network, and the Existing Service Providers) to meet the needs of the new faster and more reliable Switching Arrangements;
- Develop an operational environment that will provide and support the ongoing delivery of a robust CSS to market participants (its customers).

Commercial, Regulatory and Engagement Sub-Programme

There will be three key functions within this Sub-Programme: Regulations, Commercial, and Industry and Communication. Details of each of these functions are given below.

Regulations

RECCo and the REC Manager will be in place to support REC development. Programme governance will be Ofgem-led throughout DBT (with RECCo and the REC Manager supporting). The Regulations team will work through this governance structure with the above entities and others, including the Regulation Design User Group (RDUG) and the Regulatory Design team for REC development and the consequential changes to other industry codes.

The Regulations team will, as part of the Programme Regulatory Group structure, focus on the development of the Retail Energy Code (REC), in particular developing and reviewing the REC technical and subsidiary documents. As the implementation of new regulations continues, the Regulations team will provide cross-programme support for managing the change and compliance with these changes. In the circumstance where DCC leads a consultation relating to the core CSS design, the Regulations team will also manage this process.

In addition to considerations by Ofgem, DCC has reviewed the implications of REC and SEC touchpoints and developed a set of intended approaches to manage them. The Regulations team has an ongoing remit to consider REC-SEC interaction and will continue to do so during DBT.

Commercial

The Commercial role within this Sub-Programme will give guidance on DCC's margins including incentivised milestones, recovery of margin, incentives and rewards. The Price Control activity will be conducted by a fixed member of staff belonging to the Price Control team who will be working part time on the Programme.

There needs to be regular dialogue between Commercial, Legal and Regulation leads to ensure alignment and compliance between contract and regulation.

The Commercial role will also be focused on the new service provider contracts and associated relationship management.

Industry and Communication

DCC recognises the importance and value of engaging with industry throughout the Switching Programme and has a defined approach to this engagement which will be presented to stakeholders, providing them with an opportunity to shape what and how we communicate. DCC is a major participant in key industry meetings including the forums listed in [Table 1](#). DCC also engages with industry stakeholders through individual meetings with DCC's Programme Director, DCC Industry Days, and DCC's Industry Partnership Managers.

Working with the SI, DCC will maintain a focus on those core system providers who are key to the delivery of the new switching framework. The core systems include new service providers under contract and Existing Service Providers under a Memorandum of Understanding.

We will also maintain transparency on our costs and contracts through regular summits. These summits will allow questions and answers with DCC customers and create an opportunity to review progress against this business case.

Design Integrity Function

The Design Integrity team functions across all sub-programmes. It consists of an enduring team of End-to-End Architects and Business Analysts dedicated to Switching to assure the CSS Provider designs, SI Integration, Business Architecture, Security, Data Model, Migration and Interfaces. They are responsible for ensuring that the above designs align end-to-end and conform to DCC's design strategies, as well as ensuring that the providers' designs are future proofed. Any findings and assurance will be presented by the Design Integrity team to the SEC and REC design and security boards.

5.2 Delivery Approach

This section sets out DCC's planned approach to delivering the activities required to deliver DB4. The purpose of outlining delivery plans as part of the DCC Switching Business Case is to establish a baseline set of activities, timescales and costs which DCC will report against during the DBT Phase. It is intended to set an initial programme budget for the delivery of Ofgem's requirements by DCC and its service providers and to provide transparency on the drivers of DCC costs, based on currently available information and documented assumptions. Note that this forms a baseline for the purposes of programme reporting but not for DCC's price control reporting.

Together, these elements determine the forecast costs of DCC's activities during the DBT Phase. This section explains the process we have used to generate each element of the approach.

DCC's delivery approach is underpinned by the following key artefacts:

- DCC Switching Programme Plan (see 5.2.3) – an MS Project plan that sets out the delivery activities, associated timescales and the resource types assigned to each activity. The plan is based on the baseline scope scenario defined in Section 3;
- Contractual agreements with new service and delivery partners – a contract that defines the service requirements, roles, responsibilities, timescales and financial incentives placed on new delivery partners;
- A multi-party agreement between the Existing Service Providers (ESP) and the SI, this will be available as a REC document. (DCC will be involved in its capacity as an ESP managing the DSP);
- RAID – this sets out the risks, assumptions, issues, dependencies and opportunities that underpin the DCC Switching Programme Plan, including the weighted costs of the high and low scenarios. The weighted costs of the high scenario together with other identified risks inform the level of contingency applied to the base costs, as set out in Section 9. The RAID is explained in more detail in Section 9.1 and is included in Appendix A;
- Requirements Traceability Matrix (RTM) (see 5.2.2) – the RTM is a tool to help ensure that the Switching Programme's scope, requirements, and deliverables remain "as-is" when compared to the baseline. Thus, it "traces" the deliverables by establishing a thread for each requirement from the project's initiation to the final implementation, i.e. from end-to-end. It provides confidence and clarity in the purpose of DCC's activities.

5.2.1 Requirements

During the earlier detailed level specification (DLS) phase of the programme a series of products were developed for different aspects of design and delivery. The products were intended to develop a delivery approach that gives due regard to risks around implementation and delivery.

The products set the expectations for the types of activity to be undertaken in the Design, Build and Test phase of the Programme. Further detail was then established as the design work evolved through to early in the Enactment phase.

Largely building upon these products, DCC led a piece of work on 'design to procurement'. Essentially this entailed the development or transfer from design products of specific requirements that together would ensure DCC and service delivery parties understood exactly what they were expected to deliver, including specific timings or standards.

Some 600 plus requirements – whether functional or non-functional - were included as part of relevant procurements and bidders were asked to confirm that they would be met by a proposed solution. One role of evaluators in the procurement was to assess that all requirements were met by the proposal. Requirements traceability will be an ongoing feature of the programme and ensure that service providers deliver as intended in the original design.

5.2.2 Requirements Traceability Matrix

In order to provide transparency to industry of DCC's involvement in the Switching Programme and the rationale for that involvement, a Requirements Traceability Matrix has been developed. Although the RTM covers the whole Programme, a key purpose of this matrix is to trace every element of DCC's costed solution underpinning this DCC Switching Business Case back to an agreed product and clearly relate this to the source of each requirement. This is a key piece of due diligence DCC has undertaken to provide traceability that DCC's activities relating to the Switching Programme are justified by clear requirements. The RTM is a key tool for ensuring that the solution is designed to cover all the requirements expressed in the Outline Business Case.

As detailed in Section 3, the majority of DCC's source Outputs stem from Ofgem's definition of DCC's role in developing and delivering a CSS and subsequent Licence amendments. In addition to these regulatory requirements, elements of DCC's solution can also be traced back to Programme documents across the design and commercial teams stored in shared drives.

5.2.3 Switching Programme Plan

Programme planning and plan management is critical to enable the successful delivery of any programme. The programme plan and milestones form the basis for each programme to monitor overall progress against their baseline plan.

DCC has developed Ofgem's initial programme-wide plan that identifies the duration of activities and the effort and roles required to deliver RP2a. The DCC Switching Programme Plan reflects our current understanding of activities based on the defined scope, key programme phases and deliverables, following joint planning with Ofgem. DCC's planned activities during the DBT Phase are summarised in [Figure 10](#).

A number of risks are included in the RAID (see Appendix A:) that capture the likelihood and impact of those durations being exceeded if specific risks materialise. We have supported Ofgem in its discussions with wider industry to help better understand the risks and allow the timescales in the plan to include some element of contingency to mitigate many of the risks previously identified.

The DCC Switching Programme Plan includes five incentivised milestones, as stated in Ofgem's Statutory Consultation on Licence Modifications for the Switching Programme¹⁵. These are outlined in greater detail in Section 8.

The following diagram shows the process DCC has followed in creating the programme plan:

¹⁵ Ofgem, 'Switching Programme: Regulation and Governance – way forward and statutory consultation on licence modifications', 15 October 2018, pg. 68: [Weblink to document](#)

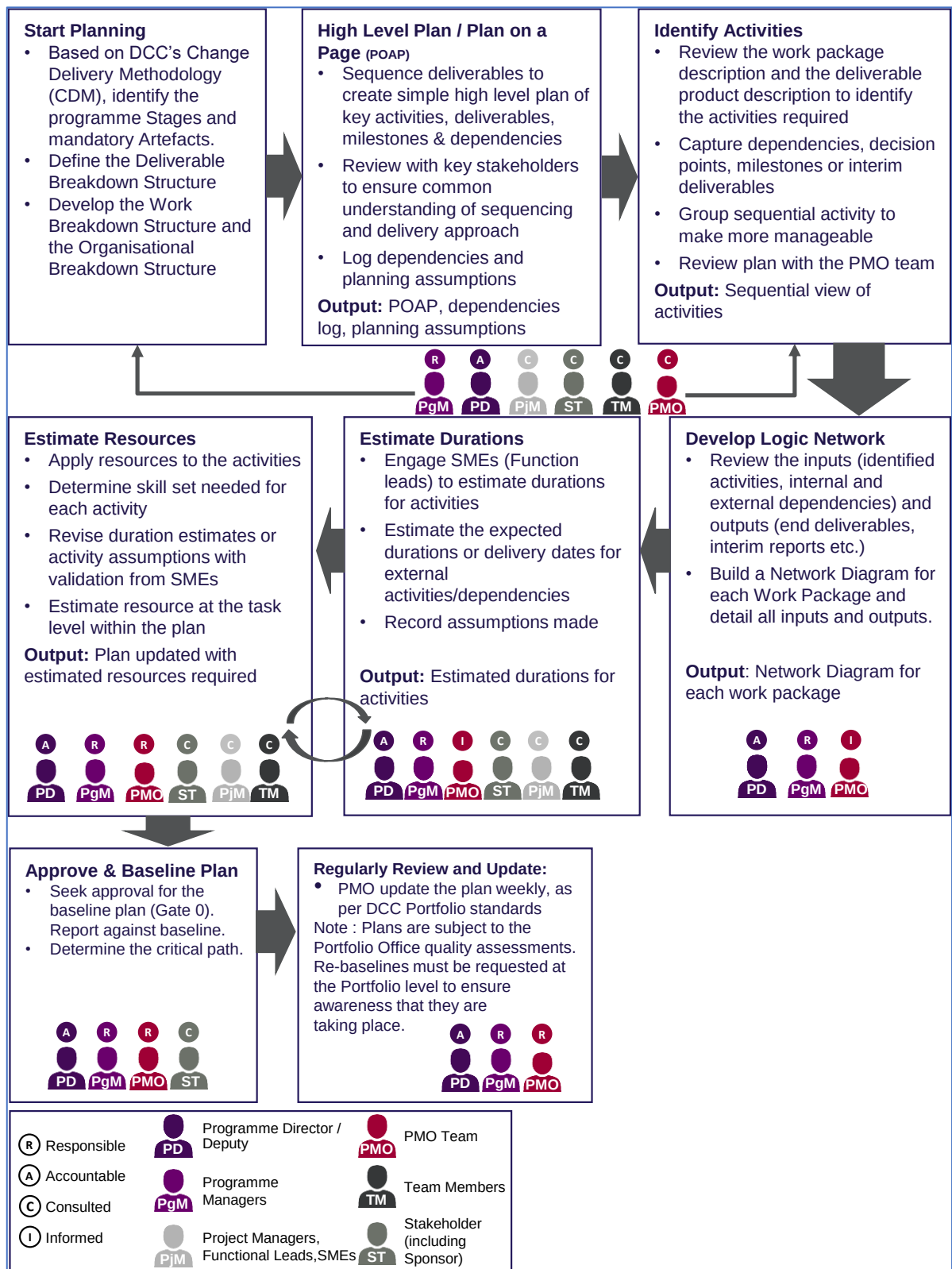


Figure 9 – Plan Creation Process

The plan in [Figure 10](#) below reflects the milestones and phases for all parties to understand. As mentioned earlier in this document (Section 5.1), DCC has organised its key activities to deliver the requirements within the following sub-programmes:

- Design, Build and Test Sub-Programme;
- Data Management and Migration Sub-Programme;
- Data Service Provider (DSP) Interface Sub-Programme;
- Operational Readiness Sub-Programme;
- Commercial, Regulatory and Engagement Sub-Programme.

The plan can be divided into the following key output phases:

- Design and Mobilisation (Feb 19 to Aug 19);
- Design, Build and PIT (Aug 19 to May 20);
- Testing (May 20 to Dec 20);
- Transition (Dec 20 to May 21);
- Go Live Range (May 21 to Aug 21);
- Early Life Support (Aug 21 to Sep 21).

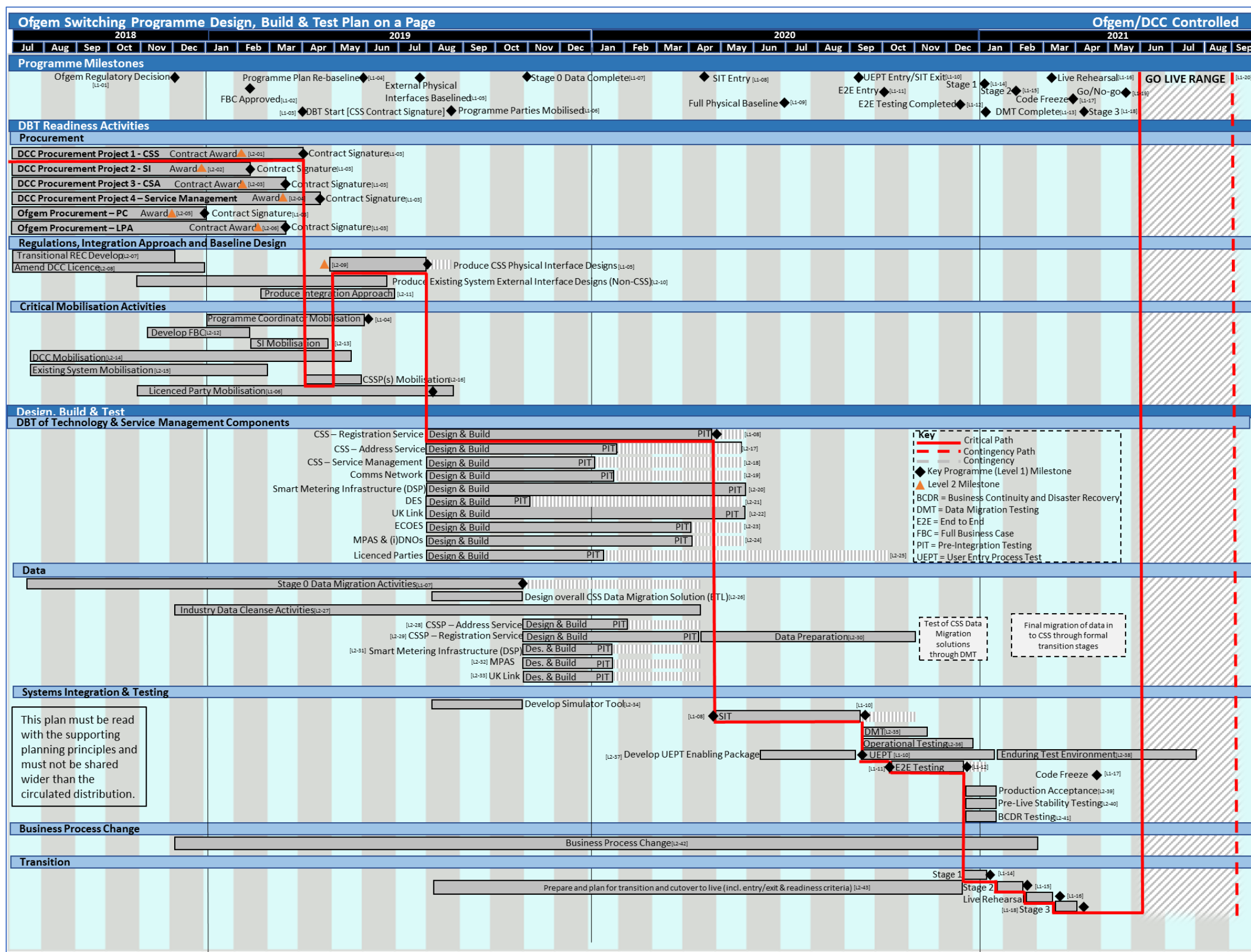


Figure 10 - Switching Programme – DBT (Delivery) POAP

Critical Path

The 'Critical Path' is the specific sequence of tasks that must be completed on time, in order for the Switching Programme to meet its deadline. It is regularly reviewed in both the high-level monthly meetings and the weekly sub-programme and leadership meetings. Identifying and managing the critical path milestones is fundamental to the Programme achieving its objectives.

The critical path is the longest length of time it will take to complete the project tasks, with the same level of resource/budget, i.e. if a milestone can be moved without impacting either the end date of the project or the date upon which benefits are realised, it is not on the critical path (provided it does not need more resource or budget to achieve this).

Any changes to critical path items are managed under change control. Extending or delaying the delivery of milestones on the critical path will affect the overall project timeline (and likely cost).

Identifying and monitoring the critical path gives the following core benefits:

- Clear visibility of dependencies between activities and projects;
- Programme Managers and Programme Directors can optimise efficiency by allocating resources appropriately and prioritising activities at or near the critical path;
- Increases visibility of the impact of plan revisions – as the critical path will shift through the plan as changes are made under formal Change Control;
- Encourages the reduction of the programme duration by optimising path, planning helps more coherent delivery, including parallel and sequential activities being understood;
- Enables the float (or slack) of each activity to be calculated and carefully managed (i.e. the amount of time an activity can come in late without impacting the project plan).

5.3 Key Outputs and Deliverables

DCC's primary outputs are those that enable DCC to meet the Programme objectives as defined in Section 3.1.3. Further to the Incentivised Milestones, DCC's timely delivery can be monitored against these outputs.

Previous phases of the Switching Programme had significant Product Breakdown structures as the user requirements and end to end design were developed. The Product Breakdown Structure for the DBT phase has yet to be formally agreed, however a likely list has been captured in Appendix B: and a selection is included below. All sub-programmes contribute to the generation of these artefacts.

Artefact
Mobilised resources
Governance Reports

Artefact
CDM Programme deliverables and adherence to gated process
Uplifts to E2E and CSS documentation to reflect approved Change Requests
Launch materials for CSS and SI mobilisation
CSS Service Management System
CSS User Portal
Trained Operational Team
Central Service Desk
Service Design Packs (work instructions, scripts, service designs)
BAT tested Services
Service Management Reports
Customer Journeys
Operational Knowledge Base (User Guides, FAQs)
DSP Interface Design Build Test Plan
DSP Interface Solution Design
DCC Approval to Proceed
DSP PIT Testing Plan
PIT Exit Report
DCC PIT Test Completion Certificate

Table 2 – DBT Outputs and Deliverables

5.4 Systems Integrator Role and Responsibilities

Throughout the execution of Design, Build and Test there will be a series of agreed key milestones that need to be achieved by DCC, its subcontractors, Existing Service Providers and the energy industry as a whole.

Key to the successful and timely delivery of this programme will be the role undertaken by the Systems Integrator whose responsibilities, under management of DCC, will be to coordinate and manage the activities of all Existing Service Providers and DCC's sub-contractors. The SI will oversee, co-ordinate and manage the integration, testing and transition to live operations of the CSS components and the changes to core systems and services, including associated data migration activities and design management.

Following a comprehensive tender and evaluation process, Netcompany was selected for the SI role based upon achieving the highest combined score across quality, technical and commercial elements. They have a thorough understanding of the industry, the requirements and the key issues and risks, focusing on collaboration as a key to success.

The Systems Integrator will ensure that those organisations for which it is responsible deliver on time. The role of the Systems Integrator will be particularly challenging as some of the organisations concerned will not have a direct contractual relationship with it or with DCC itself. DCC and the Systems Integrator will need to use their combined

expertise, as well as regulatory levers via Ofgem, to encourage collaboration with the industry organisations within our defined area of responsibility within the overall programme.

5.4.1 Service Provider Delivery

The baselined set of products issued at Design Baseline 4¹⁶ (DB4) on 22 June 2018 form the basis for phases included within the overall DBT Plan. At the commencement of DBT there are a number of mobilisation activities for each newly appointed service provider to agree their approaches, ways of working and interactions with the wider Switching Programme team including the Ofgem procured Programme Coordinator.

A new physical design baseline will follow soon after the start of DBT to reflect any changes to the design and approach that the contracted service providers make based on their proposals differing from DB4.

Key to successful delivery of the programme will be early agreement to a number of key products produced by the Systems Integrator and each of the CSS providers. These key products include an integration approach: setting out how the new systems will be integrated and tested with existing industry systems; and the physical design for the interfaces between the new CSS systems and existing systems across the industry. Product Descriptions for these key products were included in the tender packs to bidders for each of the new procured services. Other key products identified include the delivery plans for each of the CSS providers as well as the Systems Integrator itself.

Each of the delivery plans agreed with the newly appointed service providers will set out the key products that will be developed during the DBT phase.

The scope of DCC's role is determined primarily by its overarching regulatory obligations however, these typically need elaborating into more detailed activities to provide clearer instruction. This has been provided by specific work instructions from Ofgem.

5.4.2 Core Systems Assurance Function

DCC are procuring and contracting the Switching Core Systems Assurance (CSA) provider. This function will assure the delivery of the CSS, this being a combination of the Registration and Address Services plus the interfaces into Existing Service Providers. DCC has contracted the CSA function and it will be managed within DCC but must sit outside of the Switching programme.

DCC will contract manage the CSA and is accountable for the performance of the CSA. The Programme Coordinator will coordinate the CSA in accordance with the Milestone Assurance Framework to ensure that CSA assurance is consistent with the overarching programme approach to assurance.

¹⁶ Ofgem, 'Switching Programme: Publication of Design Baseline 4 (DB4)', 22 June 2018: [Weblink to document](#)

6 Contract Management

The approach to contract management under Switching is consistent with DCC's mandate to act in an economic and efficient manner. It also reflects the National Audit Office (NAO) good practice management framework¹⁷. This framework allows DCC to deliver to time, quality, requirements and the best economic value against a complex mix of contracts.

The following sections identify the areas of the above framework that are particularly relevant to DCC's processes and deliverables and includes some specific details on how they are implemented by DCC.

For Switching, the Central Registration and Address Services are identified as Fundamental Registration Service Capability (FRSC). The FRSC contracts are by far the most complex contracts and the management approach to those is not appropriate for most other Service Providers. The relevant DCC procurement processes are applied in many cases for other Service Provider contract updates or new services.

Contract management of the FRSC contracts is specifically carried out in accordance with the governance provisions detailed in Schedule 8 of the respective contracts.

Ultimately, we recognise that collaboration with our Service Providers is the best route for success, the achievement of value-for-money, and cost reductions. Therefore, we will continue to work together with our key Service Providers under Switching to develop continuous improvements. This includes programme managing change with them and prioritising activity.

6.1 Preparing for Contract Management

Transition from the preliminary contract award phase to the contract management phase is a key element of the successful commencement of any project. DCC has a defined transition process that facilitates a smooth handover to the contract manager(s), ensuring that the team remain focused on the core deliverables throughout the programme. DCC retains a commercial manager for up to six months from the start of a new contract. This allows any early concerns to be addressed and enables a handover to the relevant contract manager for the longer term. Should any contract management or programme performance issues arise, these will be resolved through the governance structure as defined in Section 4, ultimately escalating to senior level involvement if prior steps have not been able to resolve the issue.

Dedicated contract managers will be in place at the outset of this phase of the programme. They have a clear objective to provide management of a supplier against commercial requirements in the contract, using their skills and experience to manage the complex contractual arrangements within the programme. (Delivery requirements will be managed by others who will work with the contract manager on issues linked to the contract.) They also have the necessary authority to deal with any issues that may arise and to effectively manage the contract, using the appropriate software tools to track and report on progress.

¹⁷ NAO, 'Good practice contract management framework', December 2016: [Weblink to document](#)

6.2 Procurement and Contract Definition

Under its Licence, DCC was responsible for procuring systems and services required to deliver the new Switching Arrangements. Ahead of DBT, DCC have set out a strategy and plan for sourcing the specified CSS solution, including all the products and services needed to design, build, test, implement, operate and support the operation of the E2E switching arrangements, and a strategy for establishing relationships with Existing Service Providers. Full details of this strategy can be found in the E2E Procurement and Commercial Strategy programme document (note that this document is not in the public domain but was shared with industry stakeholders ahead of procurement).

6.2.1 DCC's use of Procurement Frameworks

(External services outside relatively large Service Provider contracts)

Occasional consultancy or legal support has been necessary in the Enactment phase and may also be required in DBT. These services will be covered under Non-Staff Costs as detailed in Section 10.1.3. Where the contract is of short duration, value for money is achieved by the application of the competitive procurement requirements of the DCC Procurement Strategy. To make this process more effective DCC has set up procurement frameworks for areas where recurring procurements occur. These are:

- Audit and Assurance;
- Consultancy;
- Legal Services.

These frameworks allow DCC to mobilise external support quickly, which is important in a programme environment. They also provide clarity of pricing through the use of rate cards and allow DCC to benefit from negotiated discounts.

6.2.2 Benchmarking

Where External Service Provider contracts extend over a number of years, DCC has included provisions in the contract for the benchmarking of the service to ensure continuing value for money. In addition, rather than awarding contracts for the full Licence term, some contracts have break clauses, which can be triggered by DCC, to ensure that there is an incentive on the Service Provider to maintain service levels.

6.3 Managing the Ongoing Contract

6.3.1 Managing Service Provider Performance

Open, two-way communication between DCC and its Service Providers (both new and existing) is a fundamental factor in the commercial management of the programme. This can be both formal and informal depending on the nature of the communication.

Having a strong relationship with the Service Providers, and working closely with them throughout the programme, will ensure that minor issues can be quickly resolved, and more significant issues can be efficiently flagged, tracked and resolved with minimal disruption. This relationship and related processes enable the programme to benefit from any innovation and developments from the Service Providers where applicable.

DCC ensures that a detailed performance management framework is in place at the point of contract signature; this enables DCC to efficiently resolve operational issues and set key programme milestones and any related incentives. This framework provides the structure for formal performance reviews with the Service Providers, where any issues with Service Provider deliverables can be flagged and resolved. A similar approach will be put in place in the form of a co-operation agreement between the SI and Existing Service Providers.

DCC will proactively manage the performance of its Service Providers through the following:

- Assessing the performance of implementation and testing;
- Assessing the operational performance;
- Assessing performance of data security;
- Assessing performance of business continuity;
- Assessing performance of on-going financial viability.

If performance in any the above areas fails to meet DCC's expectations, this could have a direct resource impact on DCC; DCC would need to implement remediation plans as laid out in the contract's performance monitoring regime (Schedule 2.2 of each contract) to minimise the delay to services being delivered.

6.3.2 Managing Market Issues

DCC proactively monitors changes in the market or wider changes that could impact a supplier or their parent company, e.g. Brexit may impact on decision timings if there is a change request. Such issues are closely monitored by DCC as they could have a direct impact on the contract, but responsibility does not lie with the supplier.

6.4 Payment and Incentives

DCC will incentivise innovation and accommodate design modification within contracts – bidders' processes for innovation and adaptability were tested extensively in tender evaluation. Incentives are a key part of Contract Fundamentals and are covered in Section 6.7 (Incentives and Cost of Failure).

DCC has processes in place to ensure that any payment made to a supplier is in line with both the relevant contract and any incentive milestones that have flowed down to the Service Provider.

Each invoice received for payment of charges is checked:

- For accuracy;
- That it falls within the agreed price (for aspects with a firm price agreed at contract award);
- That the associated deliverables have been satisfactorily received by DCC;

- That any related Milestone Achievement Certificates had been issued by DCC (where applicable);
- That labour costs are consistent with the relevant contract labour rate card for Impact Assessments and Project Requests.

Depending on the total cost incurred, refinancing can be used so that costs to DCC customers are profiled over a longer period than the costs incurred by DCC within DBT.

More details on the approach to profiling the costs to industry are included in Section 10.1.1.

DCC relies on multiple tools to ensure that all parties within the contract arrangements deliver to quality and time. These include the following:

- Performance measures regime – depending on the nature of the service failure this potentially leads to rectification plans, step-in and enhanced scrutiny, and termination rights;
- Value for money (benchmarking), and audit and record keeping provide routes to verify contractor performance for value for money;
- Continuous Improvement mechanisms within the Licence provide the drive to continually improve performance standards;
- The contractors must produce and comply with Quality Assurance Plans.

The new contracts are largely based on the SMETS1 template, therefore they include all the previous indemnities and termination rights which in themselves can be used to manage the contractor if they are not performing.

6.5 Contractual Management of Risk

DCC has a risk framework in place which sets out the categories of risks and defines the tolerances. The definitions of the various risks are as follows:

- Enterprise: Risks that interfere with the organisation's objectives and/or may have a negative reputational impact;
- Functional: Risks that impact DCC's ability to deliver to the business plan;
- Programme: Risks that impact delivery of programme milestones and the implementation of deliverables to agreed scope, time and quality criteria.

DCC's approach to risk management is that each risk must have a named individual who is accountable for maintaining and managing the risk on a regular basis, including involving the Service Providers as necessary. Risks are managed as follows:

- Risk and mitigation owners track, and review risks as required;
- Enterprise risks are reviewed regularly at the DCC Board;

- Enterprise and functional risks are reviewed regularly by the DCC Executive Committee (ExCo);
- Programme risks are reviewed monthly by the Programme Directors and exceptions reported to ExCo;

Dispute resolution processes and contingency plans in addition to mitigations are in place to cover any fundamental failures or issues with the contracted Service Providers. These plans and any relevant exit strategies are monitored and updated throughout the programme, any enactment of these plans would be subject to the clearances covered within this document.

6.6 Management of Contract Changes

Contracts with all Service Providers are reviewed and updated according to defined processes which vary depending on the scale of the change and the impact on the programme. These processes cover the definition of the change and the approvals required and help to ensure a smooth change procedure.

DCC's Change Process occurs in parallel to and support of the Ofgem Change Process. Where any change relates to a change in baselined documents the Ofgem Change Process will be followed along with DCC's internal process. In almost all cases a change to a contract will follow an agreed change through Programme governance or to reflect regulation changes. Any changes in price will be subject to scrutiny; our regular and consistent procurement and re-procurement activities (as discussed in Section 6.2.1) ensure that costs are 'market-based'.

6.7 Contracted External Services

DCC staff will work in partnership with contracted and non-contracted service providers (ESPs). The following section covers the capabilities procured by DCC during the Enactment Phase and the commercial management of contractors DCC will undertake over the period of DBT.

The table below reflects the capabilities agreed with Ofgem under a Procurement Strategy in the Enactment Phase. The actual alignment of contracts to these capabilities reflects decisions in the procurement process around securing 'best in breed' in specific capabilities, efficiencies in combining delivery, etc. Cost data on external services is presented in Section 10.1.5 in an aggregated form.

Capability	Requirements Summary
Registration Service	The design, build, test, transition and operation of the Registration Service which manages the gas and electricity registrations and associated data (including addresses and RMPs). A single contract with Landmark Information Group Limited is in place and covers the requirements for both Registration and Address Services. The contract obliges Landmark to deliver the following: • Develop and maintain Physical Design and interfaces for Registration and Address services; • Support the SI in development of CSSIA and CSSIP; • Procure and integrate the underlying address data sets; • Development of Registration and Address services; • Conduct Pre-Integration Testing; • Prepare for and execute SIT; • Connect to existing industry comms networks; • Integrate with Switching Operator and SMS Tools; • Prepare for and execute DMT; • Prepare for and execute E2E Testing; • Prepare for and execute CSS Data Migration and Transition; • Match source registration data to GB source address data sets; • Support Cutover to Go-Live; • Prepare for and execute Early Life Support. These services will be provided throughout DBT and Early Life Support. The contract also obliges Landmark to deliver the following and for a minimum of five years after Go Live: • Operate the Registration and Address service; • Provide 2nd and 3rd level support on an ongoing basis. Delivery of the solution will be via: • A core delivery team of 6 – 11 staff through DBT with 11 post-Go Live; • Address matching and data quality teams based in their Exeter delivery centre; • Solution development teams based across the Exeter and Reading delivery centres and co-located with SI staff in London; • Data centres for solution hosting in their Newport and London Microsoft Azure locations.
Address Service	The design, build, test, transition and operation of the Address Service, which manages a complete list of GB standardised addresses and performs address matching. A single contract with Landmark Information Group Limited is in place and covers the requirements for both Registration and Address Services and is summarised above.

Capability	Requirements Summary
Switching Operations Service	The design, build, test, transition and operation of services and systems that are required to manage the live switching arrangements including first-line service desk, centralised service management system, self-service interface portal and interfaces with Existing Service Providers. This requirement is covered by both DCC and contracted services. The external contract will be capable of signature at the end of May 2019 with signature expected within early June 2019
Systems Integration Service	The management of the integration and testing, data migration and transition activities of systems and services across the CSS components and between the CSS Service Providers and Existing Service Providers, including co-ordination of interfaces with Market Participants. A contract with Netcompany is in place. This contract obliges the Systems Integrator to deliver the following: • Develop and maintain the Core Systems and Services Integration Approach and Plan; • Prepare and mobilise for DBT; • Monitor and control readiness towards the first physical design baseline; • Oversee Pre-Integration Testing and monitor readiness for Systems Integration Testing; • Prepare for and execute SIT; • Prepare for and execute UEPT; • Prepare for and execute OT and DMT; • Prepare for and execute E2E Testing; • Prepare for and execute CSS Data Migration and Transition; • Support Cutover to Go-Live; • Prepare for and execute operational Transition for CSS and Core Systems; • Prepare for and execute Early Life Support for CSS and Core Systems. To support delivery, the System Integrator delivery model is underpinned by key functions and capabilities: • Programme management and control providing PMO, integrated planning and scheduling, risk and dependency management, change management, stakeholder management, supplier collaboration and reporting; • Design coordination / management – Design issue management, design assurance, requirements traceability, and security risk management; • Test and environment management – Test assurance, test planning and mobilisation, test management and execution, defect management, test automation and simulation, and environment Management; • Data migration (DM) and transition – DM approach and planning, transition approach and planning, and release management; • Post implementation services – Service introduction and transition, early life support (management), and operational transition. These system integrator services are provided up to the end of Early Life Support.

Capability	Requirements Summary
Service Infrastructure	The design, build, test, transition and operation of the infrastructure on which the Registration and Address Services can operate. These will be embedded within the combined Registration and Address service. This requirement is captured by other contracts.
Comms Network Service	The management of the design, build, test and operation of the Communications Network(s) which is required to enable transmission of data to/from the CSS. This includes relevant security provisions. Currently the two planned communication networks are IX (provided by Xoserve) and DTS (provided by ElectraLink. Any future integration with other REC compliant networks will be managed through the change procedures as defined within the REC. The User Agreements with ElectraLink, expected to be signed in June 2019, and with Xoserve, expected to be signed later in 2019, will cover this requirement.
Existing Service Providers	Existing Service Providers are those organisations who have a role in current switching and will need to continue some role under faster, more reliable switching. ESPs reflect a mix of sponsoring organisations, delivery bodies and contractors. In order to define the ways of working and to ensure cooperation between the service providers of the energy industry during the Switching Programme, a cooperation agreement/Memorandum of Understanding has been drawn up for signature. The following participants are parties to this agreement: Xoserve, ElectraLink, MRASCo, Netcompany, and DCC as the smart meter Data Service Provider.
Licensed Parties	Licensed Parties must support achievement of the Go Live date (under transitional obligations and conditions set out in the REC). The establishment of Licensed Party capability is outside the scope of DCC's role and is not discussed within this document.

Capability	Requirements Summary
Assurance Service	DCC will establish a Core Systems Assurance Service to assure the Design Build and Test activities of the new service providers and the Existing Service Providers. Ofgem will likewise establish central assurance services. These Ofgem procured services are not included within this document. A contract with Expleo covers this requirement. The contract obliges Expleo to deliver the following: • Assurance of the readiness of the CSS providers, SI and DCC to deliver the First Physical Design Baseline; • Assurance of the Assured Parties to achieve the Programme Milestone relating to Commencement of Design, Build and Pre-Integration Testing; • Assured Parties to achieve the Programme Milestone relating to Completion of Design, Build and Pre-Integration Testing; • Assurance of the Assured Parties' readiness to enter and exit System Integration Testing; • Assurance of the Assured Parties' readiness to enter and exit Data Migration Testing and Data Preparation (which will include completion of any Design Build and Test of Data Migration Software to be used); • Assurance of the Assured Parties' readiness to exit User Entry Process Testing; • Assurance of the Assured Parties' readiness to enter and exit Production Acceptance Testing; • Assurance of the Assured Parties' readiness to enter Pre-Live stability Testing; • Assurance of the Assured Parties' readiness to enter and exit BCDR Testing; • Provide assurance of the Assured Parties' readiness to enter and exit each Transition Stage (including Live Rehearsal); • Assurance of the Assured Parties' readiness to Go Live; • Assurance to exit Post Implementation Support milestone; • Bi-annual Health Check Reviews.

Table 3 – Capabilities to be Procured or Secured

DCC has entered into with third parties to deliver the Switching programme, each of which reflects functional and non-functional requirements.

A number of considerations have been taken into account when drafting contracts.

Contract Fundamentals:

- DCC's preference was to establish contracts where possible rather than rely on Regulatory instruments;
- Contracts have the ability to be novated and include appropriate provisions that allow for passing of Smart Metering and Switching responsibilities to different Parties and at different points in time;
- Contracts incorporate (at a cost that is not disproportionate to any expected benefit) sufficient flexibility to adapt to changing services user requirements over the duration of the contract;

- Enduring contracts have been defined for the CSS and Service Management providers to ensure continuity of service;
- An optimum contract term for each service has been established, short or long term, but not co-terminus with the DCC Licence. Contract length will be determined on the total contract value to the supplier and return on investment that could reasonably be expected by the supplier. Contracts will include breakpoints for DCC to terminate for convenience at key milestones in the contract. Contracts will include options for DCC to extend up to multiple times for shorter periods to allow flexibility of contract novation or handover to new suppliers;
- Interdependencies between contracts will be managed through co-operation agreements, or obligations can be written into bilateral contracts. DCC will determine the most appropriate mechanism. Contract reviews and consistency monitoring will ensure that items such as performance measures are consistent between contracts;
- Incentives and penalties for cost of failure have been considered during contract negotiations with service providers;
- There is a full schedule on Business Continuity and Disaster Recovery (BCDR) in all the contracts (Schedule 8.6). The only contract for which this does not apply is the CSA since they are not producing anything that needs protecting in this way
- Contracts include Functional and Non-Functional Requirements;
- Contracts include DCC's Mandatory Licence Requirements;
- Contracts support Data Migration activities and a transition phase between DBT and Operations.

Intellectual Property Rights (IPRs):

- Any existing (background) IPR owned by a third party, which DCC wishes or is required to use to undertake or deploy the services must have the ability to be novated to any successor Licensee. Any such background IPR will be licensed to DCC at a fair price negotiated by DCC. DCC will require that such licences permit itself and any other subcontractors that might require to use such IPR is covered by that licence, with the aim to be perpetual licences. However, due to a potentially limited market for any IPR, DCC must protect itself against any unreasonable/monopolistic exploitation.
- Any newly developed (foreground) IPR will be owned by DCC on behalf of Industry and will have the ability to be novated to any successor Licensee or future CSS operator. Any such DCC IPR may be made available under licence to third party organisations at commercial rates.
- The REC includes new provisions which focus on any IPR arising out of involvement in the REC code. With reference to contract negotiations, the REC dictates that DCC must ensure that all contracts include provisions for IPR to be transferred to either the RECCo or the Successor Provider in the event that DCC ceases to provide the Switching service. The REC also determines that DCC

must give due consideration to the cost and impact on Users of using any IPR within the Switching service.

Value for Money (VFM):

- Contracts will ensure VFM in the total cost and impact to industry, taking into account considerations beyond cost (e.g. soft skills, role and pricing models).

Incentives and Cost of Failure:

- Sufficient controls will be put in place to ensure it is possible to remedy vendor failure (for example, but not limited to, break clauses and VFM assessments);
- Goal Congruence must apply throughout all contracts and other arrangements under which the CSS is established. Standard contract schedules will be created for each Service Provider contract to support this;
- In order to ensure that the Supply Chain is motivated by the same goals as DCC and Ofgem, we will build into the contracts an incentives and Cost of Failure structure so that Goal Congruence is achieved;
- An incentive payment could be earned by the supplier for delivering against a Milestone (which could be qualitative, or time based) without the use of contingency:
- Missing this Milestone would mean that the Supplier loses incentive payments;
- If a Service Provider then misses a contingent Milestone date it will be in a Rectification period where all of its margin is at risk;
- This margin will be incrementally lost as a pre-agreed Rectification period is consumed until all of it is lost, e.g. 20 working days later;
- If rectification is still not achieved, then to the extent third party costs are being incurred as a result (e.g. developers are being retained by another party who is waiting for code to pass through Testing) Third Party Costs will be incurred by the Supplier;

Conflicts of interest:

- Procurement of assurance services – provisions must be in place to ensure a barrier to conflicts of interests.

7 Resourcing

DCC's programme team structure during the DBT phase is shown below. The programme team is divided into five sub-programmes headed by one core function. It should also be noted that the Design, Build and Test (DBT) sub-programme will be supported by two functions, those being the Design Integrity and Testing Services Function. The breakdown is as follows

- Leadership and Portfolio Management Office function
- Design Build and Test (DBT) sub-programme
 - Design Integrity Function
 - Testing Services Function
- Data Service Provider (DSP) Interface sub-programme
- Data Management and Migration sub-programme
- Operational Readiness sub-programme
- Commercial, Regulatory and Engagement sub-programme

The structure includes both permanent and temporary (i.e. contractor and consultant) roles and represents the peak resource requirement during this phase. DCC intends to maintain a ratio of no more than 25% contractors relative to permanent staff. This is a cost-effective resourcing approach but recognises that some specific skills - only available outside DCC - will be needed on a time-limited basis. This ratio will be reviewed by the CFO on a monthly basis and if the DCC Programme exceeds the 25% ratio a remedial plan will be developed and actioned until the balance is 'compliant'. This metric is also reported to the Programme's governance.

DCC's team will be working on two main sites, one in London and one in the North West. The majority of the DCC Switching team work in the London office.

The diagram below shows DCC's proposed organisational model for the DBT phase, divided into sub-programmes and core Switching Programme functions. The sub-programmes framework provides the leadership structure through which the programme resources will operate, thus allowing resources to be allocated to specific tasks as necessary.

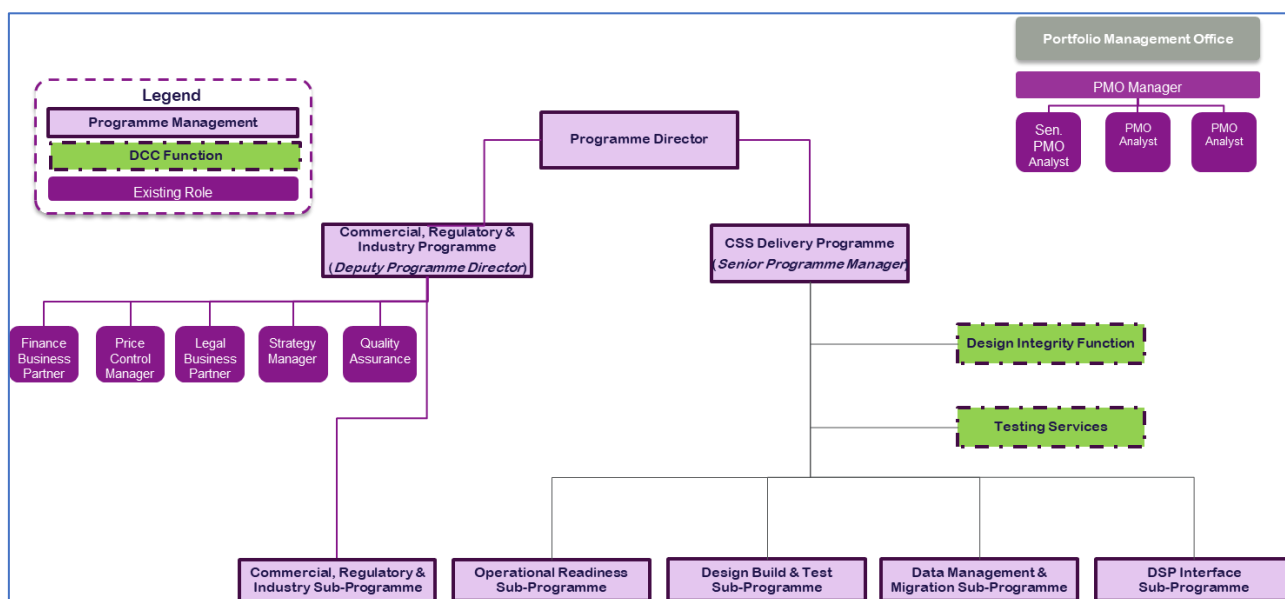


Figure 11 – DCC’s Proposed Switching DBT Organisational Model (April 2019 – September 2021)

Based on the capabilities required to carry out each activity and the level of effort required for each activity, DCC have generated a resource profile that shows the FTE requirement per role, which generates the number of roles that DCC will recruit. This plan is based on our current understanding of the requirements for DBT and has been generated through close collaboration between DCC colleagues and the Ofgem Switching Programme leads. There is inherent uncertainty in estimating the level of effort that is required to deliver planned activities, therefore estimating risk has been included in the RAID (Appendix A:) and cost and time provisioned in contingency to acknowledge this risk. The tables below give an overview of these resources.

DBT Role	DCC Function	Responsibilities
DCC Leadership and Portfolio Management Office		
Programme Director	Programme Management Practice (PMP)	The Core Programme team will lead the DCC Switching Programme, interfacing with Ofgem and Industry. They will lead the engagement with programme governance and industry stakeholders. Given the scale and significance of the programme and the regular need for cover across a range of meetings and engagement with multiple senior stakeholders, the pre-June 2019 levels will continue.
Deputy Programme Director		
Senior Programme Manager		
Quality Assurance	CTO (Technology)	There is an ongoing need to assure the quality of written outputs from the programme given the presentational and reputational risks. This will be heightened as we consult on issues and have more external communication.
PMO Manager	PMP	Deliver PMO capability and assurance, support and advise team and wider programme.

DBT Role	DCC Function	Responsibilities
PMO Analysts		The Senior PMO Analyst and the PMO Analysts ensure project information is captured, stored and logged in a logical, clear manner in one source, and ensures best practice and governance is adhered to and monitored. Senior PMO Analysts and PMO analysts report to the PMO Manager.

Table 4 – Leadership and PMO Resources

The following chart details the resource profile for the Leadership and PMO sub team from May 2019 to September 2021.

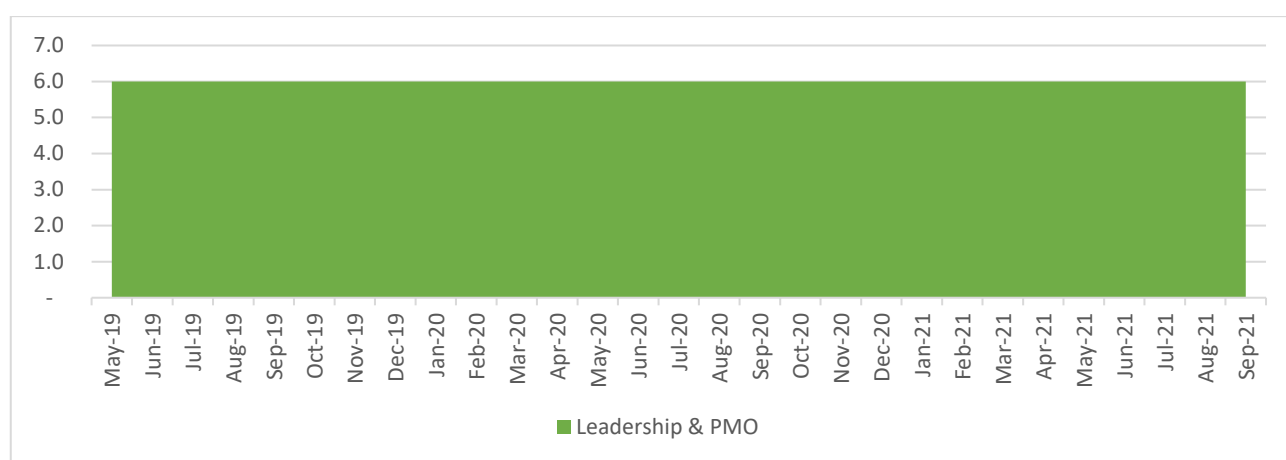


Figure 12 – Leadership and PMO Resource Profile

DBT Role	DCC Function	Responsibilities
DBT Sub-Programme Resources		
DBT Sub-Programme - Core Resources		
The DBT sub-programme resources combine project management and some technical assurance focused on the intended solution. The roles will be deployed throughout the duration of the DBT phase.		
DBT Programme Manager	PMP	The Programme Management team takes overall responsibility for the management and delivery of the Central Switching Service and handing over to Operations. This team manages the planning, execution, monitoring and reporting of the DBT delivery programme. Senior project managers are responsible for the day-to-day management and delivery assurance of their respective areas, as well as commercial and stakeholder management, throughout the DBT phase. They manage any escalations into the appropriate body. They will also work with the SI and
DBT Project Manager		
DBT Senior Project Managers		

DBT Role	DCC Function	Responsibilities
		CSSPs to ensure transition activities are planned and executed accordingly.
Technical Solution Lead	CTO Design Architect	The Technical Solution and CSS Design Leads are subject matter experts (SME) with a detailed understanding of the delivery requirements for their respective technical areas, inputting into solution designs, approaches and plans, and day-to-day liaison on technical matters for the end-to-end solution. They are responsible for issue resolution and appropriate action and liaise with Industry and Ofgem/Rec Co on technical matters.
DBT Sub-Programme - Testing Services Function Whilst Testing Services will operate as a Function, the resources working within it are recorded as part of the DBT sub-programme resource profile. The Testing Services Function will require the presence of the Test Assurance Manager throughout the delivery of DBT. The Manager will be supported by two Senior Test Analysts which forms the core support team. The Test Services Lead will be onboarded during the Design, Build and PIT phase followed by further Test Assurance resources as required. Other resources relating to the testing governance and non-functional testing SME will be engaged during the Design, Build and PIT stages.		
Test Assurance Manager	CTO	The overall Test Assurance team manage the assurance of testing throughout the Programme including all functional, non-functional and operational test phases. They are responsible for the assurance of all test activities for the CSS and SI Service Providers throughout the delivery, provide assurance of test planning, test deliverables and test execution, and work collaboratively with the SI to assure the CSS. This team are responsible for the assurance of the following tests: - User Integration Testing led by the SI, including User Entry Process Testing and End-to-End Testing; - Pre-Integration Test for ESPs (light touch); - System Integration Test (full assurance); - DSP (full assurance); - Data Migration (full assurance); - Production Transition and Proving testing; and will manage: - Operational Acceptance Testing (OAT); - Business Acceptance Testing (BAT). (Note that all BAT and some OAT is managed by DCC Test Assurance).
Senior Test Assurance Analysts		
Test Assurance Governance		
Testing Services Lead		
Non-Functional Testing SME		
Test Assurance Analysts		
DBT Sub-Programme - Design Integrity Function While Design Integrity will operate as a standalone Function, the resources working within it are recorded as part of the DBT sub-programme resource profile.		

DBT Role	DCC Function	Responsibilities
The resources required will be deployed throughout the duration of DBT aside from the Interface Architect. This resource is planned to be rolled off during the Transition phase.		
Design Architects (E2E Architects, Interface Architect, Release/Build Architect, Business Architect)	CTO	The Design Integrity Function team collectively deliver and maintain the E2E and CSS design, including the Requirements Traceability Matrix (RTM), and provide support to the DBT and Operational Readiness activities in the delivery of the CSS solution. The team lead has particular responsibility for driving the innovations/future market development initiative. Each Design Architect is responsible for the designs of their respective technical area.
Security Architects and Assurance	Security	The Security Architects team are responsible for the day-to-day Switching Security requirements definition and assurance with SI, CSS, ESPs and DSP. They are responsible for: • Defining security risks and elaborating on appropriate controls to mitigate those risks; • Providing assurance that the security controls are being correctly implemented; • Supporting iterative build; • Liaising with SEC and REC Security forums; • SMIKI and MIKI Credentials; • Reviewing physical designs; • Supporting security testing and assurance activities.
Business Analyst (Requirements Assurance)	CTO Business Analyst	The Business Analysts (BA) work on a day-to-day basis with CSSPs on requirements elaboration and clarification, review requirements and designs. They ensure the end-to-end Requirements Traceability Matrix is up to date and auditable. The relevant BAs are also responsible for updates to Abacus and the Requirements Traceability Matrix (RTM).
Business Analyst (RTM and Abacus)		

Table 5 – DBT Sub-Programme, Testing Services and Design Integrity Resources

The following chart details the resource profile for the Design, Build and Test sub-programme team as well as the resource profile for both Testing Services and Design Integrity functions from May 2019 to September 2021. The resourcing levels for the Design Integrity and Testing Services functions are expected to vary over time. The Design Integrity team's focus will move from supporting the creation of the physical interface specifications to supporting the transition to live, with some overlap as necessary. The Testing Services team will be active throughout the DBT phase, with a peak of resource requirements during the course of acceptance testing and issue resolution. The Test Assurance Analysts are gradually engaged in the Programme to enable them to become adjusted and deliver on the Business Acceptance Testing (BAT) and Operational Acceptance Testing (OAT) phases.

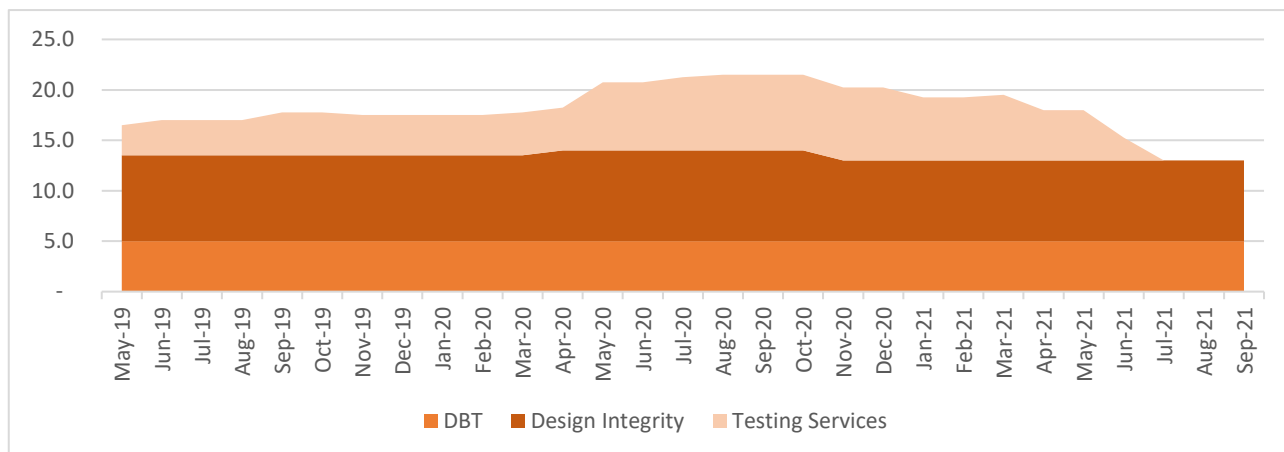


Figure 13 – Design, Build and Test, Testing Services and Design Integrity Resource Profile

DBT Role	DCC Function	Responsibilities
Data Management and Migration Programme		
Data Management and Migration Programme – Core Resources The Data Management and Migration Programme resources will be deployed throughout the duration of DBT. One of the few exceptions will be with regards to the Data Analysts which are planned to be rolled off during the Transition phase of the Programme as their main deliverables will be complete.		
Data Programme Manager	PMP	A technical management team to manage the Data Management and Migration team to work with Existing Service Providers to ensure data quality criteria are met.
Data Project Manager		
Design Architects (Data Migration Lead, Data Architect, Data Analyst)	CTO	The Design Architects maintain the data designs, including the Requirements Traceability Matrix (RTM) and provide support to the DBT activity in the delivery of the CSS solution. They work with Existing Service Providers and CSS Providers to ensure that the data requirements and data migration tools are defined and delivered, and that the data quality meets the Switching Programme's objectives. They ensure there is no data loss during migration and any data exceptions are addressed by the relevant data provider/owner, leading on the resolution of any data issues.

Table 6 – Data Management and Migration Sub-Programme Resources

The following chart details the resource profile for the Data Management and Migration sub-programme team from May 2019 to September 2021.

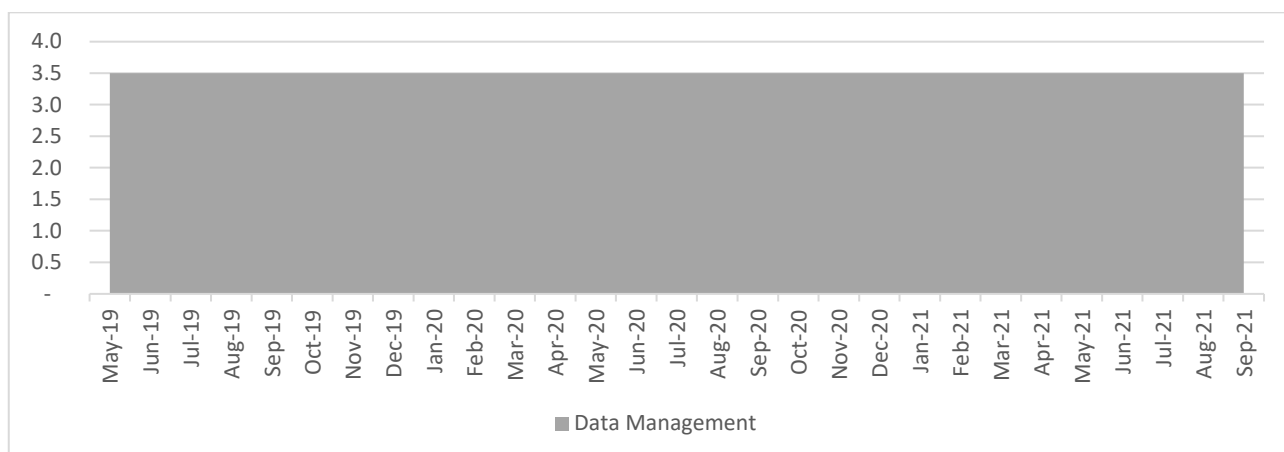


Figure 14 – Data Management and Migration Resource Profile

DBT Role	DCC Function	Responsibilities
DSP Interface Sub-Programme Resources		
The DSP Interface sub-programme will be made up of the DSP Interface Programme Manager and Project Manager. This team will also receive support from the SMEs listed below, however their time on this sub-programme will range from an estimate of 10% – 20% of resource time. These resources will therefore be shared between sub-programmes and are listed below to show that part of their time is tied with the DSP Interface sub-programme. BA and Security time will be via 'call off' on a case-by-case basis aligned to related/dependent activities under DBT.		
DSP Interface Programme Manager	PMP	Manage the planning, execution, monitoring and reporting of the DSP Interface sub-programme.
DSP Interface Project Manager		
Design Architects (Solution Architect, Design Assurance Lead)	CTO	The Design Architects focus on their respective areas to assure the overall design and architectural integrity of these areas, ensuring that they align with the requirements and conform to the solution architecture in delivering the business objectives. They are responsible for incorporating any developments of the REC (and implications for SEC) and any subsequent compliance. The enterprise architect provides architectural integrity within the CSS solution including the DSP Interface and the overall DCC business architecture.
Enterprise Architect		
Test Assurance Lead		
Service Operations Lead	Operations	Provide operational requirements for the introduction of the new interface, define any required changes to the Service Design and Operational Procedures.
Commercial Lead	Commercial	

DBT Role	DCC Function	Responsibilities
Regulation Lead	Regulation	Provide overall Commercial and Regulation lead for the DSP interface solution to ensure that updates are contractually captured, and operational impacts are captured in, and subsequently compliant with, the SEC and REC.
BA and Security	Security and CTO	Resource time will be drawn down on a case-by-case basis from overall allocation under DBT.

Table 7 – DSP Interface Sub-Programme Resources

The following chart details the resource profile for the DSP Interface sub-programme team from May 2019 to September 2021.

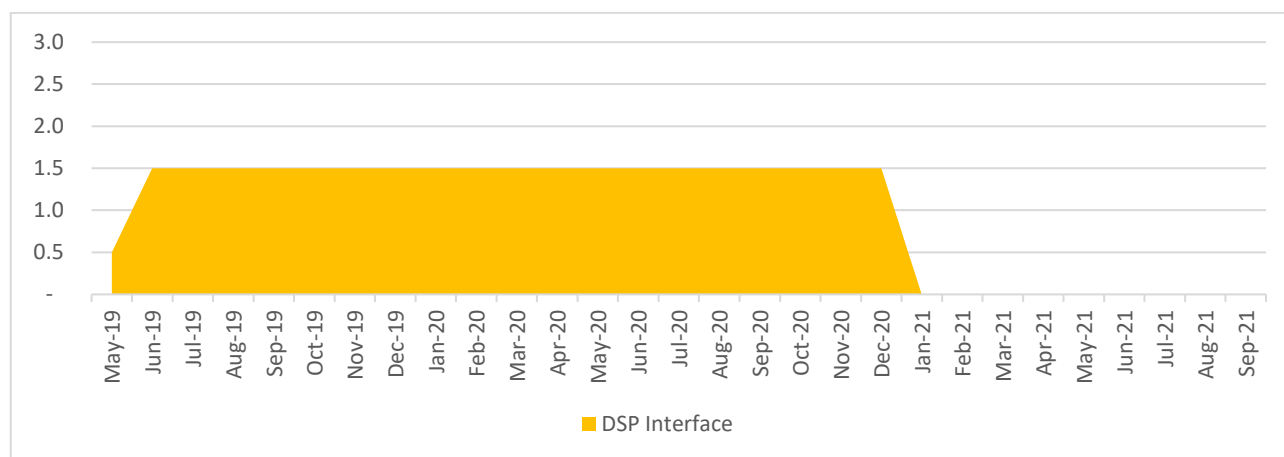


Figure 15 – DSP Interface Resource Profile

DBT Role	DCC Function	Responsibilities
Operational Readiness Sub-Programme Resources		
Operational Readiness Sub-Programme – Core Resources All resources pertaining to the Operational Readiness sub-programme will be deployed throughout the duration of DBT. This team will consist of a single Programme Manager supported by three technical assurance roles. This is to ensure that the CSS, CSA and SMS are transitioned in a consistent manner, whilst ensuring that transition to the existing DCC operations is enacted effectively.		
Programme Manager	PMP	The Operational Readiness team are responsible for the design and delivery of the Service Management solutions as well as ensuring that the overall solution is ready for handover to Operational Support. The team will deliver associated work packages, including: Customer Journeys, Performance Measures, Requirements and Levels, User Guides, Operations Training, Switching Domain Data, Service Desk Changes. Support BAT testing and Early Life Support (ELS). They are also responsible for performance metrics definition, service and operations, management
Operations Programme Lead	Operations	
Business Analysts		
Operational Performance (Reporting and Metrics)		

DBT Role	DCC Function	Responsibilities
		requirements, and operational performance reporting.
Operational Readiness Sub-Programme - Service Management Design Resources The Service Management Design team will require the deployment of all resources during the Mobilisation and Design, Build and SIT phase.		
Service Design Architects	Operations	Service Management design work packages (June 2019 – Apr 2020): • Define Service Design Package • Service Design and REC Impact Assessment • Service Catalogue • Service Management Service Designs Packages • Supporting Artefacts (inc. transition) • Facilitate the Knowledge Gathering required for Knowledge Base (KB) Articles • Update to DCC Target Operating Model Service Management System and Portal work packages (June 2019 – Apr 2020): • Service Management System Design • Service Portal Design • Interface with other SMS • Service Management System (configuration data activities) • Service Management System (setup and configuration activities) • Service Portal (setup and configuration activities) • Service Portal (final setup and configuration) Ongoing support to go live (May 2020-Aug 2021) SIT, BAT, Design and Data support.
Service Management		
SMS Project Manager	PMP	Responsible for day-to-day management and delivery assurance of the Switching Service Management System, as well as commercial and stakeholder management, throughout the DBT phase. They manage any escalation into the appropriate body.
Operational Readiness Sub-Programme - Operational Change and Implementation Management Resources The Operational Change and Implementation Management team will require the Change Implementation Manager throughout the duration of DBT. Service Transition roles will be required during the Transition phase solely and Service Operations roles will be introduced into the Programme progressively.		
Change Implementation Manager (OCIM)	Operations	Operational Assurance, Operational Readiness Reviews and Acceptance.
Service Management		The resource profile is based on the existing Operational resourcing model, encompassing in
Service Transition		

DBT Role	DCC Function	Responsibilities
Service Operations		excess of 50 individual functions across the following functional areas: • Service management • Service operations • Tech operations • Service transition • Operational programme • Business planning • Disaster recovery • Programme • Operational testing support
Technical Operations		
Operational Support		
Business Analysts	Design and Assurance	Responsible for identifying, creating and uplifting the Operational and Service Management Artefacts that are required to be created.

Table 8 – Operational Readiness Sub-Programme Resources

The following chart details the resource profile for the Operational Readiness sub-programme from May 2019 to September 2021. The levels of resource within this sub-programme are expected to vary over time; the architectural and analytical involvement is expected to decrease once the service design work is completed, whilst the transition process within Operational Readiness will commence later in the programme.

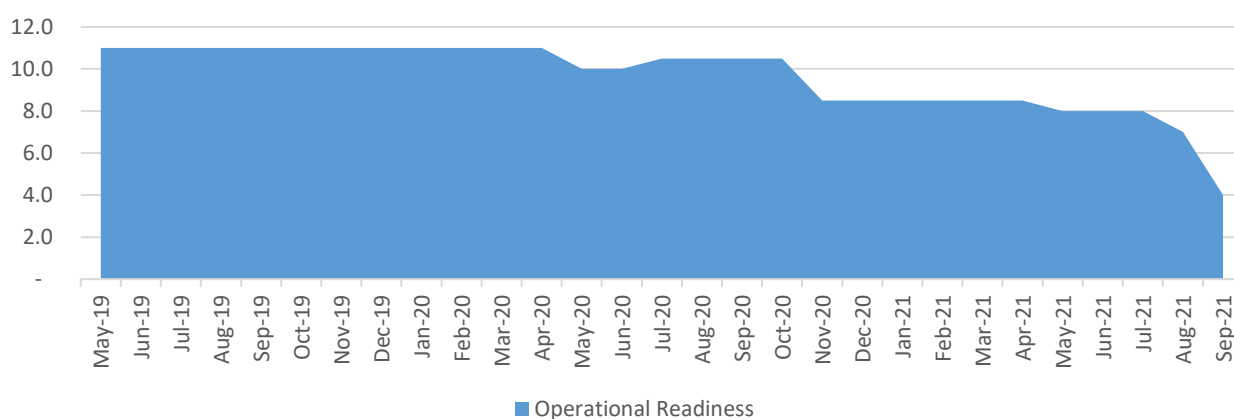


Figure 16 – Operational Readiness Resource Profile

DBT Role	DCC Function	Responsibilities
Commercial, Regulatory and Engagement Sub-Programme The Commercial, Regulatory and Engagement sub-programme will require that the team be deployed throughout the duration of DBT. As a mainly supportive sub-programme, its activities enable the delivery of the Programme's objectives by coordinating engagement efforts with Industry, contributing to the development of the REC and recording the necessary evidence for Price Control submissions. As these are ongoing activities, the resources that make up this sub-programme will be needed throughout DBT.		
Project Manager	PMP	The Project Manager will be responsible for the coordination of the sub-programme's activity.

DBT Role	DCC Function	Responsibilities
		Ensuring that clear visibility of each team's activity is made available at a programme level and that read across between sub-programme's requiring the support of Commercial, Regulatory and Engagement is facilitated.
Regulation Manager	Regulation	The Regulations team are responsible for engaging with Ofgem on REC development, focusing on the development of REC Technical documents and REC Subsidiary documents. This team will also engage with CSS go-live governance. The Regulations team will provide support for managing change and compliance with the continued implementation of new regulation, supporting engagement with transitional REC governance. This team will manage consequential impacts to other codes/programme's and lead on occasional DCC-led consultations on change.
Regulation Analysts		
Finance Business Partner	Finance	DCC support function
Price Control Manager	Regulation	DCC support function
Senior Commercial Business Partner	Commercial	The Commercial team is responsible for covering contract management, supplier relationship management and commercial analysis, particularly in relation to change requests. They will manage the new Switching contracts as they are signed and will have oversight of the commercial arrangements that are put in place with Existing Service Providers. They will manage the governance arrangements, including monthly performance reporting, with the new and Existing Service Providers. The Commercial team will support the change control process with the new Switching Providers and undertake other commercial analysis tasks as necessary.
Junior Commercial Business Partner		
Contract Management		
Supplier Relationship Manager		
Customer and Engagement Manager (part-time)	Operations	These roles account for around 1 FTE in total. They will manage: • Communication updates; • Summits with DCC Customers 3-4 times a year; • Stakeholder surveys and DCC responses; • Wider opportunities for engaging stakeholders in understanding DCC costs and approach.
Communications Manager (part-time)	Communications	

Table 9 – Commercial, Regulatory and Engagement Sub-Programme Resources

The following chart details the resource profile for the Commercial, Regulatory and Engagement sub-programme from May 2019 to September 2021.

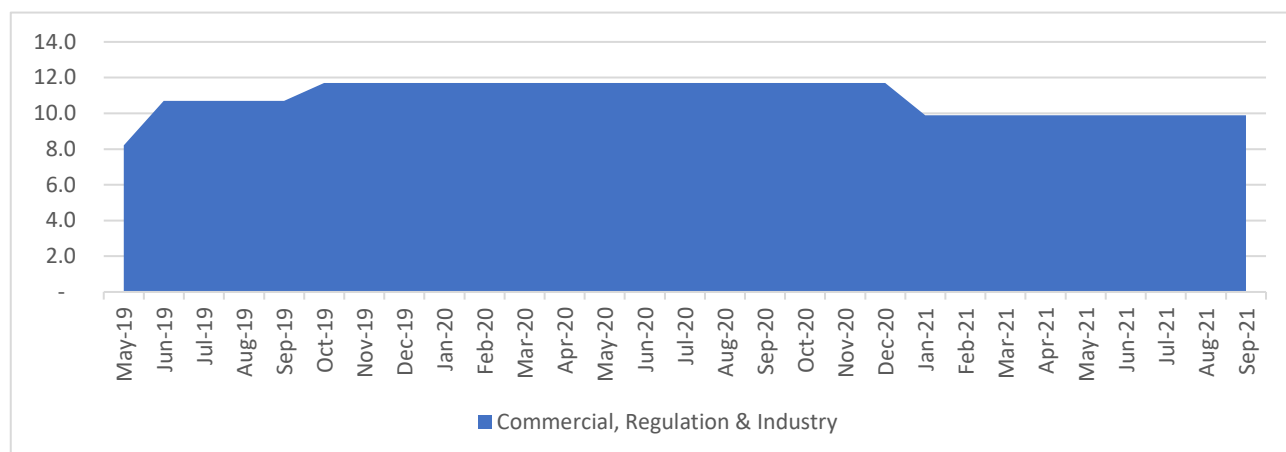


Figure 17 – Commercial, Regulatory and Engagement Resource Profile

The Programme has a degree of insulation from pressures that may arise on the wider Smart Programme. DCC has a number of approaches that provide safeguards and protect the level and quality of resource working on Switching. These approaches include the way financing/contingency is agreed and managed across programmes and the functional matrix working that inherently supports high-pressure areas without taking from other programmes.

DCC will use a dedicated, discrete programme team to support the Switching Programme to ensure that there is no impact on the delivery of the smart metering communication service. However, some activities will require input from central DCC functions, such as finance and communications. Where this input cannot be accommodated by existing resources, we will recruit additional dedicated resources to ensure there is no detrimental impact on the smart metering communication service. DCC will be required to justify any additional central resource through its annual price control reporting.

For all DBT DCC people costs, the estimation of resources has been aligned to:

- The timings in the high-level DBT plan or other relevant activities, e.g. REC timetable;
- Comparable work in DCC;
- Professional / functional area estimates of tasks and resource required.

The initial estimates from the Programme were then subject to challenge sessions with functional leads, and subsequently went through the DCC Internal Business Planning process.

The profiling over time is through MS Project with some adjustment for recruitment lag. The whole DCC Switching people profile for DBT is presented in Figure 18 and shows variation over time, by sub-programme area. (A further internal business case will be needed from DCC for the subsequent Operational phase, and nearer that time we will need to consider the resourcing change into that new phase).

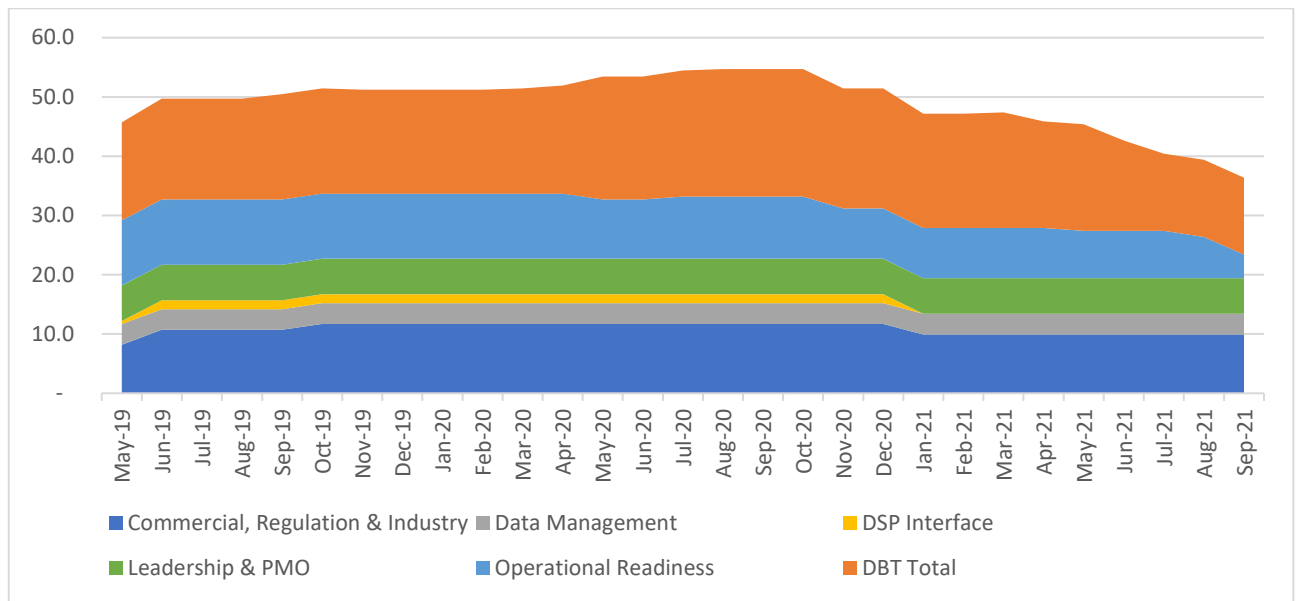


Figure 18 – Resource Profile by Sub Team

This resource chart can be cross referenced with the Project Plan and key output phase summary in Section 5.2.3 to provide a summary of resources per phase.

8 Performance Regime and Price Control

8.1 Incentivised Milestones

DCC is incentivised to deliver against key milestones within the Switching Programme. These incentivised milestones consist of programme gate exit/entry stages as agreed with Ofgem. The programme SRO and programme assurance team will agree when incentivised milestones have been met.

The DBT incentives framework will place DCC's margin at risk based on the timely delivery of the key milestones to agreed quality. Five milestones have been identified and include the following:

- DBT Readiness - this milestone gives certainty to the industry parties to commence their DBT activities:
 - At this point the SI Provider will have worked with the CSS and Existing Service Providers and finalised the DBT plan. They will also have published the interface specification for CSS components and any proposed updates to the CSS and E2E Delivery Products to align with the revised Core Systems and Services Integration Approach and Plan. This milestone gives certainty to the industry parties to commence their DBT activities;
- CSS PIT Exit - this milestone represents when the Address, Registration and Service Management Services have undergone pre-integration testing:
 - The components of the CSS (Address and Registration) system have been designed, built and undergone Pre-Integration Testing of the System and Service aspects covering all functional and non-functional requirements including security and service management aspects;
- SI Readiness for SIT - completion of planning and preparation activities for SIT, the development and agreement of the SIT Plan:
 - Prepare and put in place all elements of the SIT Plan that are the responsibility of the SI and that are required to meet the SIT entry criteria. Potentially meet any other SIT entry criteria that are within the responsibility of the CSS provider(s) to meet. The SI will coordinate the activities around this milestone. It will only include activities which are within the DCC Service Provider's ability to control. For example, any delays caused by other licensed parties not completing PIT would affect the timeline but DCC's margin would not be lost;
- E2E Testing Exit - this milestone covers the Programme led E2E Testing which is the responsibility of the SI to define, manage and execute:
 - Undertake E2E Testing in accordance with the E2E Testing Plan and meet the exit criteria for this phase. There is a distinction between E2E Testing led by the participants and the Programme. This milestone covers the Programme led E2E Testing which is the responsibility of the SI to define, manage and execute;

- Transition Stage 2 Exit - this milestone represents successful completion of all Transition Stage 2 exit criteria where the address service creates REL data for population of CSS:
 - Successful completion of Transition Stage 1 to populate the CSS registration service with data migrated from UKLink and all MPAS providers;
 - Successful completion of Transition Stage 2 where the address service creates REL data for population of CSS. All other Transition Stage 2 exit criteria are met.

The milestones will be assessed against agreed programme exit/entry gate assessment criteria which will be maintained by the Programme Coordinator office. The completion of incentivised milestones will be assessed by the Licensed Party Assurer based on achievement of these acceptance criteria, including completion of any stakeholder engagement specified in the product description.

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

Greater detail of the Incentivised Milestone regime will be published in Ofgem's direction on DCC margin and incentives and subsequent guidance documents. We anticipate the Direction will be published before the start of DBT.

8.2 Recovery Mechanism

To support the continuous delivery of the overall programme, the Discretionary Recovery Mechanism (DRM) has been incorporated as part of the DBT Performance Regime. This recovery mechanism will allow DCC to reclaim a portion of lost margin on Incentivised Milestones if the baselined programme Go Live date is subsequently met, and if the specified outcomes in relation to engagement and communication are achieved.

The evaluation of DCC's submission for the Recovery Mechanism will be conducted by Ofgem and supported by RECCo. The scope, application and assessment process have been developed by Ofgem with the support of DCC during the Enactment phase of the Switching Programme. These processes are defined in greater detail within the Guidance for the DRM¹⁸

8.3 Discretionary Milestone

Industry analysis suggests that approximately 80% of delayed, failed and erroneous switches are due to poor address data quality. Given the detrimental impact this has on end-consumers as well as the overall perception of the programme, it has been proposed that a one-off capped reward is introduced to encourage and incentivise DCC to make

¹⁸ Ofgem, 'Guidance for the Discretionary Recovery Mechanism (DRM) for DCC under the Design, Build and Test Phase of the Switching Programme', 03 May 2019: [Weblink to document](#)

improvements to data quality in such a way that it will deliver real benefit to the programme and end-consumer.

This reward has now been defined as the Discretionary Data Reward (DDR). This scheme seeks to incentivise DCC to meet and exceed the baseline quality standard for address matching. The DDR is owned by Ofgem who along with the support of RECCo will assess DCC's performance in reaching this goal. The scope and assessment of the DDR have been developed by Ofgem with the support of DCC during the Enactment phase of the Switching Programme.

Further information related to the scope, application and assessment process of the DDR is defined in the Guidance for the Discretionary Data Reward¹⁹.

8.4 Price Control

In extending DCC's Licence obligation to cover the DBT phase, DCC is expected to continue to ensure that costs are incurred in an economic and efficient manner through an ex-post plus arrangement. A full explanation of the ex-post regulatory framework can be found within Ofgem's published document, "2018 Processes and Procedures Guidance"²⁰. We recommend reading this document to fully understand the regulatory structures in place that scrutinise DCC costs.

Under this arrangement, DCC will be required to develop, consult and publish the DCC Switching Business Case, and report against it at a programme level. Aspects of these reports will be made available to the relevant programme governance groups during DBT. This reporting should include progress against time, cost and quality for DCC's identified deliverables and activities. This is with the aim of making costs incurred, and cost changes relative to the baseline, more visible to stakeholders.

As per the existing ex-post arrangements, DCC will be required to justify its expenditure on the Switching Programme in the annual price control submission to ensure costs have been incurred economically and efficiently. This information is assessed by Ofgem's Price Control team only (i.e. not the Ofgem Programme) in a separate process that encompasses all of DCC's smart metering programme material cost variance.

The purpose of the ex-post price control submission information is, on an annual basis, to provide Ofgem Price Control with an explanation of material variances between DCC's incurred costs overall as a business and to:

- justify that incurred and forecast costs are economic and efficient; and
- justify material variance against any baselined costs.

Historically, due to uncertainty, DCC has not submitted forecast costs to Ofgem's price control for scrutiny. DCC submits only forecasts which are 'sufficiently more likely than not' to occur. The DBT Phase represents a programme of work which DCC believes meets this certainty threshold. We therefore plan to submit forecast costs in the RY2018/19 annual submission through to the end of the DBT Phase. If allowed, these costs will form DCC's future cost baseline and DCC will then justify variance against that baseline, which is in line with DCC's Licence. Ahead of this submission, DCC will be

¹⁹Ofgem, 'Guidance for the Discretionary Data Reward (DDR) for DCC under the Design, Build and Test Phase of the Switching Programme', 03 May 2019: [Weblink to document](#)

²⁰Ofgem, 'DCC Price Control: Processes and Procedures', 15 June 2018: [Weblink to document](#)

assessed against a zero baseline and will therefore be required to justify all costs related to the Switching programme.

Any incurred Internal Costs that are not justified and/or deemed uneconomic and inefficient in the annual price control review will be disallowed. This will ensure that DCC costs relating to the Design, Build and Test Phase of the Switching Programme are formally submitted for scrutiny and industry consultation, and are justified under the same price control reporting arrangements as DCC's smart metering costs.

Any costs disallowed by Ofgem and/or any forecast costs that are not spent will not be retained by DCC. These are returned to customers through the Price Control's K-Factor. This process is explained in the guidance document mentioned above.

9 Risks and Contingency

9.1 Programme Risks and Issues Management

DCC has strict standards and processes for risks and issues identification, assessment, management response, monitoring and review. The process is live and constant throughout the lifetime of the project.

As set out under DCC's approach to contractual risk management (Section 6.5), DCC works so that each risk has a named owner who is accountable for maintaining and managing the risk, including involving the Service Providers as necessary. The initial Risk view provided as part of this Business Case only refers to DCC identified risks. As such, no Service Provider owned risks have been set out in this Business Case.

Risks are managed differently depending on how they are categorised: Programme risks are reviewed monthly by the Programme Directors and exceptions are reported to DCC's ExCom, whereas Enterprise level risks are reported to ExCo and the DCC Board.

The programme and project managers identify risks and issues on a daily basis, assessing the severity and proposing mitigating actions. They proactively manage these risks and issues, ensuring that planned actions are undertaken until the issue is resolved.

The RAID log for the Switching Programme's DBT Internal Business Case is embedded at Appendix A.

9.2 Business Planning and Managing Uncertainty

This section sets out the business planning process and how DCC manage uncertainty relating to this Switching Business Case.

9.2.1 Business Planning

The DCC Business Planning process enables the organisation to develop the resource requirements for different work areas. The approach to defining **resource costs** and other **internal costs** is based on a matrix model. For many functions, this requires planning both for their own functional needs but also the requirements of any programme they need to support. Each programme defines its delivery objectives, sets out the intended delivery strategy and timescales, and identifies the skill sets required to deliver its objectives.

All requirements are reviewed and challenged by each Functional head. They review the requirements and assess whether the proposed FTE request is aligned to the

requirements of the programme. Proposed objectives, resourcing and costs are then subject to several rounds of challenge by members of ExCo. Functional heads are also challenged on their objectives and proposed delivery approach, the level of resource required and whether the proposed recruitment profile is realistic.²¹

Finalised budgets also form the baseline against which DCC compare actual expenditure.

9.2.2 Managing uncertainty

Uncertainty is managed in several parts of DCC's approach depending on the nature of uncertainty. Where unexpected change is significant a contingency may be needed. The cycle of meetings in DCC are used to manage issues arising on a day-to-day basis. A design authority and wider change control processes are covered elsewhere and capture the management of some developments we cannot be certain of at the outset.

9.2.3 Contingency

DCC has attached 20% contingency to this programme. (The actual source and approach to contingency is covered in the Prudent Estimate information below.) The contingency level was developed from a 'top-down' consideration of comparable DCC programmes and then through a 'bottom-up' analysis of potential costs through pricing risks after mitigations. The assessment of risk for DCC within the programme is covered in the RAID and drivers of uncertainty are set out below.

DCC is required to recover a Prudent Estimate of its allowed revenue, so as to avoid the need to raise DCC charges in-year. DCC recovers an overall contingency to satisfy this requirement, this is commonly referred to as the 'Prudent Estimate'. The Prudent Estimate is held centrally by DCC to manage contingency and unforeseen expenditure across all programmes and activities. Its use is prescribed in our Licence as shown below. The methodology for calculating the annual value of Prudent Estimate is equivalent to three weeks of Internal and External Costs.

DCC includes contingency in this Internal Business Case for Switching over the DBT phase. It reflects risk and uncertainty under the programme – in essence, the additional costs that could be incurred if risks materialise, taking into account the probability that each one might. DCC costs of the Switching Programme are charged to its customers through the monthly Fixed Charges which are recovered on the basis of market share. These charges include the Prudent Estimate discussed above, but do not include the contingency specific to the Switching Programme.

If a risk materialises, the programme will always consider first the flexibilities it has in DCC around under-spend in another area or under-utilised resources. In any case where this proves insufficient, and DCC programme costs needs to exceed the level in the current business case, then this would be raised with Ofgem's Delivery Group following clearance with DCC through DHWG. Subject to Delivery Group acceptance, the programme would need to propose and seek ExCo approval to draw down from DCC's Prudent Estimate.

Contingency will be reviewed on a regular basis and will be removed from the plan once any risks are deemed immaterial.

The relevant sections of the Licence are as follows:

²¹ DCC, 'Part 1 – Ensuring Value for Money, Price Control Submission RY2017/18', July 2018: [Weblink to document](#)

“36.4 The Licensee, in setting Service Charges for its Mandatory Business Services, must take all reasonable steps to secure that, in Regulatory Year t, its Regulated Revenue does not exceed a prudent estimate of its Allowed Revenue for that Regulatory Year.”

“36.5 For the purposes of paragraph 36.4, and subject to paragraph 36.6, a prudent estimate of Allowed Revenue is the Licensee’s best estimate of Allowed Revenue as adjusted to ensure that (disregarding any within-year adjustments that may be permitted in circumstances prescribed by the Charging Methodology of the Licensee) the Service Charges as they apply for Regulatory Year t will not need to be amended in the course of that year except in response to a reasonably unlikely contingency.”

9.2.4 Contingency Drawdown

DCC has a formal process in place which manages the drawdown of any value from the Prudent Estimate required within programmes. This enables us to identify any variances from planned expenditure, challenge planned and unplanned spend, and identify savings when required so that we remain within the budget as set out in the Charging Statement for that year.

Programmes review their existing plans and cost profiles regularly and do this via an internal Monthly Business Planning Review where any cost deviations are discussed. This ensures DCC are always verifying that costs we are incurring are economic and efficient.

Drawing down from the Prudent Estimate requires the Switching Programme to follow a formal process. Following DHWG (and Programme governance) scrutiny and challenge on the need and costs of the contingency request, a formal paper can be presented to ExCo for further scrutiny and challenge. It is only after passing ExCo questioning that the request to spend any of the contingency is either approved or rejected.

9.2.5 Drivers of Uncertainty

The scope of DCC activities is prescribed in the Licence amendment and requirements. This section identifies the key areas of uncertainty within this scope that are likely to affect DCC costs in relation to its activities during the DBT Phase of the Switching Programme. This is intended to provide transparency to Ofgem and stakeholders about the potential cost impacts of changes to the baseline planning assumptions relating to DCC’s role in the programme.

Although not without some risk, DCC will look to control the timely delivery of the work within its control or the direct control of its service providers. The areas of greatest uncertainty in respects to costs, arise from the degree to which DCC itself has control over key aspects of the programme and will include:

- the degree to which DCC (through a contracted SI) can ensure consistent and timely delivery working with Existing Service Providers, where neither DCC nor its service providers have any direct contractual mechanism to enforce compliance with those organisations. (A multi-party agreement between the SI and Existing Service Providers is not a contractual mechanism); and
- dependencies on Licensed Parties within the wider switching eco-system to have completed their system updates to meet the timetable outlined within Ofgem’s overall programme plan.

9.2.6 CSS Solution Uncertainty

It is clear that DCC is delivering to Reform Package 2a and that the remaining design uncertainty relates to design changes which may arise following the contracting of service providers. The procured solution should be adaptable to change over time and it is understood that some changes in regulation, technology, markets and consumer behaviour cannot be anticipated but will affect the CSS.

10 Costs and Margin

This section explains DCC's approach to calculating costs, the details of the materiality thresholds and contingency relating to these costs, and the triggers and processes for updating the costs within DCC's Switching Business Case.

10.1 Costs

The following table gives an overview of DCC's cost categories relating to the Switching Programme:

Cost Type	Components
Staff Costs	Employment costs including: • salary, • NI, • bonus, • training, • holiday/sick pay, • pension provision, • other costed benefits, • recruitment costs
	Contractor costs
Non-Staff Costs	Industry events and industry satisfaction costs
	Legal support
	Co-location travel costs
	Consultancy in the following areas: • data analysis, • legal assurance, • technical assurance
External Costs	SI contract costs
	CSS contract costs
	SM contract costs
	CSA contract costs
	DSP costs
Internal Costs	Capita's corporate overhead charge

Table 10 – DCC's Cost Categories

DCC maintains separation of Switching costs from SMETS2 costs through specific coding within our financial accounting system. This is required in order to enable DCC to accurately report these costs through our regulatory reporting within the RIGs.

10.1.1 Cost to Industry

The total estimated DCC Internal cost to industry associated with delivering the baseline scenario (RP2a) is summarised in the table below. These costs represent DCC's forecast of the likely costs it will incur in the DBT Phase of the Switching Programme based on DCC's understanding. DCC has forecast these costs for the purpose of generating a realistic budget and to feed into the overall Ofgem-owned Switching business case.

Further to its business case, DCC will provide a full and thorough justification of all of its costs incurred in support of the Switching Programme as part of its annual ex-post price control submission to Ofgem.

Staff costs include an allowance for annual pay reviews for permanent staff. All other costs detailed in this business case are stated in nominal terms, i.e. they exclude any allowance for inflation, given the relatively short time-period of the programme and the current low inflation rates.

The following table details the total estimated maximum DCC Internal cost to industry of the DBT phase of the Switching programme from Regulatory Years (RY) 2019/20 to 2021/22. For this reason, we are calculating overhead and margin on contingency, but it won't actually be incurred unless contingency is spent.

Forecast Costs in £k	RY 19/20	RY 20/21	RY 21/22	DBT Phase Programme Total
Staff Costs	4,802	5,787	1,260	11,849
Non-Staff Costs	885	628	271	1,783
Total DCC Internal Costs	5,686	6,415	1,531	13,633
Contingency	1,137	1,283	306	2,727
Total DCC Internal Costs inc. Contingency	6,824	7,698	1,837	16,359
Overhead	0	0	0	0
Total DCC Internal Costs inc. Overhead	6,824	7,698	1,837	16,359
Margin	928	1,047	250	2,225
Total DCC Internal Costs to Industry	7,752	8,745	2,087	18,584

Table 11 – Total DCC Internal Costs (in thousands)

In RY2019/20 DCC will recover all Switching costs through the main Fixed Charge, which is payable by energy suppliers and networks. The draft Fixed Charges for RY2019/20 were published on 21 December 2018²².

²² DCC, 'Charging Statement for RY2019/20 – issue 0.1', 21 December 2018: [Weblink to document](#)

10.1.2 Staff Costs

Staff costs, where an individual is currently fulfilling one of these DCC roles (i.e. a specific role), have been forecast for as long as the specific role is allocated in the Programme Plan. Staff costs can be directly linked to DCC's annual price control framework. They include the General Ledger (GL) codes of Payroll, Non-Payroll, and Recruitment. An explanation of what is included within these GLs can be found in Ofgem's Regulatory Instructions and Guidance document²³.

Where an individual is utilised for less than 50% of their time, the costs will eventually be costed against the activity actually performed by the resource. The price control team tracks and reviews these costs as part of their submission to ensure that they are allocated to the correct regulatory regime, which ensures that margin is being allocated correctly.

For unfilled permanent roles, benchmarking is applied to the permanent resource profile. A benchmarking exercise, using Hays database, has been undertaken using a generic job description for each role. Location and skillset are considered, and an appropriate base salary range is defined for each role. Permanent Staff Costs are calculated using an annual base salary with NI, bonus and employee benefits added. A monthly cost is derived and aligns to the resource profile.

For unfilled contractor roles, the contractor benchmarking will use either Hays database or external resources that specialise in technical roles. This is applied to the contractor resource profile in order to generate a base resource cost for the forecast costs. Location and skillset are considered, and an appropriate day-rate range is defined for each role.

Contractor Costs are based on 20 days working per month. This is an average number of days. Only time spent on the programme will be billed to it; thus holidays, bank holidays and sickness will not be billed to the programme.

FTE and associated costs are split into sub-programmes as detailed in Section 5.1.1, which drive the key activities and requirements. The details of the benchmarks used as a basis for these costs are given in Appendix E.

²³ Ofgem, 'Data Communications Company (DCC): Regulatory Instructions and Guidance', Updated 1 December 2017, [Weblink to document](#)

Forecast Costs in £k	RY 19/20	RY 20/21	RY 21/22	DBT Phase Programme Total
Commercial, Regulatory and Engagement	950	1,153	266	2,369
Operational Readiness	1,008	1,054	219	2,280
Design, Build and Test	1,894	2,506	531	4,931
Leadership and PMO	491	590	147	1,228
Data Service Provider Interface	135	97	0	232
Data Management and Migration	323	388	97	808
Total Staff Costs	4,802	5,787	1,260	11,849

Table 12 – Cost Breakdown per Sub-Programme (in thousands)

Within each of these sub-programmes, various skill sets are required, which in turn leads to a variation in costs between sub-programmes of seemingly the same resource level. For example, the Leadership and PMO Sub-Programme is predominantly administrative in nature which lessens the cost. The Operational Readiness team, however, will require a larger proportion of higher skilled resources to ensure the successful delivery of the Service Management system. This, combined with the likelihood of recruiting contractors to fill these roles for often short-term assignments, tends to lead to a higher estimate for that sub-programme.

10.1.3 Non-Staff Costs

Non-staff costs relate to delivery activities, for example milestone assurance and other professional services and assurance that may be required. It also relates to any legal advice which may be sought. Similar to Staff costs, Non-staff costs are also linked to GL codes, namely IT Services, Internal Services, Service Management (Service Desk), and External Services.

These costs have been estimated based on similar costs incurred over the previous phase and anticipated costs specific to this phase. The forecast includes costs relating to, legal costs, industry/stakeholder consultancy, data consultancy, deep dive analysis, assurance activity, stakeholder engagement events/research and travel.

This business case reflects our best estimate of Non-staff costs, which we consider will ensure efficient progress on activities to support the programme. This cost will be recovered from customers via Fixed Charges, and any costs not incurred will be returned to customers through lower Fixed Charges in a future year (also known as the correction factor). As with all costs incurred, this will be subject to Ofgem's annual price control assessment.

10.1.4 Corporate Overhead

DCC will not apply to Ofgem for overhead for delivering the Switching Programme until Ofgem, Capita and DCC have reached agreement on a new approach for calculating and applying for overhead. However this does not mean that overhead costs are not incurred for this programme.

DCC applies a Capita overhead charge against Internal Costs. The corporate overhead charge enables Capita to function as a business, covering Group corporate management activity including Head Office and executive oversight. It also covers the contribution to the central Capita services that underpin all Capita contracts including DCC, e.g. payroll and insurance. DCC benefits from services and support provided by Capita and consequently incurs costs in relation to those services and support. The rate is 9.5% for all baseline scope costs.

Through the annual price control, Ofgem has challenged DCC to justify this level for the Switching Programme, ultimately disallowing the 9.5% level in their RY2016/17 Decision²⁴. In the RY2017/18 submission, DCC proposed an alternative methodology that would apply for the Switching Programme as well as future new scope work. This approach yielded a rate of 7.2%. In Ofgem's final Decision Document published in February 2019, they did not consider this approach to be of sufficient evidence / justification for the rate and consequently have disallowed the overhead value for the Switching Programme²⁵.

DCC is considering an alternative approach in response to this initial view, however, will not have completed this assessment in time for this business case. Therefore, for the purposes of this document, we are proposing to use 7.2% as a maximum estimate of this cost. We expect the value submitted in our annual price control submission to be lower than this value. The ultimate rate will be scrutinised by Ofgem through our ex-post price control submission in RY2018/19.

Following its consultation at the end of 2018, Ofgem concluded²⁶ for the DBT phase to continue the margin methodology for the Transitional Phase, i.e. this represents the allowable margin for DCC to earn if all incentivised milestones are achieved on time and following assurance that the acceptance criteria have been met to the required quality.

As per for the Transitional phase, DCC will be able to earn a margin of 12% on Internal Costs. This is equivalent to a 13.6% mark-up to the Total DCC Internal Costs including overhead, as per the formula below. Note this is the same methodology applied within DCC's annual price control submission and follows standard accounting principles.

$$\text{Mark - up} = \left(\frac{1}{1-12\%} \right) - 1 = 13.6\%$$

Based on the proposed margin rate of 12% and the forecast costs associated with the baseline scope scenario, the forecast value of the margin to be recovered compared to the forecast DCC costs are set out in [Table 11](#) above. Note that DCC does not apply margin to External Costs. This is in alignment with the approach taken in the broader DCC SMETS2 programmes.

10.1.5 External Costs

DCC will have Contracted External Services for the SI, CSS, SM and CSA procurements as well as estimated DSP costs.

²⁴Ofgem, 'DCC Price Control Decision: Regulatory Year 2015/16', 28 February 2017: [Weblink to document](#) and Ofgem, 'Consultation. DCC Price Control: Regulatory Year 2017/18', 31 October 2018: [Weblink to document](#)

²⁵ Ofgem, 'DCC Price Control Decision: Regulatory Year 2017/18', 27th February 2019: [Weblink to document](#)

²⁶ Placeholder for Ofgem margin conclusions

DCC has given a value for the DBT phase, but in order to reflect the uncertainty of the costs and the stage of negotiation to each Contracted External Service, a range has been included. The tables below detail this range.

DCC has also included the user membership cost of the two Comms Networks.

Forecast Costs in £k	RY 19/20	RY 20/21	RY 21/22	DBT Phase External Total
Low Estimate	9,392	18,043	11,308	38,742
Contingency	1,878	3,609	2,262	7,748
Total Low Estimate	11,270	21,651	13,570	46,491

Table 13 – Contracted External Services Cost – Low Estimate (in thousands)

Forecast Costs in £k	RY 19/20	RY 20/21	RY 21/22	DBT Phase External Total
High Estimate	10,746	19,520	11,924	42,190
Contingency	2,149	3,904	2,385	8,438
Total High Estimate	12,895	23,424	14,309	50,628

Table 14 – Contracted External Services Cost – High Estimate (in thousands)

DCC has also included a 20% contingency to the costs. Any drawdown of this contingency will be subject to the formal DCC contingency drawdown process.

DCC has excluded any disaggregated costs for the DBT phase of the programme for Contracted External Services from this business case until contracts are signed and commercial negotiations have been concluded.

Appendix A: Risks, Assumptions, Issues and Dependencies

The RAID reflects a snapshot – ahead of starting DBT – of the risks, assumptions, issues and dependencies relevant to DCC’s role in the programme. It has been developed by the Switching team in DCC, reflecting considerations including delivery, regulation, finance, security, etc.

The RAID provides an indicative view and will be further worked up with the Systems Integrator and other contractors when fully onboarded. It is included now to provide an overall sense of the challenge as well as the risks underpinning our assessment of contingency.

Each risk was costed based on a measure of the potential delay/additional resources incurred. The cost was adjusted based on the likelihood of the risk. The individual costs have not been provided as a number of them are commercially sensitive, but the aggregate cost is.

The RAID tool itself will be incorporated as a live document, shaping the decisions and approaches taken by DCC throughout the DBT phase of the programme. It will not be updated in the business case every time the tool changes.

We are clear that others involved in DBT will have their RAIDs and the programme overall will have a RAID.

The RAID log is displayed on the Switching Business Cases webpage as Appendix A – Risks, Assumptions, Issues and Dependencies v1.6.

Appendix B: Key Outputs

The following table details the key outputs for the CSS Address Service Provider, CSS Registration Service Provider and SI Provider.

Owner	Artefact	Phase - Stage Name
CSS Address Service Provider	CSS Address System Functional Specification for System	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Pre-integration Test Plan	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Pre-integration System Test Report	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Pre-Integration Test Scenarios and Scripts	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Pre-integration Acceptance Test Specifications	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Test Infrastructure/ Environments and Data including a Test Environment for CSS Simulator	From Design, Build and PIT (Aug 19 to May 20) up to Go Live Range (May 21 to Aug 21)
CSS Address Service Provider	Test Tools	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Executed Systems Tests	From Design, Build and PIT (Aug 19 to May 20) up to Go Live Range (May 21 to Aug 21)
CSS Address Service Provider	Pre-Integration Testing - Regression Test Pack (and updates to this pack as required)	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Pre-Integration Testing - Test Completion reports for all Non-Functional Testing	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	CSS Address System Interface Specification	Design and Mobilisation (Feb 19 to Aug 19)
CSS Address Service Provider	CSS Address System Test Plans	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Tested CSS Address System Components	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Transformation and Load Mechanism for loading extracted data into the CSS Address Systems	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Design, Built and Tested Service Management Components required of the Service Provider	Design, Build and PIT (Aug 19 to May 20)
CSS Address Service Provider	Project Management Deliverables including RAID Logs, Status Reports	All Phases (Feb 19 to Sep 21)

Owner	Artefact	Phase - Stage Name
CSS Address Service Provider	Production Environments for use during live operation, including enduring test environments	From Design, Build and PIT (Aug 19 to May 20) up to Go Live Range (May 21 to Aug 21)
CSS Address Service Provider	To provide support to the Defect Triage processes that are adopted on the programme	From Design, Build and PIT (Aug 19 to May 20) up to Go Live Range (May 21 to Aug 21)
CSS Address Service Provider	Defect work off plan (if applicable)	From Design, Build and PIT (Aug 19 to May 20) up to Go Live Range (May 21 to Aug 21)
CSS Registration Service Provider	CSS Registration System Functional Specification for System	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Pre-Integration Test Plan	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Pre-Integration System Test Report	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Pre-Integration Test Scenarios and Scripts	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Pre-integration Acceptance Test Specifications	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Test Infrastructure/ Environments and Data including a Test Environment for CSS Simulator	From Design, Build and PIT (Aug 19 to May 20) up to Go Live Range (May 21 to Aug 21)
CSS Registration Service Provider	Test Tools	From Design, Build and PIT (Aug 19 to May 20) up to Go Live Range (May 21 to Aug 21)
CSS Registration Service Provider	Pre-Integration Testing - Regression Test Pack (and updates to this pack as required)	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Pre-Integration Testing - Test Completion reports for all Non-Functional Testing	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	CSS Registration System Interface Specification	Design and Mobilisation (Feb 19 to Aug 19)
CSS Registration Service Provider	CSS Registration System Test Plans	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Tested CSS Registration System Components	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Transformation and Load Mechanism for loading extracted data into the CSS Address Systems	Design, Build and PIT (Aug 19 to May 20)
CSS Registration Service Provider	Designed, Built and Tested Service Management Components required of the Service Provider	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Approach and Plan Documents:	Design and Mobilisation (Feb 19 to Aug 19)

Owner	Artefact	Phase - Stage Name
SI Provider	Core Systems and Service Integration Approach (Baseline Version)	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Core Systems and Service Integration Plan (Baseline Version) underpinned by a defined WBS and PBS with mapping to the SI Requirements specification and including a critical path analysis	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Update the end to end delivery plans	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Management Deliverables:	
SI Provider	Governance Review Meeting artefacts including agendas, minutes and action lists	All Phases (Feb 19 to Sep 21)
SI Provider	Raid Logs	All Phases (Feb 19 to Sep 21)
SI Provider	Organisation Breakdown Structure	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Resource Management: Continuity and Succession Plans	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Weekly Progress Report	All Phases (Feb 19 to Sep 21)
SI Provider	Supplier Performance Report	All Phases (Feb 19 to Sep 21)
SI Provider	Design Service Deliverables:	
SI Provider	Configuration Management System to record the status of:	
SI Provider	Programme management documentation, Project management documentation, Design documentation, Test documentation and results, Build documentation, Deployment documentation, Operational documentation and Training Documentation	All Phases (Feb 19 to Sep 21)
SI Provider	Defect Management Plan	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Environment Plan	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Published physical interface specifications	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Change Management Logs including Impact Assessments and Release Configuration Information	All Phases (Feb 19 to Sep 21)
SI Provider	SI Provider Deliverables:	
SI Provider	Issue Management process	Design and Mobilisation (Feb 19 to Aug 19)

Owner	Artefact	Phase - Stage Name
SI Provider	Query Log for market participant queries (duly prioritised)	Testing (May 20 to Dec 20)
SI Provider	Document tracker allowing easy identification of current and release version of documents	Testing (May 20 to Dec 20)
SI Provider	Traceability Matrix: ensuring that all tests undertaken, and components built are traceable back to requirements	All Phases (Feb 19 to Sep 21)
SI Provider	Test Service Deliverables:	
SI Provider	Test Plans: for SIT, UIT, Formal E2E, DMT, Operational Testing	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Test Scenarios, Test Cases and Test Scripts to enable testing to be undertaken effectively across all Test Phases and Test Stages for those stages identified within the E2E Testing plan as being the responsibility of the SI	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Test progress reports	Testing (May 20 to Dec 20)
SI Provider	Test Improvement Log detailing any recommended improvements to the testing process	Testing (May 20 to Dec 20)
SI Provider	Test Governance Review Meeting artefacts including agendas, minutes and actions	Testing (May 20 to Dec 20) and Transition (Dec 20 to May 21)
SI Provider	Testing methodology	Design and Mobilisation (Feb 19 to Aug 19)
SI Provider	Test Data for the relevant test phases	Design, Build and PIT (Aug 19 to May 20) and Testing (May 20 to Dec 20)
SI Provider	Test Tools: CSS Simulator	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Test Tools: Data tool produced by the SI for the CSS providers	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Test Tools: SIT Simulator for use by the SI during SIT	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Test Tools: Switch Performance Testing Tool	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Test Tools: UIT Counterparty Simulator	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Test Environments (as appropriate to enable integration to be carried out)	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Industry Testing Service	Testing (May 20 to Dec 20)

Owner	Artefact	Phase - Stage Name
SI Provider	To provide support to the Defect Triage processes that are adopted on the programme	Testing (May 20 to Dec 20)
SI Provider	UEPT Enabling Package	Testing (May 20 to Dec 20)
SI Provider	Test Completion Reports for each phase of testing that is the responsibility of the SI as defined by the E2E Testing Plan	Testing (May 20 to Dec 20)
SI Provider	Work off plan for any defects occurring in Test Phases for which the SI is responsible	Testing (May 20 to Dec 20) and Transition (Dec 20 to May 21)
SI Provider	Data Migration Deliverables:	
SI Provider	Data Migration and Transition Services Approach and Plan (aka Data Migration Solution)	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Design, Built and Tested Data Migration Tools	Design, Build and PIT (Aug 19 to May 20)
SI Provider	Executed Data Migration Activity in Stages 1, 2 and 3	Transition (Dec 20 to May 21)
SI Provider	Post Implementation Planning Deliverables:	
SI Provider	Post Implementation Plan	Transition (Dec 20 to May 21)
SI Provider	Post Implementation Progress report across all CSS and Existing Service Providers and ensure remedial actions are being undertaken in required timescales	Early Life Support (Aug 21 to Sep 21)
SI Provider	Report on early life performance of the solution	Early Life Support (Aug 21 to Sep 21)

Appendix C: Licence Extracts

Interim Centralised Registration Service Objective

Paragraph 15.4 of the licence requires that DCC “must comply with the Interim Centralised Registration Service Objective by:

- contributing to the achievement of a full and timely design for an efficient, economical and secure Centralised Registration Service that will, when implemented, provide a platform for fast and reliable switching for all Supply Points in the GB market;
- making all relevant preparations for the procurement and provision of Relevant Service Capability to deliver and operate a Centralised Registration Service;
- procuring Relevant Service Capability to deliver and operate a Centralised Registration Service that:
 - reflects the design of a Centralised Registration Service which has been designated by the Authority for this purpose (including any amendments to that designated design); and
 - will, when executed, give effect to an efficient, economical and secure Centralised Registration Service that will provide a platform for fast and reliable switching for all Supply Points in the GB market;
 - has appropriate provision for the economic transfer or novation of all Relevant Business Assets in relation to the Centralised Registration Service, including but not limited to, contracts and IPR, to a successor licensee or future operator of the Central Switching Service; and
 - will, when executed, be capable of efficiently and economically adapting to future market requirements;
- entering into and maintaining agreement(s) for a secure and robust Switching Network that should meet the requirements as described in the REC, which can be changed from time to time subject to the change procedures set out within the REC;
 - where appropriate, and possible, this may be by entering into user agreement(s) with networks that meet the requirements set out within the REC on standard user terms and in this event, the conditions of this Licence that relate to Relevant Service Capability and Fundamental Registration Service Capability will not apply to such user agreement(s) or to the services or capabilities provided under them. These networks could include, but not be limited to, the Data Transfer Network and Information Exchange Network; or
 - where it is not appropriate or possible to enter into or maintain such arrangements, including where the requirements described in the REC can no longer be met, then the Licensee should secure access to the Switching Network pursuant to the REC and the relevant conditions of this Licence including those relating to Relevant Service Capability;

- processing such personal data as is necessary to achieve the Interim Centralised Registration Service Objective.”

Paragraph 15.5 states that “For the purposes of paragraph 15.4(a), the Interim Centralised Registration Service Objective includes, but is not limited to, a duty to contribute to the development and documentation of the design of the Centralised Registration Service”.

General Centralised Registration Service Objective

Paragraph 15.5AA of the licence requires that DCC “must comply with the General Centralised Registration Service Objective through:

- the timely provision, delivery, management and upkeep of a reliable, efficient, economic and secure Centralised Registration Service that will improve consumers’ experience of switching;
- the management of the Relevant Service Capability of the Centralised Registration Service during Steady State operations with:
 - maintenance of a Central Switching Service design baseline and design authority function in accordance with the requirements in the Retail Energy Code;
 - provision of a prompt and constructive approach to support change management that meets the process and service level agreements set out within the Retail Energy Code;
 - the provision of systems and services that can economically and efficiently adapt to meet future market requirements;
 - proactive data stewardship for the Retail Energy Location Address that will lead to a very high level of continually improving accuracy for registerable meter points that meets or exceeds the standards set out within the Retail Energy Code; and
 - appropriate provision for the transfer or novation of all Relevant Business Assets in relation to the Centralised Registration Service, including but not limited to, contracts and IPR, to a Successor Licensee or future operator of the Central Switching Service.
- entering into and maintaining agreement(s) for a secure and robust Switching Network that should meet the requirements as described in the REC, which can be changed from time to time subject to the change procedures set out within the REC;
 - where appropriate, and possible, this may be by entering into user agreement(s) with networks that meet the requirements set out within the REC on standard user terms and in this event, the conditions of this Licence that relate to Relevant Service Capability and Fundamental Registration Service Capability will not apply to such user agreement(s) or to the services or capabilities provided under them. These networks could include, but not be limited to, the Data Transfer Network and Information Exchange Network; or

- where it is not appropriate or possible to enter into or maintain such arrangements, including where the requirements described in the REC can no longer be met, then the Licensee should secure access to the Switching Network pursuant to the REC and the relevant conditions of this Licence including those relating to Relevant Service Capability;
- processing such personal data as is necessary to achieve the General Centralised Registration Service Objective.”

In addition, 15.6 requires that DCC “must comply with any direction issued to it by the Authority for the purposes of meeting the Interim Centralised Registration Service Objective or the General Centralised Registration Service Objective in respect of the Licensee’s obligations in this condition”.

Appendix D: Initial Consultation Response and Contractor Update

This appendix covers the response to an initial consultation on the draft DBT Internal Business Case (before it was baselined) and areas with updated information.

Specifically, the following summarises the changes made from Version 0.9 of the business case leading to Version 1.0 being issued ahead of June 2019.

Additional Information

Since the publication of the draft document for consultation, a number of developments have been made particularly in terms of contracting new service providers. We are able in Version 1.0 to clarify three of the four contracts, the organisations involved and include more around their respective roles.

Consultation

A draft copy of the Internal Business Case (Version 0.9) was published on 10 April for consultation. The consultation was open from 10 April 2019 to 07 May 2019. During that time, over 10 energy suppliers joined a DCC hosted workshop (and conference call), providing further clarifications on our Business Case and an opportunity to offer comments. By the closing date, six written responses were received from Scottish Power, British Gas, Npower, Eon, EDF and Ofgem.

DCC went through a detailed process of categorising all areas of feedback and quite detailed or specific points that could be easily addressed.

Overview of Responses

There were positive views around the clarity of document and the explanation of objectives and DCC role. The approach to contingency – where it is not charged but estimated for DCC internal management - was strongly welcomed. Some responses confirmed that they saw the overall cost and resourcing as consistent with a Programme delivery of this scale.

There were calls to check that there are no overlaps in activity and that communications are coordinated, and we recognise that this is an important challenge within all the areas DCC is responsible for, but also in our interaction with Ofgem and the Programme Coordinator. There will be a cycle of weekly and monthly meetings where we work on this coordination.

The following points are those that were raised in different ways across most of the responses to the consultation and we considered carefully how the business case can be adapted.

Key Themes	Key Actions Taken
Overall DCC Costs and DCC internal costs Some felt the costs were too high or wanted clarity on the controls on adding to cost	We have made the financial controls on expenditure and how contracts deliver value for money more explicit.

Key Themes	Key Actions Taken
(including contracts); some called for greater transparency around resourcing.	Through an internal review covering all functions and sub-programmes we have identified savings to DCC resourcing. The savings reflect a better understanding of the expected delivery from contractors but also some ideas on combining roles, reprofiling the time commitment of roles and challenging the seniority needed. This has also been accompanied by a review of overhead costs. Reflecting discussions with Ofgem, we have decided to remove overhead from the costs to industry until Ofgem, Capita and DCC have reached agreement on a new approach for calculating and applying for overhead. Overall, DCC's Internal cost has been brought down by 9.38% and £1,924,000. Key changes include: ■ Reduction in Programme Management through merging roles; ■ Some reductions in time commitment in the Commercial, Regulation and Engagement sub-programme; ■ Regrading across test roles; ■ Reductions to the Ops Readiness sub-programme to reflect adjustments to that approach; ■ Reducing the PMO staffing. ■ Removal of overhead costs In terms of transparency, we have provided more detailed resource profiles, including around testing assurance. The majority of the cost in the business case relates to new service providers and there are commercial constraints on how transparent we can be about these costs. We are exploring where there may be scope to cover costs with more detail in further iterations of the business case.
Lessons Learnt Demonstrate that the Switching Programme has embedded lessons learnt from the Smart Programmes.	The document does, often implicitly, reflect a range of lessons learnt from other DCC programmes but we have now added more explicit reflections to lessons learnt from Smart Programmes within the Business Case, including a short section in the Introduction.

Key Themes	Key Actions Taken
Contingency Concern from Industry that 20% contingency rate is too high, even if not charged.	After careful consideration we have decided to maintain the level of contingency at the outset of the DBT phase. We believe the level is appropriate given our estimation around risk and comparable programmes. It is a key lesson learnt. We intend to review our RAID log once all contractors are onboarded and we can fully gauge the level of risks across all parties. There will be opportunity to reduce the contingency we need to 'hold' as the programme progresses, and this will be set out in any updates to the document and in financial reporting around programme governance.

The following updates have also been made throughout the document in response to queries raised in the workshop and consultation, and as a result of progress within the Programme.

Query/Update	Action Taken
We were asked to consider a Supplier Relationship Manager for each contract.	We understand the intent behind this, but our approach is to have one SRM in addition to contract management. We will manage the work of contractors through dedicated programme and project managers.
Continue to take DCC customers into account.	Our regular summits will allow DCC customers to hear an update on the business case and question our contractors.
Concern that only DCC decides use of contingency.	We have clarified how this relates to Programme governance.
We were asked about how costs in the business case relate to earlier estimates.	This has been clarified in the Introduction.
We were asked to provide assurance that the resources required for the Switching Programme will not have a detrimental effect on the Smart Programme.	Further clarification has been added in the Introduction.
We have moved ahead with various contract negotiations since the issuance of Version 0.9.	Updated contract details have been added to the Contracted External Services section.

There were other points beyond the scope of the business case and these have been raised with relevant teams on the Programme.

Appendix E: Benchmarks

[Table Redacted]