Moving to reliable next-day switching

Target Operating Model and Delivery Approach

Version control – internal and external

Reviewer	Version	Date	Summary of changes
External	V1.0	10 February 2015	First published version. Issued for consultation. Responses requested by 10 April 2015.

1.   Introduction

1.01   On 10 February 2015 we published our decision to introduce reliable next-day switching on a Centralised Registration Service (CRS) to be procured, and run by, the Data and Communications Company (DCC).[1] This will be delivered through a programme of work led by Ofgem ("the Programme").

1.02   Alongside our decision, we are consulting on this Target Operating Model (TOM) for the new switching arrangements. The TOM describes, at a high level, how new business arrangements to support switching are expected to operate. It will act as a guide and reference document through the lifetime of the Programme and will be maintained as the more detailed arrangements are developed. It includes:

- The requirements for a reliable next-day switching process, built on a CRS, including market design and governance arrangements.[2]
- The requirements for the CRS.
- The delivery approach to successfully establish a CRS and implement the new switching arrangements.

1.03   Our decision document sets out the reasons why these new operational requirements are needed.

1.04   In developing the content of the TOM we have taken account of responses to our June 2014 consultation on Moving to Reliable Next-Day Switching[3] and the output of industry discussions at the Change of Supplier Expert Group (COSEG).[4]

1.05   Developing more detailed proposals will be an iterative and collaborative process requiring the active participation of a wide range of stakeholders. Our February 2015 decision document describes, at a high level, how we will operate the programme to deliver the new switching arrangements. Later this year, we expect to publish a Significant Code Review (SCR) Launch Statement and provide further details on how the Programme will operate. At that point we also aim to publish an updated version of this document taking into account consultation responses.

1.06   The design of the new switching process and CRS will develop through the lifetime of the Programme by delivering products that describe this design.[5] As we progress through the Programme, these design products will progress from high level in the first phase of work (the Blueprint phase) to more detailed specifications that will be consulted on, and ultimately become part of the industry governance.

1.07   We will define a series of design baselines through the lifetime of the Programme to deliver a consolidation of all of the design products at a particular time as a point of reference (e.g. for stakeholder consultation; collecting data for our impact assessment; or for DCC to procure a CRS provider against). This is the first version of the TOM to be published and there will be further published versions during the Programme to align with the publication of design baselines.

1.08   Where we have identified likely solutions through discussions at COSEG and industry groups to date, we have incorporated these within this version of the TOM. Elsewhere, we have framed the TOM in terms of the overall requirements that will need to be developed.

1.09   At the end of this document we have provided a glossary.

---

[2] We will also examine if two-day switching would provide a better outcome for consumers taking into account all relevant circumstances.
[3] https://www.ofgem.gov.uk/publications-and-updates/moving-reliable-next-day-switching
[4] COSEG was established in 2013 to progress switching developments with industry and relevant stakeholders. A summary of findings can be found here: https://www.ofgem.gov.uk/publications-and-updates/summary-findings-change-supplier-expert-group-coseg
[5] Examples of products include a CRS Requirements Specification and Switching High Level Process Maps.

2.   Programme objective and scope

2.01   Our objective is to establish a switching process that is fast, reliable and cost-effective. To do this we will establish the Programme to deliver the necessary changes.

2.02   The scope of this Programme will be the arrangements required to deliver reliable next-day switching. The Programme is at an early stage, we therefore propose to also explore a two-day switching solution to see if that would provide a better outcome for consumers.

2.03   The scope includes:

- Changes to the regulatory framework to facilitate a new CRS covering all supply points connected to gas and electricity distribution networks, and decommissioning the existing registration services run by electricity and gas networks. This will include DCC price control and CRS charging arrangements.
- Reviewing any remaining network licence obligations linked to registration, including providing enquiry services.
- Facilitating reforms to the switching process for all domestic and non-domestic gas and electricity consumers (with the exception of those consumer types detailed below).
- Harmonising the switching arrangements between the gas and electricity markets, where possible, taking into account any specific differences in market requirements.
- Defining and executing a transition and implementation scheme for the CRS and new switching arrangements.
- Implementing the new CRS service, with all relevant industry parties shown to be able to operate in the new environment.
- Delivering a consumer awareness campaign.

2.04   We will consider all parts of the switching process from the point when a consumer enters into a contract with a new supplier until they have received a closing bill from their old supplier, and an opening bill from their new supplier.

2.05   Our programme scope excludes:

- The switching arrangements for consumers that are directly connected to the national electricity and gas transmission networks, unmetered consumers and those being supplied on licence-exempt networks and/or by licence-exempt suppliers. These operate bespoke switching arrangements and we are focusing on the arrangements for the majority of consumers.
- The initial consumer acquisition activities, eg marketing, in advance of the point when a consumer enters into a contract.
- Defining new rules or requirements for how suppliers bill their consumers. It will however need to ensure that the new arrangements support suppliers' ability to meet any billing requirements that they have.
- The design of any industry arrangements for loading the new supplier's security key onto a smart meter as part of a switch. Arrangements have been developed for loading security keys at smart meter go-live. It is expected that amended arrangements will be required once the roll-out is underway. These enduring arrangements are being considered by the Smart Meter Implementation Programme (SMIP). The CRS will support the enduring industry arrangements for the loading of security keys onto smart meters once this has been finalised.
- Industry code consolidation. This Programme is expected to require significant parts of existing codes to be removed and new switching rules to be incorporated into the SEC. While we recognise that this may result in opportunities for code consolidation, any work to progress this would be undertaken separately, if appropriate.

- Ofgem's review of objections. This work is being progressed as a separate project. As described in Ofgem's draft 2015/16 Forward Work Plan[6] we aim to undertake a review of the objections process. This will include whether the current arrangements could be improved so that consumers in debt are more easily able to get the best deal, while ensuring suppliers are able to take appropriate steps to have debt repaid. The outcome of this work is important to the switching process and will feed into process design in the Blueprint phase of the switching programme.
- Consideration of centralisation of Data Processing (DP) and Data Aggregation (DA).[7]

---

[6] https://www.ofgem.gov.uk/ofgem-publications/92189/forwardworkprogramme2015-16.pdf
[7] As part of our work with COSEG, we concluded that centralisation of DP and DA would not be required to improve the speed and reliability of the switching process, so this will not be included in the scope of this programme.

3.   Participants in the switching process

3.01   Below we provide a summary of the main participants in the gas and electricity energy retail markets and their roles in the switching process. The interaction between these participants is illustrated in two diagrams at the end of this section.

Consumers

3.02   Consumers contract with suppliers for the supply of energy to their premises and will pay suppliers for the amount of energy consumed. In the domestic market, many consumers enter into a dual fuel contract with a single company for the supply of gas and electricity.

3.03   A consumer can choose to enter into a contract and be supplied by a new supplier. It can use a third party intermediary (TPI - described below) to help facilitate this choice. The new supplier will manage the switch on the consumer's behalf.

3.04   Domestic consumers typically have 14 calendar days after entering into a contract (the 'cooling off period') to decide whether to cancel that contract.[8]

Electricity suppliers

3.05   An electricity supplier will have a contract (or deemed contract) with a consumer to supply them with electricity. When a consumer enters into a contract with a new supplier, it is that new supplier's responsibility to manage the switch on the consumer's behalf. The new supplier will start to bill the consumer after they have completed the switch. The old supplier for that consumer will close down the old account and issue a final bill to the consumer on the basis of a change of supplier meter reading. In some instances the consumer's existing supplier can block a switch (known as an "objection") to a new supplier.

3.06   The supplier will request a switch by sending a request to the relevant electricity registration service. This service holds a record of each supply point and which company is supplying the consumer at that supply point.

3.07   The electricity supplier is responsible for paying electricity generators for the amount of energy used by their contracted consumers. It must also pay a Distribution Network Operator and the Transmission System Operator for using their networks. Consumption data is used to generate these charges via the settlement process.

Gas suppliers

3.08   A gas supplier will have a contract (or deemed contract) with a consumer to supply them with gas. When a consumer enters into a contract with a new supplier, it is that supplier's responsibility to manage the switch on the consumer's behalf. The new supplier will start to bill the consumer after they have completed the switch. The old supplier for that consumer will close down the old account and issue a final bill to the consumer on the basis of a change of supplier meter reading. In some instances the consumer's existing supplier can block a switch (known as an "objection") to a new supplier.

3.09   A gas supplier must contract with a gas shipper. It is the shipper that sends, and manages, the request to switch with the relevant gas registration service. This service holds a record of each supply point and which company is supplying the consumer at that supply point.

---

[8] There are no legislative requirements for suppliers to provide a cooling-off period to non-domestic consumers.

Gas shippers

3.10   A gas shipper is responsible for purchasing gas and arranging for it to be delivered across a Gas Transporter's network. It does this on behalf of its contracted gas supplier.

3.11   Gas shippers have the primary interface with Gas Transporters. The gas shipper will therefore manage the switching process on the supplier's behalf. Most (but not all) shippers are part of the same organisation as their contracted supplier. Some gas shippers provide services for more than one gas supplier.

Distribution Network Operators (DNOs)

3.12   Large DNOs and independent DNOs (iDNOs) (referred to collectively in this document as DNOs) own and operate the local electricity networks that deliver electricity to consumers.

3.13   DNOs are required to operate Meter Point Administration Services (MPAS) that facilitate the change of supplier process. They are also required to provide enquiry services which support the switching process and make data available to relevant parties, for example electricity suppliers.[9]

3.14   Each MPAS holds a record of all of the supply points on the relevant DNO network. This will include address data, the supplier responsible for each supply point as well as other information on the supply point (eg if it domestic or non-domestic and its settlement characteristics).

3.15   Each DNO will run its own MPAS. It will operate in accordance with a set of rules that provide equivalent services for electricity suppliers.

Gas Transporters (GTs)

3.16   Large GTs and independent GTs (iGTS) (referred to collectively in this document as GTs) own and operate the gas networks that deliver gas to consumers.

3.17   GTs are required to operate registration services that facilitate the change of supplier process. They are also required to provide enquiry services which support the switching process and make data available to relevant parties, for example gas shipper and suppliers.[10]

3.18   Large GTs are required to put in place an agent (Xoserve) that operates the registration process on their behalf. iGTs currently run their own registration services although modifications are being made to transfer this responsibility to Xoserve as part of Project Nexus. For the purpose of this TOM it is assumed that Xoserve will provide these services for the iGTs and Large GTs (see Figure 1 below).

3.19   Each gas registration service will hold a record of all of the supply points on the network. This will include address data, which supplier and gas shipper is responsible for each supply point as well as other information on the supply point (eg if it domestic or non-domestic and its settlement characteristics). Gas registration services also hold information on the metering technical details and meter reads taken at the premises.

Data and Communications Company (DCC)

3.20   The DCC is the licensed central body appointed to provide the communications and data transfer and management services required to support smart metering. DCC is expected to go live for smart metering in 2016.

3.21   The DCC is a critical element of the future switching arrangements, but not an active participant now. We propose to expand the role of the DCC to include the provision of the CRS to hold

---

[9] The on-line enquiry service provided in the electricity industry is known as ECOES.
[10] The service provided by Xoserve of behalf of GTs is known as the Data Enquiry Service (DES).

registration data and support switching in the gas and electricity markets. This new registration service would also be required to provide services to support existing settlement and network charging obligations.

Metering agents

3.22 Suppliers must appoint metering agents (which may be independent or may be 'in-house' ie within the same company or group) to:

- install and maintain meters
- collect meter readings from meters that are not smart meters operated by DCC, and
- in electricity, to process and aggregate meter reading data to send into settlement.

3.23 On switching, metering agents exchange data with each other and suppliers to facilitate the above functions and suppliers' ability to bill consumers.

TPIs

3.24 Third Party Intermediaries (TPIs) include switching websites, energy brokers and energy efficiency advice providers who interact with energy consumers. TPIs can offer advice and products to assist with a range of functions including energy procurement, efficiency and management for both domestic and non-domestic consumers.

How participants currently interact

3.25 Figures 1 and 2 provide a high level summary of the role of the key participants in the current gas and electricity switching processes respectively. This is a significant simplification of the actual switching processes which, in reality, are complex with multiple exchanges of data between parties.

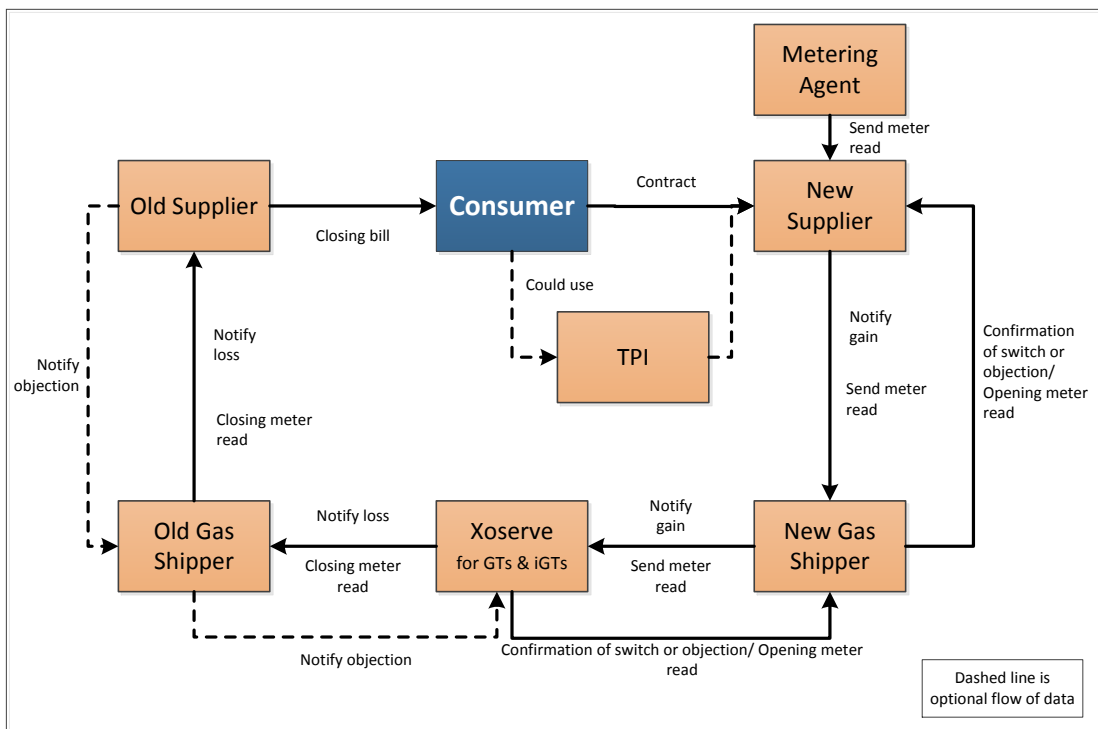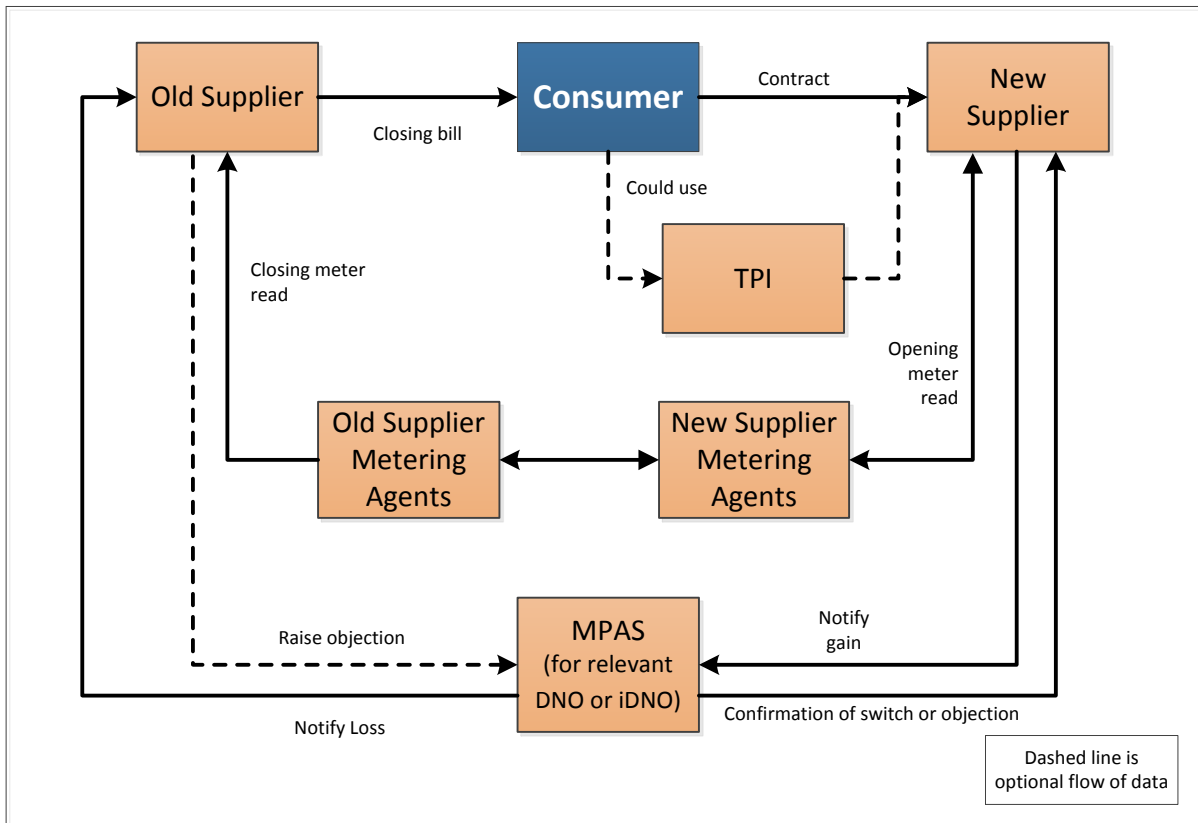**Figure 1: Summary of current switching arrangements for gas**

Figure 2: Summary of current switching arrangements for electricity

4.   Summary of current and proposed switching arrangements

4.01   The gas and electricity markets operate separate switching arrangements. They share many common features at a high level but the detailed arrangements are different.

4.02   We want to change the existing registration model to a single CRS which holds accurate data and operates common switching arrangements for all gas and electricity supply points on networks operated by licenced GTs and licensed electricity DNOs. We propose that this service is established and run by the DCC.

4.03   Smart metering and a new CRS provide the opportunity to design systems and processes that will support faster, more reliable switching. It provides an opportunity to join, harmonise and simplify the switching processes and data management that support the retail market. However, different arrangements will continue to be needed in gas and electricity to manage separate wholesale, balancing and settlement processes in both markets.

4.04   The following section provides a high level summary of the key steps in the current gas and electricity switching processes and compares this to our proposal for next-day switching on the CRS. Further detail on our proposed new arrangements, for example in relation to erroneous transfers and the new supplier loading security keys for smart meters, is set out in Section 7.

Step 1: Consumer enters into a contract

4.05   **Current process**: A consumer enters into a contract with a new supplier to be supplied with gas, electricity or both. This contract may be entered into via a TPI service. For example, a consumer can enter into a contract through a price comparison website or energy broker.

4.06   **Proposal**: As above, a consumer will enter into a contract with a supplier, including through a TPI. To meet our aim of next-day switching, the TPI will need to ensure its activities to facilitate and support the switching process are based on accurate information and are undertaken quickly.

Step 2: New supplier led switching process

4.07   **Current process**: The new supplier will send a request to the gas and/or electricity registration service to take over responsibility to supply gas or electricity to its contracted consumer's premises. In gas, this request is sent via the gas shipper. For Large Supply Points (LSPs) in the gas market, there are additional steps in the switching process that allow a shipper to send an enquiry to the registration service as well as a "Supply Point Nomination" prior to confirming the request to switch the site. This provides information to the gas shipper and supplier about the characteristics of the site so that they can offer the right contractual terms to the consumer.

4.08   **Proposal**: We will retain the requirement for the new supplier to make the registration request. This request will be sent to the CRS rather than the network run registration services. A supplier should also be able to send a single request to switch the gas and electricity supply at a consumer's premises. Our current view is therefore that these requests will be directly from the gas supplier, rather than the gas shipper. Therefore the gas shipper will no longer be responsible for managing the interaction with the registration service for gas consumers. We will investigate any requirements for suppliers to access information on the characteristics for large sites to help them develop their contractual offers for non-domestic consumers.

Step 3: Switching speed

4.09   **Current process**: In the domestic market, suppliers have agreed to time their switching request so that the transfer will conclude around 17 calendar days after the contract has been entered into. This typically requires a switching request to be sent during the 14 day cooling-off period with the switch completing three days after that. Suppliers have licence obligations to switch consumers within three weeks after the end of any cooling-off period.

4.10 **Proposal**: Suppliers will be able to switch consumers so that, if consumers wish, they can be supplied by their new supplier at the start of the day after the contract is entered into.[11] Consumers may choose to switch at a later date if that better suits their needs. We are not proposing that consumers would be able to switch before the start of the next day.

Step 4: Cooling-off

4.11 **Current process**: Where a domestic consumer cancels their contract during the cooling-off period, the new supplier will seek to withdraw its switching request. If it is not able to do so (for example, where the switch has already taken place), the new supplier will send a request to the previous supplier asking it to switch the consumer back.

4.12 **Proposal**: A domestic consumer will be able to cancel their contract within the cooling-off period and be returned to their previous supplier on the contract terms they would have been on had they not switched. The requirements for these cooling-off arrangements are covered in more detail in Section 7.

Step 5: Objections

4.13 **Current process**: The registration service will process the request and will notify the current supplier that a request has been received. The current supplier will decide if it has grounds to object in accordance with its licence obligations. If it does, it may block the transfer. It does this by sending a message to the registration service to stop the switch from taking place.

4.14 **Proposal**: Suppliers that want to use the objections process will maintain an up-to-date and accurate record within the CRS of which sites they would object to if a switching request was made. This means that the CRS can identify near real-time if the switch should not proceed. Note that, as described above, we are currently reviewing the role that objections should play in energy markets.

Step 6a: Metering arrangements – electricity

4.15 **Current process**: The gaining supplier will appoint metering agents to maintain the meter and process meter reads for settlement. It may also need an agent to obtain the read (unless it is an enrolled smart meter with meter reads obtained via the DCC). The losing supplier will de-appoint its existing metering agents. The gaining and losing suppliers' metering agents exchange metering data. This is necessary to enable the new agents to perform their functions and to facilitate a change of supplier meter read that can be used by the losing supplier for their closing bill and by the gaining supplier to open the consumer's account. This change of supplier meter reading will also be used to determine the allocation of settlement and network charges between the suppliers.

4.16 **Proposal**: The CRS will become the master repository and source for supply point data. The CRS is not expected to hold additional electricity metering data centrally (i.e. consumption history and comprehensive meter technical details (MTDs)), but access to this data is expected to improve with the introduction of other reforms, including the roll-out of smart meters. Suppliers will continue to appoint the relevant metering agents to support the switching process and use DCC services to collect meter readings from smart meters.

Step 6b: Metering arrangements – gas

4.17 **Current process**: In the gas market, the registration service holds metering data and will validate the change of supplier meter read provided by the gaining supplier. Where a read is rejected, or is not provided, it will generate an estimate and send that to both suppliers.

4.18 **Proposal**: The CRS will become the master repository and source for metering equipment, site data and other metering data currently held by the registration service. Suppliers will continue to appoint

---

[11] Note that the electricity day starts at midnight. For gas it will starts at 5am from October 2015.

the relevant metering agents to support the switching process and use DCC services to collect meter readings from smart meters.

Proposed switching model: Summary diagram

4.19   The following diagram provides a summary of how the proposed new switching process would operate for both the gas and electricity markets. There will continue to be interactions between suppliers and metering agents and the DCC, as highlighted above. These are intended to be simplified and the precise nature of these interactions will still depend on the fuel type, meter type, whether the consumer is domestic or non-domestic, and on the range of data held centrally. For simplicity, interactions with metering agents and the change of supplier meter reading process is not included in this diagram. Nor are any required interactions with gas shippers.

Figure 3: Summary of future switching arrangements for electricity and gas
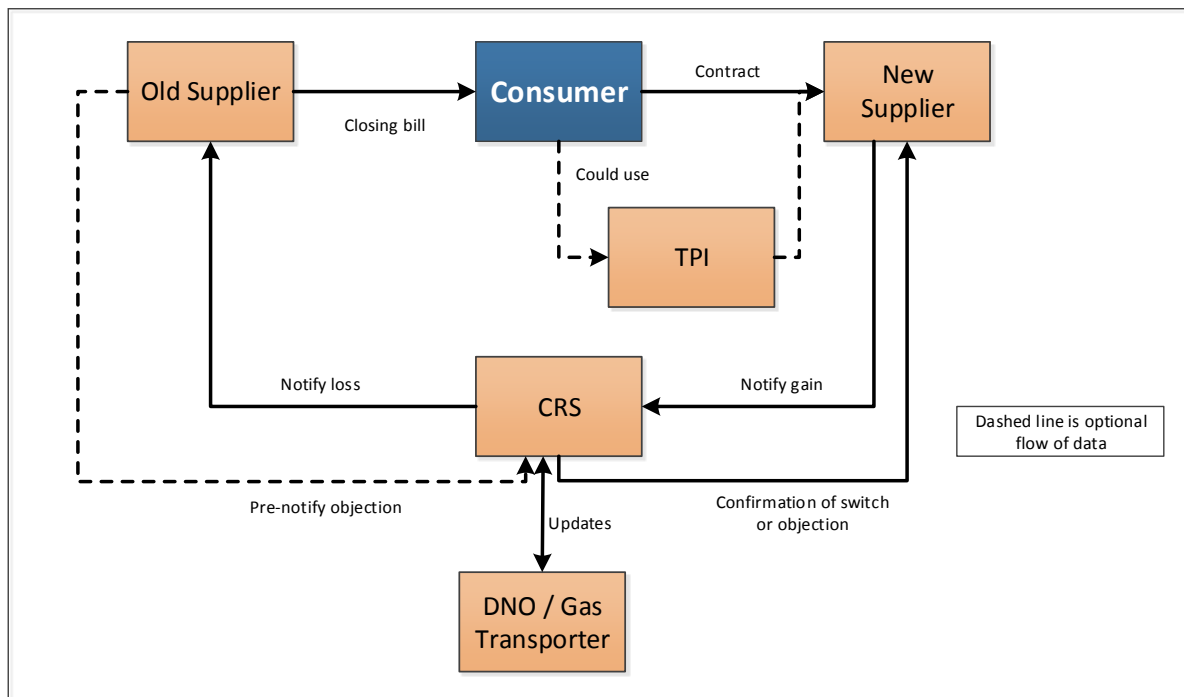
5.   Summary of current and proposed regulatory framework

5.01   The regulatory framework for the gas and electricity industry in Great Britain is set out in European and domestic legislation, licences and industry codes. The key obligations linked to the switching process are set out in licence and industry codes.

Regulatory Instruments

5.02   Figure 4 below shows the hierarchy of regulatory instruments in the energy industry.

Figure 4: Hierarchy of domestic regulatory framework
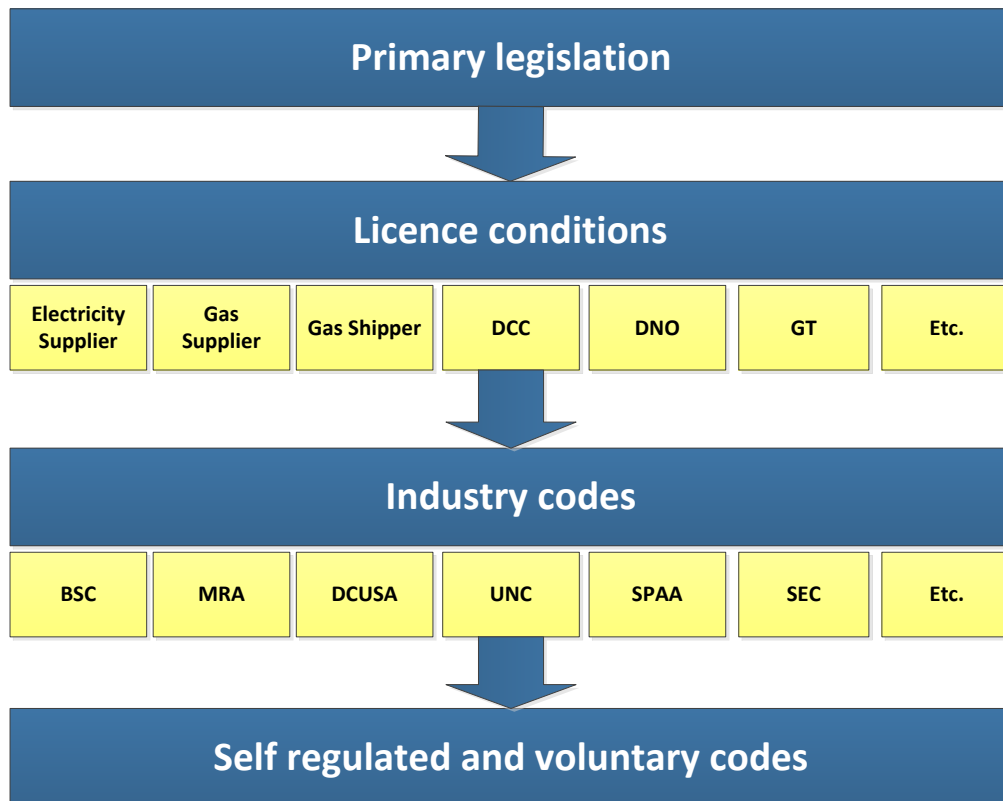
Primary Legislation

5.03   Primary legislation provides the foundation of regulation in the electricity and gas industries, particularly through the provisions of the Electricity Act 1989, the Gas Act 1986, the Energy Acts 2004, 2008 and 2010, the Enterprise Act 2002 and Utilities Act 2000.[12]

5.04   The Gas Act and Electricity Act make it unlawful to carry out certain activities without holding a relevant licence. These activities are described in legislation and include generating, transmitting, distributing and supplying electricity and transporting, shipping or supplying gas. They also include interconnection and smart meter communication.

5.05   Primary legislation can provide the powers to implement significant policy change through licences and other regulatory instruments.

---

[12] Sitting above this domestic legislation are European rules. These include the Third Package of energy reforms and the Consumer Rights Directive.

Licences

5.06   Electricity and gas suppliers, gas shippers, GTs, DNOs and the DCC are required by legislation to be licensed[13] (and to operate in accordance with the obligations set out in licence conditions.

5.07   The DNO and GT licences require them to establish and operate registration services for the supply points on their networks. In moving to a CRS, we expect these licence obligations to be removed and for new licence obligations to be placed on the DCC.

5.08   Suppliers have specific licence obligations on switching speed (three weeks after any cooling-off period). Licence obligations also specify when a supplier is permitted to block a switch and requires the outgoing supplier to send a final bill to the consumer within six weeks of the switching taking place.

5.09   Licences also contain requirements to comply with industry codes. These codes contain the detailed rules on how the switching process operates.

5.10   Failure to comply with the licence obligations carries the risk of enforcement action by Ofgem, which could result in financial penalties, enforcement orders or revocation of the licence.

Industry codes

5.11   Industry codes are typically multi-party agreements that describe the detailed operation of the market including the switching process. These codes have arrangements which allow for changes to be made to the processes set out in the codes. In some cases these changes require Ofgem's approval, whilst others can be determined by code parties.

5.12   There are a number of existing industry codes that describe the current switching process (further information is provided in the glossary):

Electricity
- Master Registration Agreement (MRA)
- Balancing and Settlement Code (BSC)
- Distribution Connection and Use of System Agreement (DCUSA)

Gas
- Uniform Network Code (UNC)
- Supply Point Administration Agreement (SPAA)

5.13   The new Smart Energy Code (SEC) has been established to support smart metering. Unlike the codes described above, the SEC covers both the gas and electricity markets. It is this code that we expect to set out the obligations on the DCC to operate the CRS and to describe the switching process although there may be residual supporting requirements set out in other existing industry codes.
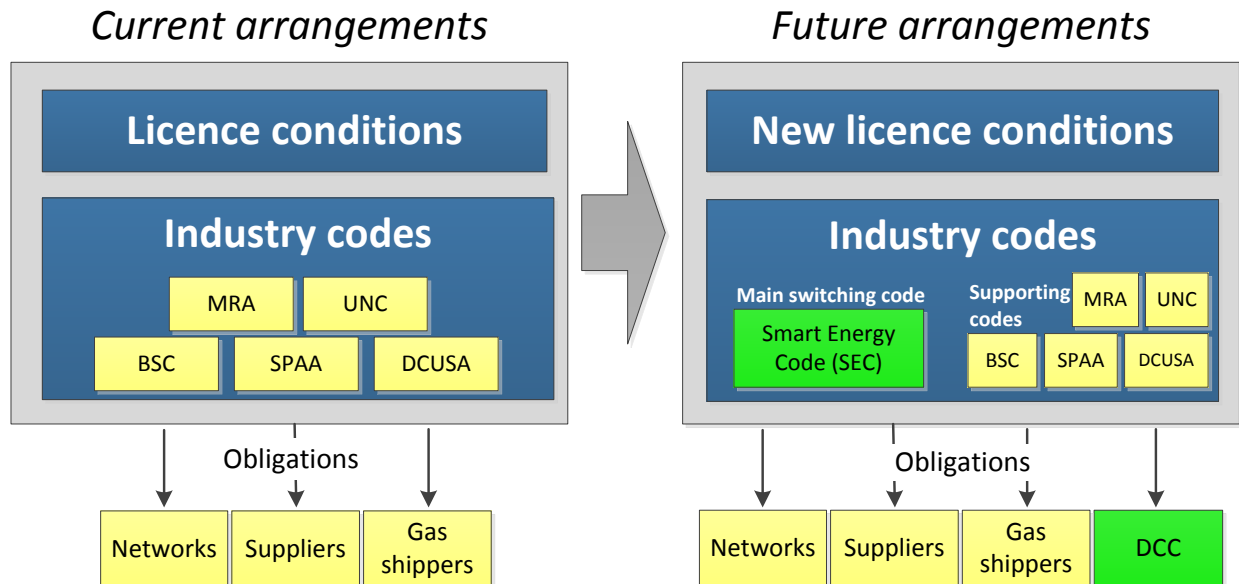
Self-regulated and voluntary codes

5.14   There are a number of self-regulated and voluntary codes that established by industry to deliver good practice (e.g. Code of Practice for Accurate Bills). We have not assessed any requirements for self-regulated codes at this stage and would expect to consider this through the Programme as part of future developments. It is possible that new codes and changes to existing codes may be required.

---

[13] Unless exempt and subject to the relevant requirements under the Gas and Electricity Acts.

Summary of current and proposed new governance framework for switching

5.15   Figure 5 below summarises the current governance structure for switching and registration and how we expect this to change to deliver our proposals for reliable next-day switching on a CRS.

Figure 5: Summary of current and future governance framework

Current arrangements

Licence conditions

Industry codes

| MRA | UNC |
| BSC | SPAA | DCUSA |

Obligations

| Networks | Suppliers | Gas shippers |

Future arrangements

New licence conditions

Industry codes

Main switching code

Smart Energy Code (SEC)

Supporting codes

| MRA | UNC |
| BSC | SPAA | DCUSA |

Obligations

| Networks | Suppliers | Gas shippers | DCC |

5.16   The target is to set out the bulk of the requirements in the SEC to deliver a single, coherent description of the switching process for both gas and electricity in one place. Some supporting elements of the switching processes might need to be retained in the current industry codes.

5.17   As described in the scope, the Programme will not be seeking wider consolidating of other elements of these industry codes.

6. The Central Registration Service (CRS)

6.01 This section describes the scope, role and characteristics of the CRS service.

Functional service requirements

6.02 The CRS will provide a range of functional services. For the purposes of this document, a functional service is an activity, or set of activities that the CRS will be required to perform. This will include:

- *Register of supply point data*: The CRS will hold relevant data for each supply point connected to a licensed gas or electricity network. The specific types of data that it will be required to hold are described in more detail below. The CRS will incorporate arrangements for new supply points to be added and removed as notified by GTs and DNOs.

- *Switching service*: The CRS will receive, hold and provide data to support the switching process (as highlighted in the 'Data Requirements' section below).

- *Smart metering support*. We will consider what data CRS might be required to hold and provide to support the operation of smart metering arrangements.

- *Green Deal support*. The CRS will hold and provide data as required to support the Green Deal arrangements. This will include verification of which metering points are linked to a Green Deal.

- *Balancing and settlement support*. The CRS will hold and provide data as required to support balancing and settlement. This will include providing the supply point data that a new supplier needs to purchase gas and electricity and meet its balancing and settlement requirements.

- *Network charging support*. The CRS will hold and provide data as required to support network charging. This will include the provision of data to DNOs and GTs to allow them to calculate and invoice suppliers (and/or gas shippers) for use of the gas and electricity networks.

- *Enquiry services.* The CRS will provide data to support the provision of on-line data enquiry services to defined market participants. We will examine if the responsibility for providing an enquiry service should remain with DNOs and GTs or be moved to DCC.

- *Provide access control to relevant data for authorised parties.* The CRS will control access to data that it holds to ensure that only appropriate parties (eg suppliers, gas shippers, GTs and DNOs, metering agents, MAPs, TPIs) have appropriate rights to view, create, update or delete data.

- *Supplier of Last Resort*. The CRS will support the ability to appoint a Supplier of Last Resort quickly and efficiently.

6.03 An appropriate analytical technique will also be used to capture and further define a full set of functional requirements (eg Use Cases).[14]

Non-functional service requirements

6.04 There will be a set of non-functional service requirements for CRS and we expect that appropriate analytical techniques will be used to capture and further define these non-functional requirements. We are likely to review DCC and its service providers' non-functional requirements as input to this process. Examples of non-functional requirements may include performance standards, usability, reliability (including integrity, audit and data retention) and supportability.[15]

6.05 The CRS will be designed to be flexible and adaptable to be able to reflect future change (eg electricity settlement reform).

---

[14] Use Cases are used in system analysis to identify, clarify and organise system requirements. A Use Case is made up of a set of possible sequences of interactions between systems and users in a particular environment and related to a particular goal.
[15] These examples have been taken from Schedule 2.1 of DCC requirements, which relate to the DSP
http://www.smartdcc.co.uk/media/6076/3._Schedule_2.1_(DCC_Requirements)_(DSP_version)_[v.1].pdf.

CRS access requirements

6.06   The first phase of the Programme (the Blueprint phase) will examine who is responsible for submitting and maintaining each data item on the CRS. It will need to identify who should be able to view that data and how any access permissions will be managed. Currently, there are different approaches in gas and electricity to the management and access of data items.

6.07   This work will be an opportunity to identify any requirements that industry parties who have traditionally not been able to access registration data may have. These may include non-domestic consumers, TPIs, Meter Asset Providers (MAPs) and other agents working on behalf of consumers and suppliers.

Data requirements

6.08   The CRS will replace the current MPAS and gas registration systems and will hold all relevant details for each registered gas and electricity supply point on GT and DNO networks. The CRS will provide registration data required by DNOs and GTs to undertake their regulatory requirements.

6.09   The CRS will be the master record for the industry data needed to support the switching process. This will include:

- The identity of the relevant supplier, shipper (gas only), GT, DNO and metering agents (including MAPs among others) linked to each supply point.
- Accurate address data for each supply point including, where appropriate, the Unique Property Reference Number (UPRN).
- The master record of all relevant settlement data requirements currently held on MPAS and Xoserve systems.

6.10   Currently, there are different approaches in gas and electricity to the management and access of these data items. The Programme will look for opportunities to harmonise the way data is held between the two markets, where doing so benefits consumers.

6.11   The Programme will examine what additional data items should be held centrally. A guiding principle will be that, where appropriate, and where it better supports fast, reliable and efficient switching, the gaining supplier should not be dependent upon the losing supplier (or their agents) to obtain the information they need to make the switch and supply their new customer. We recognise that there may be circumstances where this may not be possible (eg linked to process for the new supplier to load its security key onto a smart meter) or appropriate (in the case of consumption history and comprehensive MTDs for traditional and Automated Meter Read (AMR) electricity meters), but this remains the guiding principle.

6.12   The accountability for the accuracy of the data held on the CRS will be defined in the SEC, although, as previously noted, there may be some complementary requirements that would be more effectively retained in the existing industry codes. DNOs and GTs will remain responsible for setting up the initial data for a supply point where a new connection is made and removing the data where the supply point is removed from their network.

6.13   The Programme will consider if there is any data that might be more effectively stored elsewhere, ie outside the CRS, mindful of the overall objectives of centralising registration for gas and electricity.[16]

6.14   As noted above, the SEC will govern the business processes and management of data for the operation of the CRS.

---

[16] One example being the inventory of smart metering data held by DCC.

Communications interfaces

6.15   The CRS will support interfaces with users so that the CRS can send, receive, access and update service requests. The interfaces will be specified to meet the requirements of the business processes defined in the SEC.

6.16   Data to be stored by the CRS and interfaces to support the creation, updating and reporting of this data will be identified in the more detailed capture of functional service requirements.

6.17   Privacy, security and any requirements for loading the new supplier's security key onto a smart meter as part of a switch as well as service levels for the CRS will be considered once the service requirements are better understood.

6.18   We anticipate that different classes of CRS Service Users will have very different requirements in terms of the speed of managing service requests, volumes of data and machine-to-machine connections. The SEC will specify the connection options available to CRS Service Users.

6.19   To support the data required for switching and CRS processes and near real-time we anticipate that it will be necessary to update the existing architecture to support near real-time service requests. We expect to consider a number of options including the DCC XML-based scripting for the DCC User Gateway rather than the managed file transfer service currently used by registration systems. All options will need to be assessed for delivery feasibility, timing and cost.

6.20   Existing industry communications incorporate peer-to-peer data exchange as well as sending data between market participants and a central body (a 'hub and spoke' model). We will review whether the CRS should incorporate a hub and spoke model to manage all communications between organisations.

7. New switching arrangements

7.01   This section describes the new switching arrangements. It builds on the high level explanation provided in Section 3 and 4.

7.02   The new switching arrangements will comprise a number of functional requirements described in the SEC and delivered by the CRS.

7.03   We want all domestic and non-domestic consumers to be offered next-day switching. During the Blueprint stage we will consider whether it is necessary to build in any different arrangements to manage any specific requirements for each market.

7.04   To illustrate how the process might work in practice, we have made some working assumptions in this section, largely around the timing for activities. These are not definitive and any timings will need to be assessed as part of the Programme:

- We have set a working assumption that registration requests will be sent to CRS by 17:00 hours. This is illustrative to demonstrate that we expect activities and processes to be completed in time for registrations to become effective the next day.
- We have illustrated that requests may be responded to by CRS within 60 seconds. This will have to be subject to impact assessment for technical feasibility, cost and impact on delivery timescales, but it sets an expectation of the order of magnitude of service performance.

Consumer enters into a contract with gaining supplier

7.05   A consumer will be able to enter into a contract on one day and to start being supplied by their preferred new supplier at the start of the next day. Consumers will be given a choice of a longer switching period so that they can pick a start date that meets their specific needs (eg linked to the end of a fixed-term contract or timed to coincide with when they will be moving into a new premises).

7.06   Consumers may enter into contracts with a gaining supplier though TPIs such as price comparison websites or brokers. TPIs will need to be able to send confirmation of a consumers request for supply to suppliers quickly so that the supplier can undertake the checks it requires before sending a switching request to the CRS.

7.07   In designing the CRS, there is an opportunity to consider how the relationship between suppliers and TPIs is best managed to support next-day switching and the extent to which TPIs can have access to the CRS services (eg supply point data).

Gaining supplier registers the switching request

7.08   The gaining supplier will be able to submit a transfer request to the CRS on any calendar day up to a specified time (eg 17:00 hours). The switch can be scheduled to take place at the start of the next calendar day (or on a later date if requested by the consumer).

7.09   A gaining supplier will be able to send a single transfer request to the CRS to coordinate the switching of both gas and electricity supply points. The transfer request will contain the necessary information relevant to the switching of both supply points including the MPAN and MPRN.

CRS rejects the switching request

7.10   Where the transfer request is rejected by the CRS system (for example due to a data error or the request for a next-day transfer being received after 17:00), the gaining supplier will be notified quickly by the CRS (eg within 60 seconds).

7.11   The gaining supplier will therefore be able to determine quickly if the switch will proceed. The switch should be capable from being effective from 00:00 hours the following day for electricity or 05:00 hours for gas (or at some future date agreed with the consumer).

Losing supplier blocks the switching request (objections)

7.12   If objections are to be permitted under next-day switching, a radical change to the objections process is needed. Our proposal is that the CRS will have a flag for each domestic and non-domestic supply point that determines whether a proposed transfer request is or is not blocked. Suppliers will be responsible for maintaining the status of that flag. Any objection to a transfer request must be made in accordance with Supply Licence Condition 14 (SLC14) of the gas and electricity supply licence conditions. The incumbent supplier will notify the consumer that they have objected to the proposed transfer in accordance with their licence obligations.

7.13   Where the objections process is retained and the transfer request is blocked by an objection from the losing supplier, both suppliers will be notified of the objection by the CRS within 60 seconds of a transfer request being submitted.

7.14   We will also examine the potential for a compressed objection window – the time period in which a supplier may object to a transfer. For example a one-day objection window would support a two-day switching process (ie without the need to implement the proposal in Section 4 for suppliers to notify CRS of which sites they would object to).

7.15   As noted above in Section 2, Ofgem is reviewing the role that objections play in energy markets.

Consumer cancels the switching request

7.16   Domestic consumers typically have a statutory 14-day cooling-off period during which they may cancel a supply contract.

7.17   The CRS will support a process for returning a consumer to their previous supplier in the event of a contract cancellation. Where the consumer sends a cancellation notice within the cooling-off period, the gaining supplier will initiate a switch back to the losing supplier. The consumer will return to their previous supplier on the same terms and conditions that they were being supplied on before the switch. The use of this process will be governed in the SEC and will require a change to the supply licence conditions. Key features of the process are:

- The consumer need only contact the gaining supplier to notify them that they have terminated the contract.
- The gaining supplier will send a request to the CRS to switch the consumer back to the losing supplier.
- The CRS will notify the losing supplier of the request, restore the losing supplier as the registered supplier and process any associated changes for correcting metering agent appointments.
- The losing supplier will contact the consumer to notify them that they are again their supplier and confirm the contract terms on which they are being supplied.
- Consideration will need to be given to the use of meter readings and the processing of metering data in this process.

7.18   This process could also be adapted to return a consumer's supply point to the original supplier following an erroneous transfer.

CRS notifies and completes the switching request

7.19 Shortly after a transfer request has been received by the CRS (that is not rejected or objected to), the CRS will notify the losing supplier of the supply start date and any other relevant information. Our working assumption is that the CRS will send this notification within 60 seconds.

7.20 The CRS will be configured to inform all relevant industry parties when a switch has taken place. As well as confirming to the gaining and losing supplier and relevant GT or DNO, there will be the option for including notifications directly to metering services providers, energy service providers appointed by the consumer and settlement parties.

7.21 The current electricity arrangements prevent a supply point from switching again in the two weeks following a switch. This sought to ensure that both the gaining and losing suppliers were able to manage the complexities of switch, including the appointment and de-appointment of metering agents (see below) and consumer billing. Consideration will be given in the Blueprint stage as to whether this lock-out period is required, following electricity and gas switches. Our aim is to only include lock-out periods where necessary and to minimise the length of any lock-out periods that might be required.

Change of supplier meter reading process

7.22 The Change of Supplier meter reading process must be efficient[17] and reliable. Processes must be defined for all consumer and metering types.

7.23 To ensure that there is continuity in billing and settlement and consumers are only billed once for units consumed when switching supplier, the meter reading used by the losing supplier for closing their customer's account should be from the same point in time as that used by the gaining supplier for opening their customer's account. The consumer should also be in a position to understand their meter reads and bills such that they can be confident they have been accurately billed.

7.24 The Change of Supplier meter reading should be timed to allow consumers to begin benefiting from their new tariff as close as possible to when the switch takes place. Access to the meter read must facilitate timely and accurate billing, and the timely transmission of appropriate data into settlement.

Arrangements for accessing consumption history and MTDs in electricity

7.25 For the reasons stated in the February 2015 decision document, we do not think that holding consumption history and comprehensive MTDs centrally for smart, AMR and traditional electricity meters is necessary to support reliable next-day switching.[18] However, in the event that existing reforms, or any further incremental improvements, are shown to be insufficient, and there is a compelling case made by industry, there could be scope for further review of centrally held metering data during the switching programme.

Erroneous transfers

7.26 Erroneous transfers occur where a consumer has been switched by a supplier against their wishes. The new switching arrangements will be designed to ensure, as far as reasonably practical, that the gaining supplier only switches the supply point for the consumer with whom they have a valid contract.

7.27 We have identified two areas that can improve on the current arrangements, and which we will explore:

---

[17] This includes minimising a supplier's dependencies on agents and competitors, where this delivers benefits.
[18] It should be noted that some MTDs are already held on central systems, such as meter serial number. We envisage that these data items would continue to be held centrally.

- Linking gas and electricity address data. There is an opportunity for cleansing address data where existing dual fuel suppliers can ensure that the address data held for both fuels match. In addition, Unique Property Reference Numbers (UPRN) can be used to match supply points with geographic locations; a particular benefit where the supply point does not have a postal address.

- Where a smart meter is installed there may be opportunities to use two-way communication so that the gaining supplier can confirm the correct gas Meter Point Reference Number (MPRN) or electricity Meter Point Administration Number (MPAN) with the consumer.[19]

7.28   This will require further exploration with DCC, DCC Service Providers and industry within the Programme.

7.29   We will explore whether there are any other aspects of the design of the CRS services that can support suppliers in switching the correct supply point, for example in how TPI services may obtain and use registration data for the CRS.

Transfer of gaining supplier security credentials

7.30   As noted above, arrangements have been developed for loading security keys at smart meter go-live. It is expected that amended arrangements will be required once the roll-out is underway. These enduring arrangements are being considered by the Smart Meter Implementation Programme (SMIP). The CRS will support the enduring industry arrangements for the loading of security keys onto smart meters once this has been finalised.

Additional switching issues

7.31   We will review the existing registration documentation in industry codes to ensure that all relevant processes are incorporated and are consistent with the new switching arrangements. We will also look to improve these processes where possible. These processes will include:

- Processes for returning erroneously transferred consumers.
- Processes for amending a change of supplier meter read, for example when it is disputed.
- Processes for assignment of debt.

7.32   In designing the new arrangements there will also be a need to identify and acknowledge the range of supporting contractual and working arrangements that are expected to be necessary to facilitate reliable next-day switching, for example, in relation to the appointment of metering agents.

---

[19] Each supply point will have a unique reference number known as the MPRN and MPAN in the gas and electricity markets respectively.

8. Governance arrangements for CRS and switching

8.01   This section describes the governance arrangements for the new switching requirements and the CRS.

DCC and GT/DNO licence obligations

8.02   Existing licence requirements on GTs and DNOs to provide registration services will be removed.

8.03   DCC licence obligations will be modified to incorporate responsibility for providing the CRS. The DCC licence will contain obligations for DCC to establish and maintain an economical, efficient, coordinated and secure CRS and will define the scope of the service.

8.04   The DCC licence will have obligations to provide a CRS that, among other things, facilitates a reliable, fast and cost-effective switching process and facilitates effective competition between market participants.

8.05   The DCC licence will set out obligations on CRS funding and charges, procurement, and regulatory reporting (for example, quality of service and price control).

8.06   We will review if the GT and DNO obligations to maintain enquiry services should be moved to DCC.

8.07   The governance arrangements will establish obligations and incentives for DCC to deliver the registration services to CRS Service Users that meet required performance levels and do so efficiently. Key outputs will be identified to serve as performance metrics and be backed by financial incentives, for example service credits.

Supply licence obligations

8.08   All suppliers will be required to sign and comply with the SEC. This will require a change to the licences of non-domestic suppliers who are not currently required to do this (although they can do so on a voluntary basis).

SEC structure

8.09   Currently the SEC has been prepared to support the implementation of smart meters and the provision of DCC services. However, the market participants who will have an interest in registration services are not exactly the same set that will use DCC smart metering services. For example, suppliers who only deal with high-volume metering points and gas shippers are not currently parties to the SEC. All suppliers will be users of the registration services.

8.10   Consideration will therefore need to be given to how the SEC should be structured, for example, to permit market participants who only have an interest in registration services to be a party to the SEC in respect of those services only. The advantage of this approach would be to remove those market participants from the SEC obligations associated with entry testing and security that are needed for the operation of smart metering. It would also segregate the charging for services, so that parties only pay for the services that they are using.

8.11   Introducing a partition in the SEC (or other such mechanisms) that separates smart metering services from registration services will introduce complexities. For example, it may be necessary to operate different arrangements for managing modifications, with different voting arrangements to accommodate the variations in user constituencies and representation on the various committees that oversee the SEC.

SEC governance

8.12   The SEC will govern the day-to-day arrangements and set the rules for switching and management of registration services, although as highlighted above there may be some supporting requirements that would be more effectively retained in the existing industry codes. It will:

- Define a set of business processes which the CRS must support. Business processes will be defined by data elements, obligations for parties sending and receiving data, and the timing and service levels of key processes.
- Set out the obligations for DCC, suppliers, and network operators in respect of the operation of the CRS.
- Define the industry party that is responsible for particular data items held on the CRS and who is permitted to update them. It will set out which parties will be able to access what data and in what circumstances, including through any required enquiry services.
- Define the process for modifying the arrangements, dealing with non-compliance and charging for services. These will be based on the existing SEC provisions, but will need to be adapted to deal with the different requirements and market participants related to registration services.
- Include procedures to recognise where SEC modifications will need to be aligned and consequential modifications made with other codes.

8.13   The SEC will establish obligations on market participants for the data held on the registration system relating to:

- The type of data.
- The SEC party responsible for providing the data.
- The SEC party accountable for the ongoing accuracy of the data.
- The SEC party(ies) permitted to change the data.
- The SEC parties permitted to access the data.
- The roles and rights of non-SEC parties in relation to data.
- The arrangements needed to monitor and assure the performance of market participants to ensure standards of data accuracy.

Role of gas shippers

8.14   Consideration will need to be given to the role of gas shippers. Gas shipping is a separate licensable activity. Gas shippers, not suppliers, are signatories to the UNC. For registration activities, the gas shipper will pass service requests and data between the GT and the supplier. The gas shipper is responsible for managing the requirements of the UNC and paying network and gas balancing charges.

8.15   In nearly all cases, the gas supplier will hold a gas shipper licence; they will be the same organisation. In these cases, there will be a related gas supplier that is a party to the SEC in respect of registration services and the gas shipper being a party to the UNC for network operational matters.

8.16   However, it is possible for a gas shipper to provide services under contract to a number of separate gas suppliers. We will need to establish arrangements that permit a gas shipper to operate its business processes where the supplier has direct access to the registration services.

8.17   The key risk is that a supplier would gain or lose metering points without the shipper's knowledge. Were this to happen, the shipper would risk incurring balancing charges. A potential solution is for a shipper to become a SEC party (potentially under the 'Other SEC Party 'category) and to be able to subscribe to receive updates on switching that result in changes to the portfolio of supply points linked to its market participant identity. A shipper could rely on updates via the existing UNC arrangements subject to the timing of updates of GT systems. Alternatively, a link between the

supplier and shipper could be pre-registered so that incorrect combinations in data flows were rejected.

Link between SEC and other industry codes

8.18   An assessment will need to be made on the relationship needed between the registration provisions in the SEC and other relevant industry codes. We anticipate that network operators will maintain their own systems for network management and billing. These systems will require regular updates on switching activity relevant to their network. The interface between DCC systems and network operator will need to be defined and governed to provide appropriate change control. Similarly, suppliers will need to update their systems and processes to reflect the interaction with CRS rather than the current interfaces with gas and electricity registration services.

9.   Charging arrangements for the CRS

9.01   We set out below the arrangements for DCC to charge relevant parties for the provision of the CRS.

9.02   In addition to the ongoing operation of the CRS post implementation, DCC will incur costs associated with its contribution to development activities within the Programme, and procurement of the CRS. Subject to extending the DCC's licence to allow this, such costs will be recovered within the DCC existing charging regime.

Governance

9.03   The existing governance relating to charging is split across the SEC and the DCC licence. We expect the charging objectives and charging methodology under the current DCC governance arrangements to be reviewed as part of the Blueprint phase, and we recognise that not all of these may be relevant to the CRS and switching.

Charging methodology

9.04   The existing DCC charging regime is a mixture of Fixed Charges (per meter) and Explicit Charges (ie usage) to SEC Parties reflecting costs seen by DCC based on the charging objectives.[20] The vast majority of costs that DCC presently face are of a fixed cost nature and recovered from energy suppliers, GTs and DNOs via the per meter Fixed Charges. The Explicit Charges reflect the incremental costs related to using elements of the system and are a very small element overall, eg for a dedicated secure data link between each user and DCC. The costs of operating the CRS will need to be recovered within this regime (as defined /extended for CRS).

9.05   The charging methodology for determining the charges that DCC users pay for its services will be amended to include charging for CRS users. We consider that the existing charging principles underlying this regime are appropriate for the CRS. DCC is required to publish a charging statement setting out the charges for services each year and this will be expanded to include the CRS once the changes to the charging methodology are in place.

9.06   An amendment to DCC's Fixed Charges specifically relating to the CRS may be required within the charging methodology. This is because the current Fixed Charges are recovered from all domestic meters and enrolled (small sites) non-domestic meters but Fixed Charges will be allocated according to parties' number of DCC-enrolled meters at the end of the smart meter roll-out programme. By contrast the CRS will cover all registered meter points, including those that are not DCC-enrolled meters (eg non-smart and larger non-domestic sites).

9.07   Work will be required to identify what types of activities will be chargeable by the CRS. In particular, in addition to Fixed Charges, whether Explicit Charges should be introduced for any additional services that parties may choose to use.

Credit arrangements

9.08   The existing SEC regime includes credit cover requirements for service users and default arrangements should they fail to meet their payment requirements. This regime is currently considered appropriate to be extended to the CRS.

Transitional arrangements

9.09   Arrangements will be put in place to define DCC requirements and funding prior to the implementation of the CRS. We expect this to take the form of new DCC licence obligations such that the associated costs can be recovered via DCC's existing charging regime, as amended.

---

[20] The charging objectives are set out in LC 18 of the DCC licence and repeated in Section C of the SEC.

10.   Price control arrangements for the CRS

10.01   We set out below how DCC is expected to be funded for the provision of the CRS.

CRS price control

10.02   DCC is subject to price control arrangements related to its licence activities that support the requirements for the DCC operation to be economical, efficient, coordinated and secure.

10.03   We expect DCC's enduring price control, post implementation, to be amended to include an ex ante price control term related to a defined CRS requirement (with the majority of costs fixed upfront), as is the case for network companies. This is consistent with Ofgem's longer-term strategy of reviewing the existing DCC price control to assess whether an ex ante framework would be more appropriate in the future.[21]

10.04   As noted above, we will consider developing incentives as part of a price control regime to reward DCC for certain actions, for example in improving data quality, which brings benefits for consumers.

Impact on existing network price controls

10.05   Currently registration services are provided and funded by DNOs and GTs. When the CRS is established, they will no longer be required to carry out this function. This may lead to cost savings for some firms. However, they will also be required to build and maintain arrangements that support the exchange of data with the CRS and their existing system, which could lead to additional costs.

10.06   The current price controls run from 2015 to 2023 for electricity and from 2013 to 2021 for gas. Cost changes due to the CRS would therefore fall during this price control period. Although there is a possibility of reopening a price control should costs change significantly during a price control period, we do not believe that this would be a realistic option here. There is a materiality threshold for reopening the price control: this is set at one percent of average annual base revenue after the application of the efficiency incentive rate. The changes to costs created by the CRS are expected to be an order of magnitude below this threshold.

10.07   iDNOs and iGTs may incur costs around interfacing with the CRS. Since the independent networks are subject to a relative price control with respect to the monopoly networks, we expect that the same approach will be taken towards them as for the monopoly networks.

---

[21] Ofgem, DCC price control consultation, p.37-38. (https://www.ofgem.gov.uk/ofgem-publications/91527/dccpricecontrolconsultation.pdf)

11. Delivery approach for the CRS and switching arrangements

11.01 This document describes at a high level what the future switching and registration arrangements will look like. This section describes how they will be implemented once codes and licence modifications have been agreed.

11.02 At this stage, we have planned a number of activities to deliver the new CRS and provide the necessary assurance that the new switching arrangements will work:

- **CRS delivery** - how the CRS will be procured and tested internally to be ready to test as part of the wider switching arrangements.
- **Market readiness and testing** - what is required to provide assurance that the market is ready to go live with the new market arrangements.
- **Transition and implementation** - how the market moves from current arrangements to the new switching arrangements on the CRS.

11.03 The most efficient and effective implementation model will be considered during the Blueprint phase of the Programme and will take into account learnings from the Smart Metering Implementation Programme (SMIP). We have described what these might look like in this section to add some context for interested stakeholders and other major industry change programmes.

CRS procurement

11.04 The DCC's licence will require it to procure the CRS via an external competitive tendering exercise. We expect that this procurement will be executed in accordance with DCC's published procurement strategy.[22]

11.05 We expect that this procurement will appropriately involve Ofgem and other stakeholders (eg including review of the process and key products – evaluation criteria, scoring etc).

11.06 To allow effective procurement, the design baseline and service standards for the CRS will be clear, appropriate and agreed with stakeholders. A clear design baseline will be required at key stages of the CRS procurement and development so there is certainty on arrangements against which the CRS is being procured.

11.07 Through the procurement process, we expect DCC to establish, agree and enter into a contract with a CRS provider (CRSP) which:
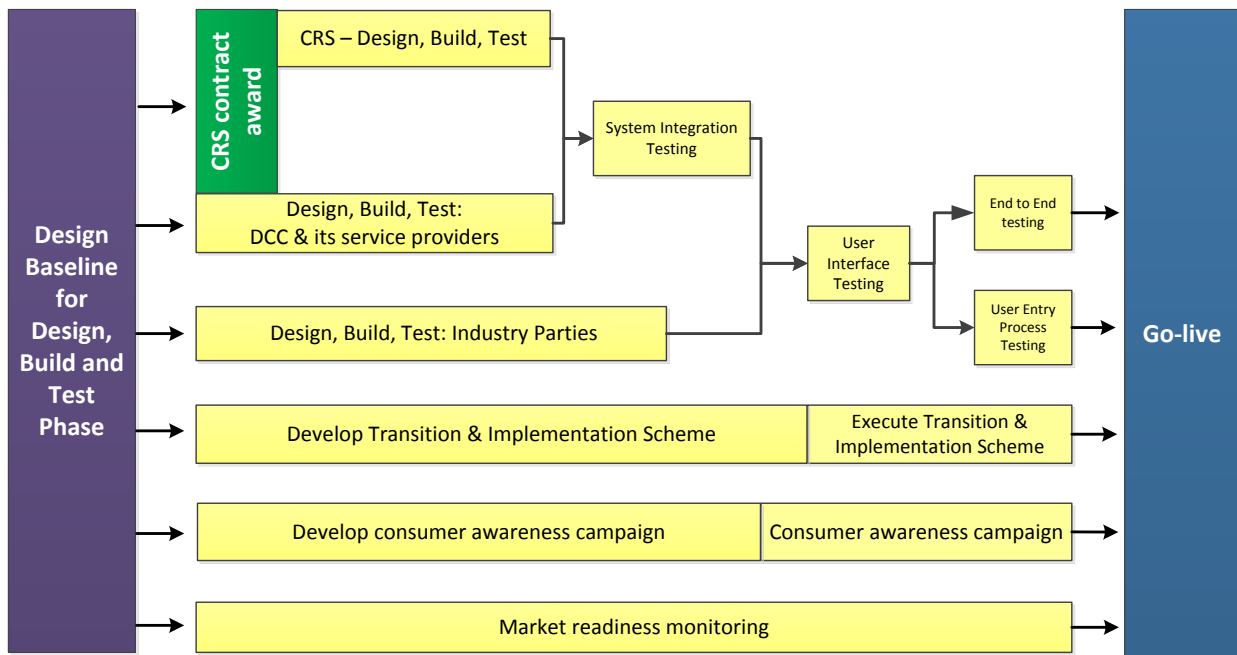
- is cost effective
- complements the overall plan for the Programme and does not place the delivery plan under undue risk
- has acceptable terms and conditions, and
- has stakeholder confidence in the ability to deliver on time and to cost a CRS which is consistent with the design baseline.

Implementation activities after CRS procurement

11.08 We have considered what the implementation activities might look like after the completion of the final development design baseline and procurement of the CRS. These are summarised in Figure 6 below.

---

[22] https://www.gov.uk/government/consultations/dcc-procurement-strategy-and-statement-of-service-exemptions

Figure 6: Summary of potential delivery activities

11.09   These activities would deliver a CRS that is fit for purpose and provide assurance that new switching arrangements work and can be used by market participants.

11.10   We expect that there will be a set of assurance activities to provide the Programme board with the necessary information to inform its decision on Go-Live. We will review the requirement for independent assurance on market readiness to support this decision.

Testing

11.11   We have set out a series of testing phases to demonstrate what might be undertaken in the Programme. At this stage, this is not a definitive set of tests that we intend to run – it is illustrative.

11.12   We have used naming conventions that are consistent with the DECC SMIP's definition of testing, as stakeholders are familiar with it. There will be nuances associated with testing for our Programme and these will be considered through the development of testing strategies and testing material in the lifetime of the Programme. For example: is User Entry Process Testing an enduring requirement or just the testing of participants before Go-Live; do we execute the testing of the CRS arrangements first, then test users' capability afterwards?

11.13   For any testing phase there will need to be a testing strategy defined and then a testing plan to show how it is executed and how incremental assurance on the CRS and switching arrangements is delivered. Testing is intended to build confidence incrementally and we expect that there will be entry and exit criteria defined for each of these activities. Each testing phase will require scripts, test data and expected results.

11.14   There will be preparatory activities completed earlier within the Programme to ensure that these implementation activities can be executed robustly.

CRS Design, Build & Test

CRS Design & Build

11.15　Once contracted, we expect that the CRSP will finalise the detailed design of the CRS from the design baseline they have been contracted to. This will enable industry to develop their services to the required timescales and service standards.

11.16　The CRSP will build its service to the specified detailed design baseline with processes, systems, physical environments and operational interfaces.

CRS Internal Testing

11.17　There will be a series of internal testing phases defined by DCC. These will provide increasing levels of assurance on the capabilities of the CRS service until it is ready for testing together with the other services operated by DCC and its service providers in an integrated DCC environment. Consideration will be given to the need for independent assurance that testing has been successfully completed.

Design, Build & Test: DCC (and its service providers)

11.18　We expect that the development of the CRS will require changes to DCC and its service providers' processes systems and interfaces.　Once all of the required industry code modifications and licence condition changes have been agreed, we expect that DCC will initiate the detailed design, build and test of all of the relevant services provided under its licence in line with an agreed timetable and to the quality standards specified.

System Integration Testing (SIT)

11.19　We expect that DCC will undertake SIT to prove that the new CRS integrates with its service providers, as well as any activities and services that need to be undertaken at DCC itself.　We expect that this will operate in a similar way to SIT defined within the SMIP[23] to demonstrate that DCC is capable of delivering all services set out in its licence and relevant industry codes (including that these services are scalable to the expected volumes).

11.20　SIT provides confidence that any integration issues at DCC are resolved in advance of wider industry testing with the new CRS.

Design, Build & Test: Industry Parties

11.21　The modified licences and industry codes will set out obligations on industry parties that will require changes to their processes, systems and interfaces. Once these changes have been agreed, we expect that industry parties will initiate the detailed design, build and test of their changes in line with an agreed timetable and to the quality standards specified.

User Interface Testing (UIT)

11.22　UIT enables the CRSP to prove that it can interoperate with CRS Service Users in a set of interface tests for the CRS and new switching arrangements. In practice, it is expected that UIT will take place between the CRPS and a group of selected Service Users.

11.23　We expect that there will be quality standards set for entry into UIT and E2E testing that will ensure industry parties have to demonstrate suitable success of their testing to demonstrate readiness for UIT and E2E testing.

---

[23]https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/327288/smip_system_equipment_testing_consultation_response.pdf

End to End (E2E) Testing

11.24   E2E testing enables the CRSP to demonstrate that it can operate all of the services that it is required to provide. As with UIT, this may be undertaken with a group of selected Service Users.

11.25   E2E testing will demonstrate that the new market arrangements (including the licence obligations, industry code requirements and design baseline) are fit for purpose. This is achieved by ensuring that DCC, its service providers and a number of Service Users successfully complete E2E testing that will run through all of the systems and processes required.

User Entry Process Testing (UEPT)

11.26   UEPT will demonstrate that service users will be able to operate according to their obligations in the new market arrangements (including the licence obligations, industry code requirements and design baseline).

11.27   The expectation at this stage is that all Service Users will need to have completed UEPT before they can operate in the new arrangements.

11.28   UEPT may not have the same principles as those defined in the DECC SMIP, where UEPT is an enduring set of tests for new entrants into the market. We will look at the principles of the DECC SMIP to understand if they are applicable to switching. One area to explore is the need for any enduring UEPT for new entrants, once the new arrangements have been implemented.

11.29   We may consider whether there is value in informal testing to support users in advance of formal UEPT.

Market Readiness Monitoring

11.30   There will need to be monitoring of different market participants to provide assurance in advance of participation of testing and Go-Live and the approach taken is likely to vary by type of market participant. Some examples are shown below for illustration, but this will require further development through the Programme and there is further thinking required on how monitoring will take place:

- The CRSP will be closely managed by DCC against its contract for delivery (potentially with incentives for delivery) in accordance with the timetable and quality standards specified in its contract.
- DCC will be closely managed against its licence and any SEC obligations for delivery in accordance with the timetable and quality standards specified. We expect that DCC will use its contractual framework with its service providers to implement any relevant changes to those arrangements.
- Service Users will be monitored with readiness reporting required to Ofgem.
- As noted above, there will be criteria defined for entry and exit of each testing requirement.
- Go-Live criteria will be established that must be met before the new arrangements can be implemented.

Consumer Awareness Campaign

11.31   The Programme will support the delivery of a consumer awareness campaign so that consumers know that the new switching arrangements are in place. There will be a set of definition and preparation activities required and the scope and nature of these activities will be agreed. It will be important to define who has responsibility for delivery of consumer awareness campaign activities.

Transition and Implementation Scheme (TIS)

11.32   The TIS will describe how the implementation of the CRS and new switching arrangements, through to operation, will be managed.

11.33   The TIS will incorporate:

- Arrangements for the migration and cleansing of data.
- Arrangements for the transfer to new governance arrangements (ie from programme governance to the enduring arrangements under licences and industry codes).
- An implementation plan including the identification of key milestones and dependencies.
- Roles and responsibilities of key stakeholders with regard to the TIS requirements.
- Governance of the TIS during the transition period.
- How the governance and change management process during design, build and test (as described below) will be closed and new SEC-governed change management will be introduced.

11.34   The TIS will define how the CRS and the new switching arrangements will be implemented. Options for the implementation technique include all parties implementing at the same time (ie 'Big Bang'). An alternative would be for a more gradual or 'staged' approach (for example based on geographic regions, market segments (including meter type or consumer types) or restrictions on volumes of transactions). A further alternative would be for the CRS to incorporate the functionality to process transactions using current file formats such that more ambitious suppliers could adopt the new arrangements more quickly whilst others undertook a slower transition.

11.35   The TIS aims to manage transitional issues and implementation risks for industry and consumers. It will be developed and refined during the Programme. We will consider whether development of the TIS should be made the responsibility of an individual party (eg DCC). We expect that it will be consulted upon and agreed through the Programme governance structure. We will also consider which parties should deliver and oversee the operation of the TIS and how assurance will be provided that the elements of the TIS are on track.

11.36   We will consider the requirements for regulatory obligations for Service Users during the transitional governance arrangements to complete the activities set out in the TIS that will enable Go-Live.

Design, Build & Test: Phase Governance and Change Management

11.37   There are likely to be changes to the design baseline against which the CRSP has been initially contracted and industry parties/DCC are building against. Therefore, there will be a change management process in place to amend any changes to the baseline before Go-Live in a transparent and structured way.

11.38   The requirement for the CRSP to adopt revised baselines will be incorporated within the terms of the contract.

11.39   The change management process will incorporate (amongst other things) the following:

- A mechanism to assess any potential change against a set of agreed criteria including technical feasibility, cost, risk and delivery timing.
- Each change or set of changes agreed at a certain point will be recorded as a new baseline.
- The Programme will provide notice of all revised baselines over this period and the CRSP will amend its design, build and testing arrangements accordingly and industry parties will build to the new baseline.
- CRSP will notify DCC and industry if it considers that changes to the design baseline are required for it to build or test appropriately.

12.   Glossary

A

Automated meter reading (AMR)

A type of smart meter that allows one way communication to remotely collect consumption data.

B

Balancing and Settlement Code (BSC)

The BSC contains the governance arrangements for electricity balancing and settlement in Great Britain.

C

Central electricity metering database

A reform proposal to hold Meter Technical Details (MTD) and historic meter read data centrally for electricity AMR and traditional meters in order to avoid the need to transfer these details between agents at change of supplier.

Centralised registration service (CRS)

A future service, procured and run by the DCC to facilitate switching at gas and electricity premises.

Change of Supplier Expert Group (COSEG)

Expert group formed by Ofgem with representatives from suppliers, networks, industry code experts, consumer representatives and government to help develop key aspects of the change of supplier process.

Consumer Empowerment and Protection Project

This project seeks to ensure that regulation enables consumers to engage effectively in smarter markets.

Consumer Rights Directive 2011/83/EU

The Consumer Rights Directive 2011/83/EU aims to simplify consumer rights in certain important areas, mostly relating to buying and selling.

Cooling-off period

Domestic consumers will typically have a 14-day cooling off period when they enter into a contract with a new energy supplier. During this time a domestic consumer can cancel the service contract it has entered into with the energy supplier.

D

Data Aggregator

As part of the electricity settlement process, the party appointed by a supplier to package up consumption data to meet the requirements set out in the Balancing and Settlement Code.

Data and Communications Company (DCC)

The Data and Communications Company (DCC) is a central communications body appointed to provide the communications and data transfer and management required to support smart metering. It is responsible for linking smart meters in homes and small businesses with the systems of energy suppliers, network operators and

other companies. The DCC will deliver data and communications services for smart meters through its external providers.

Data Enquiry Service (DES)

A web based tool operated by Xoserve for the gas market, designed to be used by authorised users to interrogate certain data relating to a supply point.

Distribution Connection and Use of System Agreement (DCUSA)

This industry code provides a single centralised document, which relates to the connection to and use of DNO networks. It was established in October 2006 as a multi-party contract between the licensed electricity DNOs, suppliers and generators.

Distribution Network Operator (DNOs)

Distribution Network Operators (DNOs) own and operate the distribution network of towers and cables that bring electricity from our national transmission network to homes and businesses. There are also a number of independent DNOs (iDNOs) that typically provide network services for new developments.

Dual fuel

A type of energy contract where a consumer takes gas and electricity from the same supplier.

E

Electricity Central Online Enquiry Service (ECOES)

A national database that holds customers' MPANs as well as other site and metering data.

Electricity and gas supplier

A company licensed by Ofgem to sell energy to and bill consumers in Great Britain.

Erroneous transfer

An erroneous transfer occurs when a consumer has their supplier switched without having given consent to that transfer.

G

Gaining supplier

The supplier that is taking over the supply of gas and/or electricity at a supply point.

Gas Transporter

There are eight large Gas Transporters (GT), each of which covers a separate geographical region of Great Britain. There are also a number of independent GTs (iGTs) that typically provide network services for new developments.

Green Deal

A government initiative that helps consumers make energy efficiency changes to their homes community spaces, and businesses at no initial upfront cost. The scheme works by costs of energy efficiency improvements being recouped through instalments that are collected in the energy bill for the property. This means that a bill payer will only be responsible for payments whilst living at the property. The electricity registration arrangements (MPAS) record if there is a Green Deal plan in place at a supply point.

I

Industry codes

Industry codes and agreements underpin the gas and electricity markets and set out detailed rules for the gas and electricity markets that govern market operation and the terms of connection and access to the energy networks. The codes are contracts between signatories and provide a level playing field for services provided by central/monopoly providers, and contain interoperability requirements between competitors.

L

Losing supplier

The supplier that is losing the right to supply gas and/or electricity at a supply point.

M

Master Registration Agreement (MRA)

The Master Registration Agreement (MRA) is a governance mechanism to manage the processes established between electricity suppliers and distribution companies to enable electricity suppliers to transfer customers. It includes terms for the provision of Metering Point Administration Services (MPAS) Registrations.

Meter Operator (MOP)

Meter operators are responsible for installing and maintaining meters.

Meter Asset Provider (MAP)

Meter asset providers own and lease metering equipment to suppliers and consumers.

Meter Point Administration Number (MPAN)

A unique reference code for each supply point connected to the electricity network.

Meter Point Administration Service (MPAS)

Each regional electricity distributor in the UK (also known as the Distribution Network Operator, or DNO) operates the MPAS for a specific area of the UK.

Meter Point Registration Number (MPRN)

A unique reference code for each supply point connected to the gas network.

N

Net present value

The HM Treasury Green Book defines a net present value as the discounted value of a stream of either future costs or benefits. The term Net Present Value (NPV) is used to describe the difference between the present value of a stream of costs and a stream of benefits.

New supplier

The supplier that has taken over the supply of gas or electricity at a supply point.

O

Objections

The objections process permits an energy supplier to prevent a consumer from switching to another supplier in accordance with circumstances defined in the standard conditions of the supply licence.

Ofgem

Ofgem is the Office of Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (GEMA), the body established by section 1 of the Utilities Act 2000 to regulate the gas and electricity markets in Great Britain. It does this by promoting competition, wherever appropriate, and regulating the monopoly companies that run the gas and electricity networks.

Old supplier

The supplier that previously supplied gas and/or electricity at a supply point.

P

Prepayment meter (PPM)

A prepayment meter is a type of meter that allows consumers to pay as they go for their energy.

Project Nexus

Project Nexus is an industry project that aims to introduce new gas settlements and IGT registration arrangements.

R

Registration

Each network company is required by its licence to maintain a register of supply points connected to its network. This register includes an address and unique reference number for each supply point as well as the identity of the supplier responsible for it.

Retail Market Review

The Retail Market Review was an Ofgem project with the aims of making the retail energy market work better at serving the interests of consumers and enabling individual consumers to get a better deal from energy suppliers.

S

Significant code review

The significant code review (SCR) mechanism is designed to facilitate complex and significant changes to the codes that energy companies are required to abide by. It enables Ofgem to undertake a review of a code-based issue and play a leading role in facilitating code changes through a review process.

Smart Energy Code (SEC)

The Smart Energy Code (SEC) came into force on 23 September 2013, when the Data Communication Company's (DCC) licence was granted. The SEC is a multiparty contract which sets out the terms for the provision of the DCC's services and specifies other provisions to govern the end-to-end management of smart metering in gas and electricity.

The DCC, suppliers and network operators are required by licence to become a party to the SEC and comply with its provisions. Other bodies who wish to use the DCC's services, such as energy efficiency and energy service companies, must accede to the SEC to do so.

Smart meter

A meter which, in addition to traditional metering functionality (measuring and registering the amount of energy that passes through it), is capable of providing additional functionality, for example two way communication allowing it to transmit meter reads and receive data remotely. It must also comply with the technical specification set out by the government.

Smart Meter Implementation Programme (SMIP)

A programme of work led by the Department of Energy and Climate Change (DECC) to implement arrangements that support the roll-out of smart meters.

Smarter Markets Programme

The Smarter Markets Programme is Ofgem's way of coordinating our work to use the opportunity that smart metering presents to make retail energy markets work better for consumers.

Switching programme

This programme concerns the process used by industry to transfer a consumer from one supplier to another. Smart metering presents an opportunity to improve this process. Ofgem's ambition is for a fast, reliable and cost-effective process that facilitates competition and builds consumer confidence.

Switching process

The process by which a consumer transfers from one supplier to another.

Supplier of Last Resort (SoLR)

A supplier appointed by Ofgem to resume the responsibility for supplying gas and/or electricity to customers of a failed supplier without significantly prejudicing its ability to continue to supply its existing customers, and to fulfil its contractual obligations for the supply of gas or electricity.

Supply Point Administration Agreement (SPAA)

This industry code sets out the inter-operational arrangements between gas suppliers and GTs. It is a multi-party agreement to which all domestic gas suppliers and all gas transporters are required by their licences to sign and comply with.

Supply point register

A system that maintains the lists of supply points on a network and holds the postal address, identity of the supplier and information on the characteristics of the supply and installed metering system for each supply point. Each supply point will have a unique identifier (the Meter Point Administration Number in electricity or Meter Point Registration Number in gas).

T

Third EU Energy Package

The Third EU Energy Package refers to a package of EU legislation on European electricity and gas markets that entered into force on the 3rd September 2009. The purpose of the Third Package is to further liberalise European energy markets.

Third Party Intermediaries

Third Party Intermediaries (TPIs) include switching websites, energy brokers and energy efficiency advice providers who interact with energy consumers. TPIs can offer advice and products to assist with a range of functions including energy procurement, efficiency and management.

U

Uniform Network Code (UNC)

The Uniform Network Code defines the rights and responsibilities for all users of gas transportation systems and provides all system users with equal access to the transportation services.

Unique property reference number

Unique Property Reference Number and is a unique twelve digit number assigned to every unit of land and property in the Great Britain.

Unmetered supply

Electronic equipment that draws a current and is connected to the distribution network without a meter recording its energy consumption.

X

Xoserve

Xoserve is the Gas Distribution Networks' Agent and provides centralised information and data services for gas transporters and shippers in Great Britain.