ofgem Making a positive difference for energy consumers

Switching Programme: strategic outline case

Business case

Publication date: 19 Jan 2017

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Overview:

We want to enable consumers to switch their energy supplier reliably and quickly, including by the next day if they choose, by simplifying and harmonising the gas and electricity switching arrangements in a cost-effective manner.

Over the past year, we have led a series of industry working groups that have developed options for reforming the existing switching arrangements. These working groups have considered a wide range of issues related to the design and implementation of a new set of switching arrangements.

We have now developed a shortlist of reform packages. These range from making improvements to industry processes supported by the existing systems, to creating new central systems, providing harmonisation of the gas and electricity switching arrangements. This shortlist of reform packages will be the focus of our analysis going forward.

This business case is an important step in the development of the new switching arrangements. It sets out a blueprint design baseline for the short-listed reforms, on which we will we will now carry out a rigorous cost-benefit analysis. This will allow us to determine the option that represents the best value for money for consumers and society as a whole. The business case will expand and evolve in future as we develop our preferred reforms and further refine our intended policy, delivery and commercial arrangements.

Context

The Switching Programme is one initiative within a broader set of reforms that aim to encourage consumers to engage with the energy market, and to improve their experiences of doing so.

The smart metering programme, reform of electricity settlement arrangements, work to facilitate a transition to a more flexible energy system and other projects have the potential to transform the retail energy market. Our Switching Programme reforms are being developed to align with, support and leverage the benefits of these related initiatives. Our work is also aligned with the Competition and Markets Authority's energy market investigation remedies, which aim to improve the functioning of competition.

This business case fulfils the commitment we made in our Forward Work Programme 2016/17 to publish a blueprint design baseline of options for reforming the switching arrangements.

Associated documents

Ofgem, Moving to reliable and fast switching: Updated Target Operating Model and Delivery Approach – Decision, November 2015

Ofgem, Moving to reliable and fast switching: Target Operating Model and Delivery Approach v2, November 2015

Ofgem, Moving to reliable next-day switching – Decision, February 2015

Ofgem, Moving to reliable next-day switching: Consultation on Target Operating Model and Delivery Approach, February 2015

Ofgem, Moving to reliable next-day switching – Consultation, June 2014

Ofgem, Moving to reliable and faster switching: Switching Significant Code Review launch statement, November 2015

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Executive summary

The switching process underpins an effective energy market where competition benefits consumers. Our Switching Programme aims to improve consumers' experience of switching by designing and implementing a new switching process that is reliable, fast and cost-effective. This will, as well as bringing immediate benefits to those who switch to a more competitive tariff, encourage greater consumer engagement, which will in turn bring greater competitive pressure to bear on suppliers. We expect suppliers to react to the increased threat of losing market share by working harder to both attract new customers and retain existing ones. We expect this to lead to more innovation, improve customer service and increase downward pressure on energy prices.

The existing switching arrangements are based on processes that operate differently for the gas and electricity markets and have remained largely the same since the late 1990s. Currently, switching energy suppliers can take a significant amount of time – on average just over three weeks but in some instances much longer. The switching arrangements are inefficient and can result in consumers being let down by delayed, unsuccessful or unwanted switches. Consumers generally perceive switching suppliers as a hassle and the fear of something going wrong during a switch can discourage some from engaging.

The Switching Programme is seeking to address these problems by simplifying and harmonising the gas and electricity switching arrangements in a cost-effective manner. The new switching process should improve consumers' experience of switching, enabling them to change suppliers reliably and quickly. Our ambition is for consumers to be able to switch the next-day if they choose. Our previous analysis suggests that the costs of moving to next day switching would be outweighed by just a small increase in the number of switches per year.

Within the scope of the programme are all the activities from the point at which a consumer confirms they wish to switch to the point they get a closing bill from their previous supplier and an opening bill from their new supplier, or chooses to exercise their right to cool off, cancel the new contract and agree another contract with a supplier. The scope also includes any look-up of consumer information required to process a switch, such as address and meter information. Our review of the switching arrangements includes both the domestic and non-domestic segments of the retail energy market, and all metering types.

The Switching Programme is a highly challenging piece of work, the successful delivery of which will require strong industry-wide commitment. Moving to reliable and fast switching is likely to require a significant amount of change across a wide range of industry participants. This change will happen in the context of wider initiatives, such as the rollout of smart meters. If not managed effectively, the changes involved could have a negative impact on consumers' experience of switching, as well as related industry processes such as consumer billing. We are addressing these risks by working closely with the industry in designing the new arrangements, and developing a delivery strategy for the changes well ahead of the programme's implementation phase.

This business case represents an important step in the development of the new switching arrangements. Using the government's Five Case Model, we have considered our initial strategic, economic, management, commercial and financial cases for reform. Most importantly, within the economic case we have developed a short-list of reform packages, which will be the focus of our analysis going forward. Each of these cases will expand and evolve as we develop a preferred option and further refine our policy, delivery approach and commercial arrangements.

Background

In February 2015 we issued our decision to lead a programme of work to implement reliable next-day switching by introducing a centralised registration service to be procured, and run by, the Data Communications Company (DCC). At the same time, we published a target operating model to act as a reference and a guide for the design and implementation of the programme. This model was updated in November 2015 to reflect our updated thinking, at which point we launched a significant code review process to make the necessary changes to industry codes. At the same time, we signalled our intention to convene a series of industry working groups to develop the 'blueprint' for the new switching arrangements.

Over the past year, these working groups have considered a wide range of policy, process, delivery, regulatory and commercial issues related to the design and implementation of the new switching arrangements. Where appropriate, a range of options for addressing these issues has been developed. This longlist of options has been subjected to extensive scrutiny and challenge by the industry and consumer groups – through user groups and the External Design Advisory Group – and also by independent experts bringing out-of-industry expertise. The challenge from the industry and others has been central in informing the options we have chosen to rule out at this point, and those we have short-listed for further assessment. We thank all those industry representatives that have contributed their expertise, support and constructive criticism to date. Their time, cooperation and hard work have been invaluable in getting us to this point.

Short-listed options

The short-listed options have been consolidated into three 'reform packages', composed of the following high-level features:

> **Reform Package 1**: the existing industry systems architecture would be retained and gas and electricity processes would not be harmonised. Existing systems and processes would be modified to shorten switching times. Data reliability would be improved by procuring a standard GB address list, against which gas and electricity meter points would be reconciled to ensure they are accurately matched. Electricity suppliers and gas shippers would have a shortened window (one working day) to object to a switch. Arrangements such as those for standstill periods, advance registration and cooling off periods would also be adjusted, and harmonised for gas and electricity where possible. This option would shorten the minimum switching period to between 3 and 7 calendar days, depending on weekends and bank holidays.

Reform Package 2: the switching functionality that currently exists within separate gas and electricity switching services would be replaced by a single central switching service (CSS). This would harmonise the gas and electricity switching processes where appropriate. In gas, suppliers would initiate a switch, rather than shippers as is currently the case. Should a supplier wish to object to a customer loss, they would have to develop an automated mechanism to do so on an instant basis. This option would allow a switch to be completed by the start of the next calendar day where a switch request has been confirmed by the CSS by 5pm.

Reform Package 3: in addition to the changes outlined in Reform Package 2, the currently separate gas and electricity enquiry services would be superseded by, or made accessible through, a single market intelligence service, allowing users to look up information relevant to a particular switch, that would cover both gas and electricity data. As with Reform Package 2, this option would allow a switch to be completed by the start of the next calendar day. We expect that it would bring additional benefits for the reliability of switching as more industry switching data would be accessible via a single source, enabling easier matching and reconciliation.

We are gathering detailed cost and benefit information for each of the three reform packages through the requests for information issued alongside this document. We are also gathering cost information for a 'do nothing' option, which will act as a baseline against which the reform packages can be measured.

For the purposes of the requests, each reform package is broken down into separate components so that we can identify those elements that are the greatest drivers of costs and benefits for consumers and the industry. We are also testing different ways of handling some key processes, such as objections and cooling off, to determine the best way of dealing with these. As such, the composition of the reform packages is not necessarily fixed at this point. Splitting the reform packages into separate component parts will enable us to determine if a combination of different elements of each of the packages would deliver the best value for money for consumers.

In addition to our system and process design and delivery work, we have also considered options for how the new arrangements could be reflected in codes and licences. We have not decided where any new requirements should sit at this point, but have mapped out the benefits and drawbacks associated with several potential candidates, including amending existing codes and creating a new retail code.

We are also further developing the scope of DCC's role in the programme as it goes forward. A consultation on DCC's forecast programme activities was launched in November 2016. This will be baselined in spring and revisited once we select a preferred reform package option to take forward to consultation. We intend to make a decision on DCC margin and incentives in February 2017. Separately, we published the framework for how any new systems introduced as part of the programme should be procured in January 2017.

Next steps

The deadline for responses to the requests for information issued alongside this document is 2 March 2017. These responses will help to inform an impact assessment of the short-listed reforms. We expect to publish this assessment, as part of an updated business case, alongside a consultation on our recommended reforms in August 2017, and plan to issue a decision by the end of the year.

We intend to launch a consultation to update our significant code review approach this spring. This is currently the best tool available to Ofgem (in conjunction with our licence change powers) to successfully manage the changes that will be needed to multiple industry codes and licence conditions. The government has produced draft legislation to give Ofgem enhanced powers to deliver reliable and fast switching. If these powers are provided we would expect to stop the significant code review and use the new powers for the remainder of the process.

In the interim, we intend to commence our detailed level specification work on the basis of Reform Package 2. This does not imply that this is the favoured approach. It is a least-regrets planning approach that will allow us to progress our design work so as to have the least impact on overall programme timescales, while minimising the risk of doing nugatory work. Once we have fully analysed the responses to the request for information we will revisit this assumption and adapt the scope of work accordingly.

We want to deliver the benefits of reliable and fast switching to consumers as quickly as possible. We also want to make sure that the new arrangements are properly tested before going live, so that consumers have a positive experience of the changes from the time they are implemented. We expect detailed design work to be complete by early-2018, and to have started transposing the necessary requirements into industry codes and licence conditions at this point. The length of the build and test phase will depend on our chosen reforms.

We do not propose definitive delivery dates for programme changes at this point. We intend to propose delivery dates as part of our consultation planned for August 2017. We will continue to challenge the programme timelines on an ongoing basis to ensure we deliver change as soon as possible. We will also assess whether some of the reforms could be introduced early to deliver some benefits to consumers ahead of full delivery.

1. Introduction

Introducing our business case

1.1 We are taking forward the Switching Programme to improve consumers' experiences and perceptions of changing supplier, so that they engage more in the retail energy market. We will achieve this by designing and implementing new switching arrangements that are reliable, fast and cost-effective. This will build consumer confidence and facilitate competition, delivering better outcomes for consumers. We will be developing and maintaining a business case throughout the life of the programme that will not only aid the decision-making process, but will also be a tool for communicating with stakeholders and managing the successful procurement and delivery arrangements for the reforms. In line with HM Treasury's Green Book guidance,[1] our business case will be presented in five main sections. These are:

- The **strategic case:** the strategic context for the programme and our case for change. This will include the rationale for why we are proposing to intervene, and an explanation of the outcomes we are seeking to achieve.
- The **economic case:** how we have narrowed the long list of potential options down to a shortlist, and ultimately how we select a preferred option.
- The **commercial case:** the intended approach to the procurement of any new systems and infrastructure required by our chosen reforms.
- The **financial case:** how this procurement activity and the wider programme delivery and operating resources will be funded.
- The **management case:** the actions that will be required, and by whom, to ensure successful delivery of the reforms.

1.2 We will build up the information and detail in these sections iteratively, constructing the business case in three stages: the strategic outline case (SOC), the outline business case (OBC), and the full business case (FBC).

1.3 This document is the first iteration of our business case (the 'SOC'), in which we have focused primarily on developing the strategic and economic cases. We have set out in detail how the programme fits within the context of Ofgem's strategic objectives and wider market reforms, and explained our rationale for seeking to develop reliable and fast switching arrangements. Through our programme

[1] HM Treasury, Green Book supplementary guidance on delivering public value from spending proposals.

objectives we set out the outcomes we aim to achieve. In the first part of our economic case, we have summarised the many policy issues we have considered to date, and explained why particular options have been carried forward to our shortlist of three reform packages. In the second part of our economic case we then describe the key features of the reform packages that we are now testing through a request for information. At this stage we have outlined our commercial, financial and management cases at a much higher level, with further detail to be added in the next iteration of the business case once we have identified a preferred package of reforms.

1.4 Following each of the five sections highlighted above, this document then outlines our next steps for developing our business case. At the end of the document there are a series of appendices covering more detailed and technical information on the reform packages and how they would work in practice. In support of the information provided in the economic case, these appendices constitute our Design Baseline 1. This information should inform industry stakeholders' responses to the request for information we are issuing concurrently to publication of this document.

2. Strategic case

Chapter summary

The strategic case sets out the case for change and the context within which changes will be made. It outlines the scope of the programme, its intended benefits, and the risks, constraints and dependencies.

2.1. Currently, switching energy suppliers can take a long time – on average around three weeks but in some instances much longer. The switching arrangements are inefficient and can result in consumers being let down by delayed, unsuccessful or unwanted switches. Consumers generally perceive switching suppliers as a hassle and the fear of something going wrong during a switch can discourage some from engaging with the market.

2.2. Our Switching Programme aims to improve consumers' experience of switching by implementing a new switching process that is fast, reliable and cost-effective. The changes we propose to make to simplify and harmonise the switching arrangements should ensure that consumers are confident that they can switch supplier easily and quickly. In the following sections we set out:

- our case for change
- the objectives and scope of the programme
- a summary of the market and strategic context within which the programme changes will be made
- the main programme benefits, risks, constraints and dependencies.

The case for change

2.3. The switching process underpins an effective energy market where competition benefits consumers. It should support consumer engagement so that they are confident that they can change their energy supplier easily, reliably and quickly.

2.4. The current switching arrangements are slow and can have unreliable outcomes for consumers. They are not as streamlined or efficient as they could be, particularly in light of several important changes currently underway that could reshape the retail energy industry. In this section, we describe the problems we have identified with the current switching arrangements and why they ought to be changed to benefit consumers.

Unreliable consumer outcomes

2.5. The current switching arrangements can result in unreliable outcomes for consumers. Problems with the quality of industry data and inconsistent 'workaround' processes can cause delays, switching failures or unwanted switches, and require

manual intervention by suppliers and other parties. Gas and electricity data is currently held in different places, meaning it can be difficult to cross-validate switching information. This can mean that switches go through at different times, or that one fuel can be switched but the other can't.

2.6. The number of erroneous transfers for the six largest domestic suppliers in March 2016 was approximately 0.5% of the total number of switches for these suppliers.[2] When taking all suppliers across both the domestic and non-domestic segments of the market into account, the true proportion of erroneous transfers is likely to be slightly higher.

2.7. While small in percentage terms, erroneous transfers can have a seriously negative effect on consumers when they do occur. They can take a significant amount of time to identify and, once they are identified, suppliers have 20 days to contact the consumer to confirm to the consumer that they will be returned to their original supplier. The switch reversal is processed in the same way as a 'normal' switch. This means a lot of time can elapse from when an erroneous transfer happens to when it is corrected, and they can require suppliers to manually intervene to resolve them, which has an impact on costs.

2.8. One of the main causes of switching errors is inaccurate matching of meter point and address data. Analysis from stakeholder engagement as part of our Delivery Strategy work shows that approximately 80% of cross-fuel switching failures, delays and erroneous transfers are related to poor data quality. Of these, around four fifths relate to the quality of address data and misalignment between addresses and meter points. Extrapolating these statistics using our analysis of monthly switching data provided to us by the six largest domestic energy suppliers would suggest that approximately 144,000 switches a year fail, are delayed, or lead to erroneous transfers due to poor quality address data.[3]

2.9. Poor quality meter technical information can also lead to switching problems. If data items such as meter type and meter time-switch code are incorrect the consumer's meter may not be able to support the tariff they are attempting to switch to, and the switch may fail or the consumer may have to switch back, agree a new contract, or have a new meter fitted. Our analysis shows that approximately 14% of failed or delayed switches are caused by poor meter technical information. Based on the number of monthly switches, this would suggest that approximately 25,000 switches a year fail, are delayed or lead to erroneous transfers due to poor quality meter technical information.

2.10. The unreliability of the switching process can deter some consumers from engaging and switching. The proportion of all domestic consumers (ie including those

[2] Ofgem, Retail Energy Markets in 2016, Aug 2016.
[3] We asked the six largest suppliers to provide us with a sample of switching data as part of our stakeholder engagement programme. These figures are derived from that limited sample and so are only rough estimates. Further analysis is in our data improvement strategy paper, a link to which can be found in appendix 5.

who have and have not switched) who agreed that switching is a hassle was 46% in 2016, while 36% of consumers worry that if they switch something will go wrong.[4] Previous research by Consumer Futures suggested that approximately 13% of consumers who switched or tried to switch experienced a problem during the process.[5]

2.11. Our qualitative research shows that consumers perceive that difficulties will arise in closing down their account with their old supplier. They are particularly concerned about being billed incorrectly, or by more than one supplier at the same time, among other issues. Consumers told us that they would value a simple switching process that requires as little contact with the old supplier as possible. Respondents did not want to chase the old supplier to close the account, particularly if this meant long phone calls and excessive effort on their part. Some that pay by direct debit were anxious about not being able to reclaim credit or that doing so would take a long time. Some had experienced these problems in the past, whereas others had a general perception that these barriers would exist.[6]

2.12. Consumers suggested that knowing a switch would be problem-free would encourage them to consider switching. Respondents referred to specific reassurances they would like to receive that perceived problems such as double billing, problems filling in lengthy forms, and concerns that their supply might stop during a switch would be avoided.[7]

2.13. We want to address these issues by improving the quality of industry data, and by simplifying and harmonising the gas and electricity processes where possible. This should lead to better and more consistent outcomes for consumers when they choose to switch, making them more confident that the switching arrangements are reliable.

Slow speed of switching

2.14. Currently, switching energy suppliers can take a significant amount of time – on average around three weeks but in some instances much longer. Even when the process works well, it is slow compared to other sectors such as mobile telephony, where switching takes one or two days, and banking, where switching is possible in seven days. It is also slow compared to some international markets such as France, where switching is possible in one day for electricity and four days for gas, or Australia, where changes are being made to enable switches for electricity to be made at the end of the following day.

2.15. Some suppliers have signed up to the voluntary Energy Switch Guarantee. The guarantee is a commitment by participating suppliers to ensure a speedy and

[4] Ibid.
[5] Consumer Futures, Switched on: consumer experiences of energy switching, January 2013.
[6] TNS BMRB/Ofgem, Domestic consumer expectations and preferences for switching energy supplier and the cooling off period, December 2016.
[7] Ibid.

safe switch from one energy provider to another within three weeks.[8] However, not all suppliers have signed up to this guarantee so many consumers may not receive the protections that it provides. Our supply licence conditions also require that suppliers take all reasonable steps to ensure switches are completed within three weeks, subject to certain exceptions.

2.16. The currently long switching times are, in part, due to the current arrangements for dealing with the statutory 14-day cooling off period and the relatively long window within which a losing supplier can object to a switch. Suppliers tend not to complete a switch until the cooling off period has elapsed, and the objections window is currently five days for electricity and between two and seven days for gas.

2.17. A long switching process could reinforce consumer perceptions that switching is complicated and not worth the hassle. There is empirical evidence that suggests a correlation between levels of switching and switching time. A study of eight markets showed that the expected switching time has a statistically significant and negative effect on the probability of switching – longer expected times to switch discourages both searching around for other deals and switching.[9] The probability that consumers would search and switch is at its highest point when it takes no time to switch, and falls as expected switching time increases. An earlier study also found that anticipated length of switching time has a negative, significant estimated effect on probability to search, switch, and search and switch.[10] Past research by Consumer Futures suggested that approximately 7% of consumers cancelled switches part of the way through the process, with a small number citing delays in the process as their reason for doing so.[11]

2.18. By redesigning the switching arrangements to enable switches to proceed quickly, we aim to improve consumers' perceptions and experience of the ease of switching. Faster switching times will also enable consumers to benefit more quickly from cheaper prices, better service and new and innovative products if they choose to switch.

Inefficient switching processes

2.19. The existing switching arrangements are based on processes that operate differently for the gas and electricity markets and have remained largely the same since the late 1990s. Adjustments to the arrangements have tended to be made in a piecemeal manner, meaning they are not as efficient as they could be. The switching arrangements are complex, which could potentially be a barrier to entry for new suppliers. They can also often require manual intervention to ensure a switch is

[8] Information on the Energy Switch Guarantee
[9] Waddams Price and Zhu, Empirical evidence of consumer response in regulated markets, 2016
[10] Waddams Price, Webster and Zhu, Searching and switching: Empirical estimates of consumer behaviour in regulated markets, December 2013
[11] Consumer Futures, Switched on: consumer experiences of energy switching, January 2013

completed as intended, which can add costs that will ultimately be borne by consumers.

2.20. The Switching Programme is opportunity to conduct a holistic review of the switching arrangements to make sure that they are as simple, streamlined and efficient as possible. We aim to harmonise switching arrangements for gas and electricity and design a set of clear, unambiguous processes that, wherever possible, work for both the gas and electricity markets. They should be easier for all relevant parties to operate, containing all necessary functionality to support reliable and fast switching for consumers, but also effectively support related industry processes such as customer billing and settlement.

2.21. There are a number of changes either ongoing or on the horizon that could reshape the energy industry. The rollout of smart meters, the increasingly important role of third-party intermediaries, the move to half-hourly settlement and the potential need for greater demand-side flexibility are just some of the important developments that may change the way consumers engage with their energy supply.

2.22. Through the Switching Programme we want to make sure that the switching arrangements keep in step with this dynamic energy market landscape and rapid technological change. Our new switching systems and processes should be designed to support these and other programmes of work, and also leverage the benefits of other changes where possible. In doing so we aim to create an efficient and effective set of switching arrangements that are flexible enough to support both current and future market requirements.

Programme objectives and scope

2.23. Our overarching programme objective is to improve consumers' experience of switching, leading to greater engagement in the retail energy market, by designing and implementing a new switching process that is reliable, fast and cost-effective. In turn this will build consumer confidence and facilitate competition, delivering better outcomes for consumers.

2.24. During the Blueprint phase of the programme, we have developed a set of subsidiary objectives summarising what we aim to achieve through the Switching Programme. These are used both to communicate our aims to stakeholders and as a means of assessing the relative strength of different reforms we have considered during our Blueprint phase work. The subsidiary objectives are:

1. To improve consumer experiences and perceptions of changing supplier, leading to increased engagement in the market, by delivering a switching service that:

    a. Is more reliable, thereby reducing the instances of consumers being let down by delayed, unsuccessful or unwanted switches.

b. Offers consumers control over when they switch, including providing the capability of doing so as fast as possible, and by no later than the end of the following day after a consumer has entered into a contract.

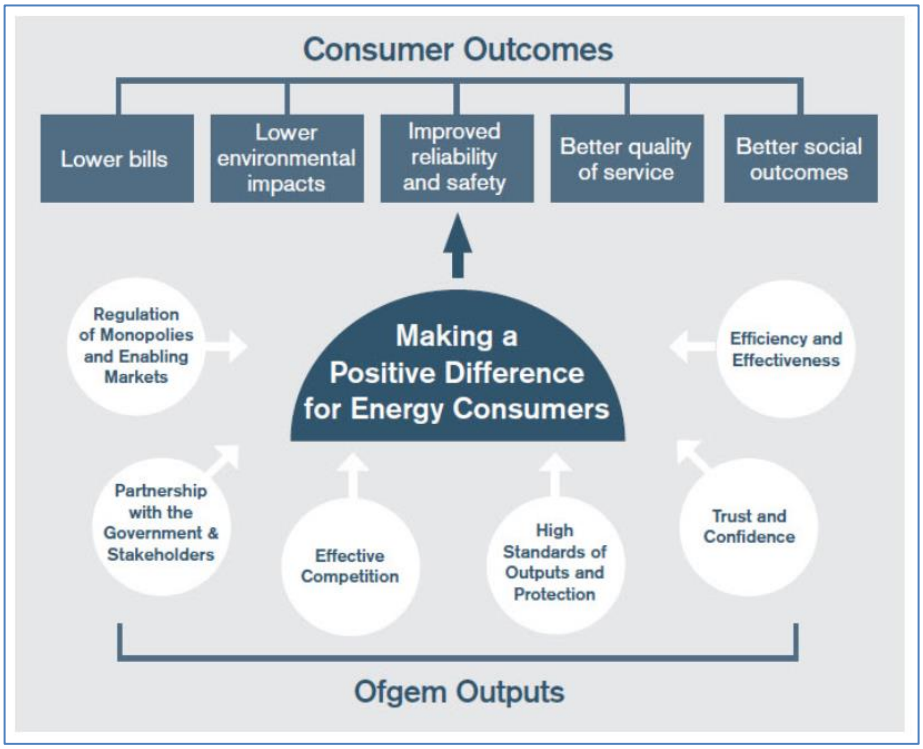
c. Minimises any differences in consumer experiences of the switching process, to the extent that is possible, taking into account any physical constraints imposed by metering and issues relating to consumers indebtedness.

2. To deliver a simple and robust system architecture design that harmonises business processes across the gas and electricity markets where possible, and is capable of efficiently adapting to future requirements.

3. To encourage more effective competition by minimising barriers to entry for new entrants to the market, including the extent to which a successful switch may rely on the actions of an incumbent, and by having appropriate safeguards in place where this is not possible.

2.25. These objectives link directly to our organisational strategic objectives and the outcomes we aim to deliver for consumers, in particular to deliver lower bills than would otherwise have been the case and a better quality of service that is appropriate for an essential service. These are summarised in figure 1 below.

Figure 1: Ofgem's strategy for consumers



2.26. The programme objectives are also reflected within the design principles we have developed, in conjunction with stakeholders, to guide programme decision-

making and ensure the new switching arrangements deliver the best outcome for consumers.[12]

2.27. The programme's scope covers all activities from the point at which a consumer confirms they wish to switch to the point they get an accurate closing bill from their previous supplier and an opening bill from their new supplier, or choose to exercise their right to cool off, cancel their contract, and agree another contract with a supplier. The scope also includes any look-up of consumer information required to process a switch, such as address and meter information. Our review of the switching arrangements includes both the domestic and non-domestic segments of the retail energy market, and all metering types.

2.28. The scope of the potential reforms includes changes to the regulatory framework, reviewing existing network licence obligations linked to the registration of switches, and developing the requirements for new centralised systems used by the industry to process consumer switches in the gas and electricity markets. This includes reforms to the existing switching processes to harmonise gas and electricity switching arrangements.

2.29. There are other activities and issues that are out of scope of the programme. These include consumer acquisition activities by suppliers and their representatives, the switching arrangements for consumers that are directly connected to the national electricity and gas transmission networks, and consolidation of industry codes.[13]

Strategic context

2.30. For competition to function effectively in the retail energy market, consumers must be confident that they can engage and switch suppliers in such a way that the financial rewards of doing so will be worth the time and effort. A fast, reliable switching process can reduce real or perceived switching costs and increase consumer engagement. This can provide benefits to consumers who become active in the market, and further improve outcomes for those who are already 'energy shoppers'.

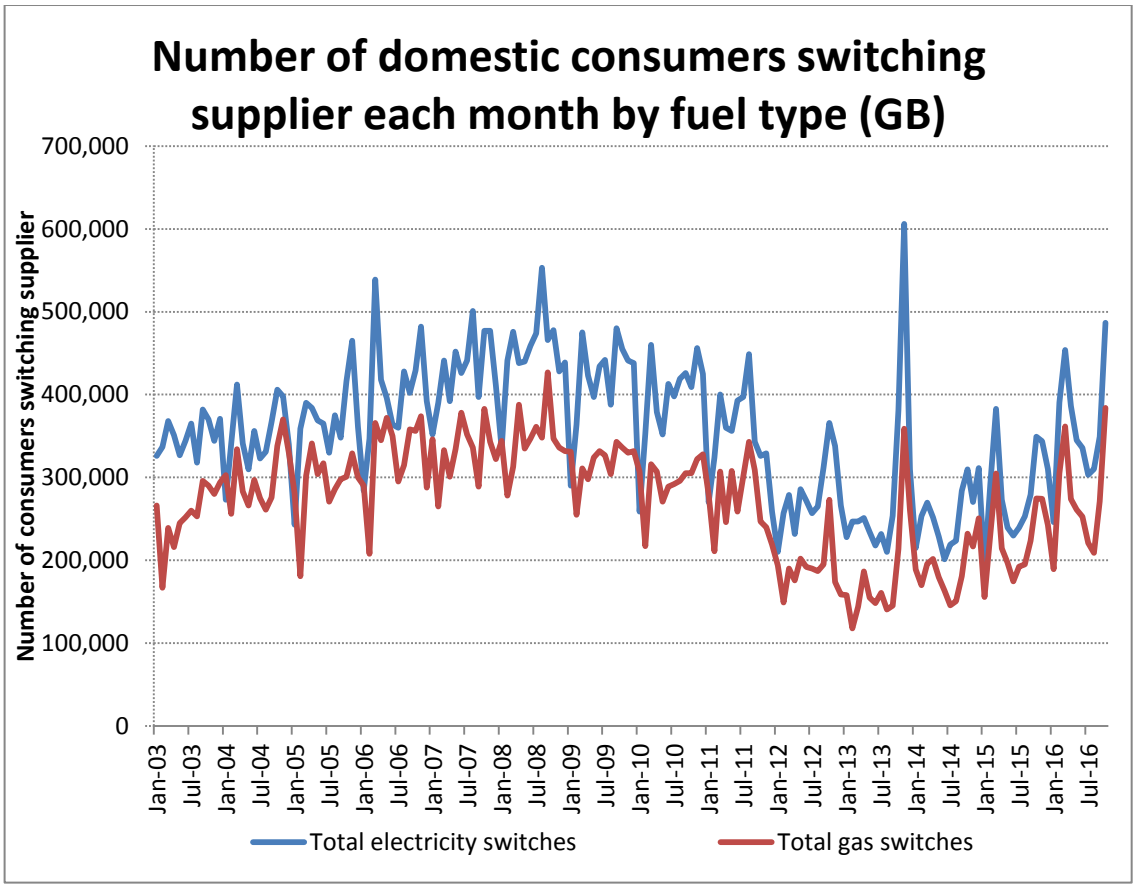
2.31. In this section we set out the current levels of switching and engagement among consumers and provide further context on the market environment within which the Switching Programme changes will be made.

[12] Ofgem, Switching Programme Design Principles, June 2016.
[13] The full details of the scope of the programme, including complete information of what is included and excluded, were set out in version 2 of our Target Operating Model for reliable and fast switching: Ofgem, Moving to reliable and fast switching: Target operating model and delivery approach v2, November 2015. An update of this scope will be published when we make our decision on the reform options to take forward, at the end of this year.

Consumer switching and engagement

2.32. The Competition and Markets Authority's (CMA) energy market investigation, which concluded in 2016, revealed that two thirds of households are disengaged and paying much more for their energy compared to those who have switched tariff. The number of gas and electricity consumers switching supplier declined between 2008 and 2012, then levelled out and started rising again from 2015. The increase has picked up since the start of 2016, with the total number of switches in 2016 up to the end of October being 30% higher compared with the same period in 2015. The switching rates in 2015 were 12% for electricity and 13% for gas. A survey commissioned by CMA as part of its investigation found that 56% of domestic consumer respondents said they had never switched supplier, and 34% had never considered it.[14]

Figure 2: Switching trends between 2003 and 2016



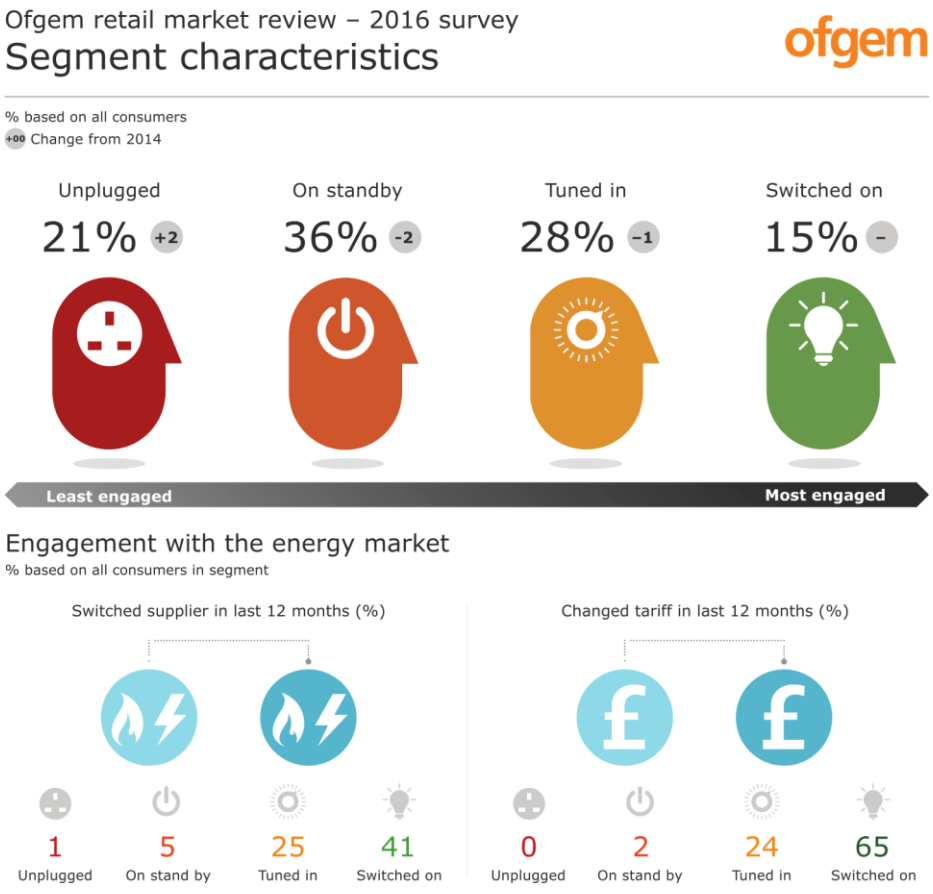
Source: Ofgem analysis of data from electricity distribution network operators, Xoserve and the six largest suppliers before 2014. Information correct as of October 2016.

[14] CMA, Energy market Investigation: summary of final report, June 2016.

2.33. In addition to those that have switched supplier, a minority of consumers have changed tariff with their existing supplier in the last 12 months. 17% of consumers had changed tariff with their existing supplier in the last year, a similar proportion to that of 2014.[15]

2.34. The overall pattern of domestic consumer engagement in 2016 is largely unchanged relative to 2015 and 2014 as shown in figure 3 below. More than one in five consumers is very disengaged. They are mostly on expensive standard variable tariffs, less likely to engage with information and more likely to be in vulnerable situations.[16]

Figure 3: Consumer engagement in the energy market



Source: TNS BMRB/Ofgem, Consumer engagement in the energy market since the Retail Market Review: 2016 survey findings, August 2016

[15] TNS BMRB/Ofgem, Consumer engagement in the energy market since the Retail Market Review: 2016 Survey findings, August 2016.
[16] Ofgem, Retail Energy Market report, 2016.

2.35. Ofgem's 2016 report on micro and small business engagement in the energy market indicated that 33% of the small business consumers have not switched in the last five years (down from 36% in 2014) and nearly half of these businesses (44%, representing 16% of all micro and small businesses) have never considered switching.[17,18]

2.36. Although the switching rates have remained low, there are savings available to those who want to switch. A typical consumer on a dual fuel standard variable tariff, paying by direct debit, could save approximately £200 by moving to one of the cheapest tariffs in the market.[19] Previous analysis by the CMA showed that the annual potential savings from switching available to dual fuel standard variable tariff customers (excluding those on prepayment meters) of each of the six largest energy suppliers have risen over the last two years, and reached their highest level in Q2 2015, at around £330.[20]

Other market context

Market shares

2.37. In March 2016, there were approximately 28 million domestic electricity and 21 million domestic gas consumers in GB. Of these, there were approximately 20 million dual fuel consumers, who get both electricity and gas from the same supplier.[21] At the same point, there were 43 active licenced suppliers, and eight 'white label' suppliers,[22] in the domestic retail markets, in most cases offering both electricity and gas.[23] There is a relatively high level of market concentration, with over 85% of the domestic sector for both gas and electricity served by the six largest suppliers.[24,25] This has fallen in recent years, from 99% market share in 2011.[26]

2.38. As of March 2016, there were 65 active suppliers in the non-domestic market (some of which also supplied domestic consumers). The smallest non-domestic consumers are typically served by one of the six large energy suppliers. In contrast, the majority of gas, and a large proportion of the electricity, sold to larger non-domestic consumers is supplied by firms other than these suppliers.[27]

[17] Ofgem, Micro and small business engagement in the energy market 2016 - quantitative research report, May 2016.
[18] Ofgem, Retail Energy Markets in 2016, Aug 2016.
[19] Ofgem, Energy plans: What is a 'standard variable' rate tariff and how does it compare, November 2016.
[20] CMA, Energy market Investigation: summary of final report, June 2016.
[21] Ofgem, Retail Energy Markets in 2016, August 2016.
[22] White label suppliers are organisations without supply licences that partner with an active licensed supplier to offer electricity and gas using their own brand.
[23] Ofgem, Retail Energy Markets in 2016, August 2016.
[24] The largest six suppliers in GB are British Gas, EDF Energy, E.ON UK, Npower, Scottish Power and SSE.
[25] Ofgem, Retail Energy Markets in 2016, August 2016.
[26] Ofgem, The Retail Market Review: findings and initial proposals, March 2011.
[27] Ofgem, Retail Energy Markets in 2016, August 2016.

Third-party intermediaries

2.39. Third-party intermediaries (TPIs) have had an increasingly important role in facilitating consumer switching and engagement. Our 2016 domestic consumer survey shows that 51% of those that had switched supplier, changed tariff, or compared tariffs in the previous 12 months used an online price comparison website to find out about the deals offered (an increase from 40% in 2014). Just under half (47%) of those who had switched in the last 12 months used an online price comparison service to do so (an increase from 44% in 2014).[28]

2.40. More than four fifths of large non-domestic customers used a broker to source their electricity in 2014, up from three quarters in 2013, and around two thirds of large businesses used a broker for gas, similar to 2013.[29] In 2015, 64% of micro and small businesses cited brokers as a source of information when choosing their energy contracts, while 28% mentioned brokers as a main source of information.[30]

Related developments in the energy market

2.41. The Switching Programme is one initiative within a broader set of reforms that aim to encourage consumer engagement and give consumers a better experience of the energy market when they do engage. We summarise some of these related initiatives below.

2.42. This programme is being developed against the backdrop of heightened focus among policy-makers on switching processes in a range of sectors and jurisdictions. As part of the 'Bridge to 2025' proposals the Council of European Energy regulators will produce a roadmap to secure, reliable, 24-hour switching between energy suppliers.[31] And in May 2016, what was then the Department for Business, Innovation and Skills[32] issued a call for evidence on the ease and length of switching across different sectors alongside a switching action plan, reinforcing the government's ambition to reduce switching times across all sectors. [33,34]

Smart meters

2.43. By the end of the decade, government aims for all consumers to have smart meters installed. To ensure all reasonable steps are taken to meet this objective, larger suppliers are required to prepare and submit to us smart meter rollout plans

[28] TNS BMRB/Ofgem, Consumer engagement in the energy market since the Retail Market Review: 2016 Survey findings, August 2016.
[29] Cornwall Energy, Third party intermediaries in the business and industrial energy supply markets, July 2014.
[30] Ofgem, Retail Energy Markets in 2016, Aug 2016.
[31] ACER, Energy Regulation: A bridge to 2025 conclusions paper, September 2014.
[32] The Department of Business, Innovation and Skills is now part of Department for Business, Energy and Industrial Strategy created through a merger with Department of Energy and Climate Change.
[33] Department for Business Innovation & Skills, Call for Evidence on Improving the Consumer Landscape and Quicker Switching, May 2016.
[34] Department for Business Innovation & Skills, Switching Principles: Next steps – action plan, May 2016.

with binding annual milestones. This means that many consumers will already have smart meters installed when the Switching Programme changes would come into effect. Smart metering presents an opportunity to make retail energy markets work better for consumers. It will remove the need for estimated bills by recording the exact usage and sending it directly to the supplier. This means consumers can better understand and manage their energy use, and ensure they get value for money.

2.44. Smart metering can help to make the switching process faster and more reliable for consumers by enabling parties to remotely access accurate and up-to-date information such as consumption and technical data. As part of the Switching Programme, we want to leverage these potential benefits, and also ensure that future switching systems and processes align with an energy system in which smart meters have been rolled out.

Project Nexus

2.45. The UKLink system, operated by Xoserve for energy settlements, supply point administration and other functions for the GB gas market, is scheduled to be replaced. Project Nexus aims to ensure that the replacement systems meet current and future requirements of market participants. It aims to reform gas settlement arrangements and provide a common switching process incorporating both gas transporters and independent gas transporters.[35] We are currently overseeing the governance and assurance arrangements for Project Nexus, which is due for implementation on 1 June 2017.

Future retail regulation

2.46. The retail energy market is undergoing far-reaching changes. Our regulation needs to stay ahead of market developments, enable innovation and support new market entrants, while at the same time providing robust protection for consumers. To this end, we are committed to making greater use of principles rather than detailed prescriptive rules in how we regulate.

2.47. The focus of our work in the near term is on domestic gas and electricity supply. We have already consulted on some changes to our licences to remove elements of prescription, for which we will shortly issue a follow-up statutory consultation.[36] More broadly, we are working closely with stakeholders as we establish our medium to long term move towards greater use of principles. The Switching Programme, and in particular our regulatory design workstream, is working closely with our future retail regulation project team to ensure any licence changes we make as part of our programme are aligned with our broader organisational direction of travel.

[35] As part of Project Nexus we will also be bringing switching timescales for independent gas transporter-connected supply points into line with those of other supply points.
[36] Ofgem, The future of retail market regulation – update on our way forward, June 2016.

Half-hourly settlement

2.48. We are leading work to reform the electricity settlement arrangements to enable suppliers to use actual half-hourly data from domestic and smaller non-domestic consumers to reconcile supply purchases and actual demand. This is part of broader collaborative work with the Department for Business, Energy and Industrial Strategy (BEIS) to move towards a smarter, more flexible energy system that delivers lower bills, lower carbon emissions, enhanced security of supply and a better quality of service. Half-hourly settlement can help to deliver this by putting incentives on suppliers to help consumers move their consumption to periods when electricity is cheaper (or to export electricity in periods when it is beneficial to the system). Our work is proceeding in two parts. The first is removing barriers to elective half-hourly settlement by early this year. The second is considering the approach for moving to mandatory half-hourly settlement in the longer term. The Switching Programme is working closely with the half-hourly settlement project team to identify and address links and dependencies between the two pieces of work, and to ensure that any changes we make to the switching arrangements support any changes to electricity settlement arrangements.

CMA remedies

2.49. The CMA produced the final remedies resulting from its energy market investigation in June 2016. Its remedies are broad-ranging, and include the creation of a disengaged consumer database run by Ofgem so that rival suppliers can offer consumers who have been on a standard variable tariff for three years or more personalised information about better deals. They also include the introduction of new and improved prompts for consumers to engage, and the implementation of a temporary protective price cap for those on prepayment meters.

2.50. Of direct relevance to the Switching Programme, it recommended that domestic price comparison websites should have access to data from the Electricity Central Online Enquiry Service (ECOES) and the Data Enquiry Service (DES).[37] This work is well under way, and aims to facilitate price comparison website access to some of the information held in central industry databases in the spring.[38] We have worked closely with the industry group that has led on these changes to inform our design of, and access rights to, any new central systems we introduce.

2.51. The CMA also recommended that Ofgem be given greater powers to influence the process for amending industry codes. In November 2016, we launched an initial consultation on the implementation of their recommendations.[39] The full package of

[37] ECOES assists suppliers in the consumer transfer process by allowing the triangulation of data. It is also used to provide benefit to other authorised users in other key areas. DES is a web-based tool designed to be used by authorised users to interrogate certain data relating to supply meter points.
[38] Alongside the Switching Programme, BEIS is progressing work on its midata project. This would also provide TPIs with access to some consumer data that could be useful as part of the switching process. BEIS issued a call for evidence on its proposals in December 2016, with a view to making a decision on the way forward later this year.
[39] Ofgem, Industry Code Governance: Initial consultation on implementing the Competition and Market

reforms is not expected to be implemented until 2019, and so is unlikely to affect our Switching Programme work directly. We are, therefore, continuing to plan on the basis that we will use our existing significant code review and licence modification powers to deliver changes to the switching arrangements.[40] However, some of the proposed reforms, notably the creation of a strategic direction and a cross-code consultative board, are expected to be introduced later this year and could help to support the Switching Programme once in place.

2.52. Separately, the CMA has opened a market study on the role of digital comparison tools such as price comparison websites across multiple sectors.[41] This work is at an early stage, but may have implications for the Switching Programme. We will monitor the outputs of its work.

Consumer vulnerability strategy

2.53. We are working to ensure that all consumers, including those in vulnerable situations, are fully protected in a smarter market. In October 2016 we issued our decision to make changes to Priority Services Register arrangements to ensure that they remain fit for purpose and fully meet the needs of consumers in vulnerable situations.[42] These changes took effect from 01 January 2017.

2.54. Separately, the process for handling the transfer of consumer debt where a prepayment consumer switches (the Debt Assignment Protocol), is being improved. These changes are designed to ensure that more attempted switches are completed.

2.55. As part of the Switching Programme we are considering whether, and how, our design of the switching arrangements should complement these important protections for consumers in vulnerable situations.

Flexibility

2.56. In September 2015, we published a position paper on making the electricity system more flexible.[43] This set out our view of the critical issues in this area, and launched a joint project with government to facilitate the transition to a more flexible

Authority's recommendations, November 2016.

[40] The government has separately produced draft legislation to give Ofgem enhanced powers to deliver the Switching Programme changes. If these powers are provided we would expect to stop the significant code review and use the new powers for the remainder of the process. The programme governance arrangements are covered in greater detail in the management case in chapter 7.

[41] CMA, Digital comparison tools market study, September 2016.

[42] Ofgem, Decision to modify gas and electricity supply, electricity distribution and gas transporter licences for PSR arrangements, October 2016. Suppliers and network companies are required to provide free additional support services like doorstep password schemes to consumers in vulnerable circumstances under their Priority Services Register obligations.

[43] Ofgem, Position paper: Making the electricity system more flexible and delivering the benefits for consumers, September 2015.

energy system – to help ensure GB has a secure, affordable and clean energy system now and in future.[44] This work is broad-ranging, encompassing issues such as energy storage, demand-side response and the role of aggregators in the energy market. It also looks at broader questions such as how roles and responsibilities may need to evolve. In conjunction with the government we intend to issue our forward plans for our work on flexibility in the spring. As part of the Switching Programme we will engage with this work on an ongoing basis to ensure that the switching arrangements we design are in line with our broader objective to move to a smarter, more flexible energy system.

Xoserve's funding, governance and ownership (FGO) reform

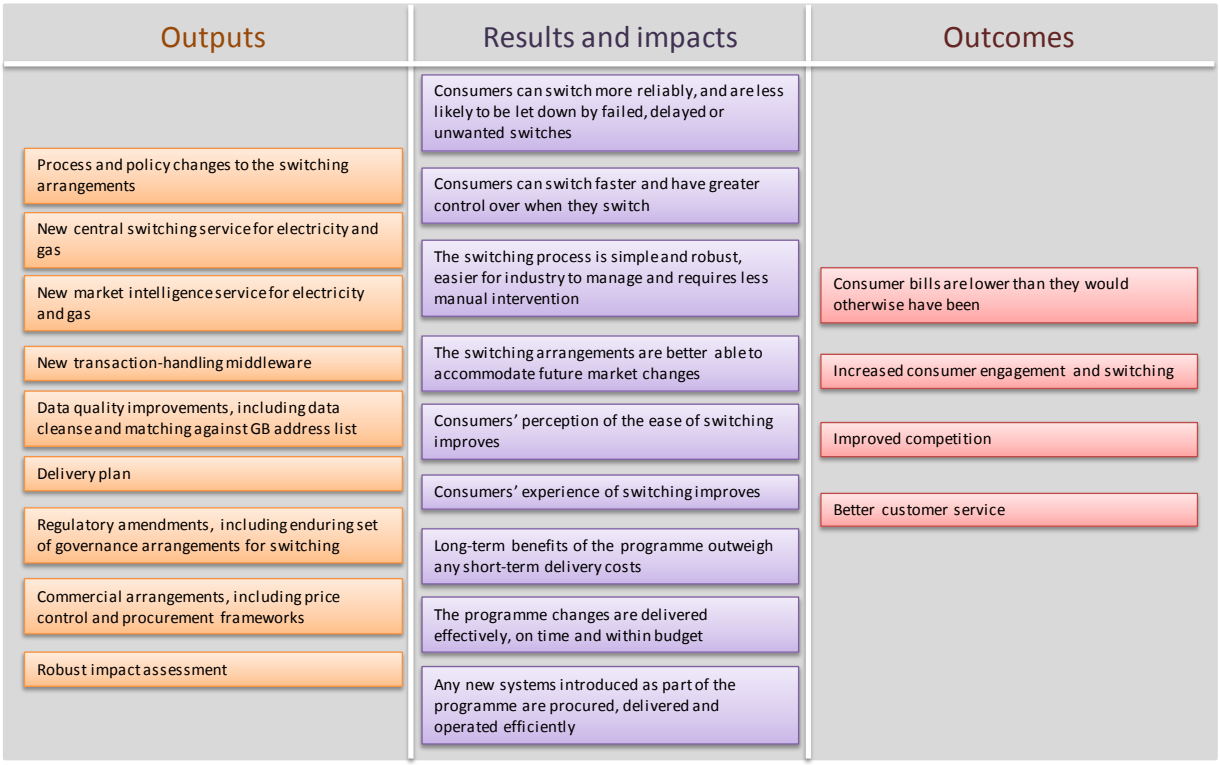
2.57. Xoserve's FGO programme was established to define and deliver a blueprint for the future funding and governance of their central data services. This will require gas transporters and shippers to jointly participate in Xoserve's governance and fund its activities.[45] The programme is now in the development and delivery phase, with a target implementation date of April 2017.

Benefits, risks, constraints and dependencies

2.58. Figure 4 below summarises the outcomes we expect to deliver through our changes to the switching arrangements, and how these are intended to benefit consumers and industry participants. This benefits map is at an early stage of development. We will expand and refine how we identify and capture potential programme benefits during the next phase of the programme, as we develop the programme impact assessment. It will also be an important part of any future evaluation of the success of the programme we conduct in future.

[44] Ofgem, A call for evidence: A smart, flexible energy system, Nov 2016.
[45] Ofgem, Xoserve – decision on the legal and regulatory framework relating to the gas central data service provider, April 2016.

Figure 4: Programme benefits map



2.59. Through the request for information issued alongside this document we intend to quantify, where possible, the impacts of our reform proposals for the industry, including benefits. We will analyse the responses, and conduct further analysis of the likely benefits to consumers, to determine which reform packages and options represent the best value for money for consumers. We are also considering whether further consumer research would be beneficial to help inform our impact assessment.

2.60. The main risks to the successful delivery of the programme changes are:

- Not being able to maintain stakeholder support throughout the programme, or to engage effectively with all relevant stakeholders, such that affected parties do not understand in sufficient detail what changes are expected of them and the implications for their organisation, or reject our proposals
- complex design or delivery issues arise at a late stage in the programme, which are costly and time-consuming to rectify
- the design of the new switching arrangements does not deliver reliability for consumers
- we receive poor quality, or incomplete, data to support our assessment of reform options, meaning we cannot make robust decisions on the way forward

- the costs of reforming the switching arrangements outweigh the benefits to consumers

- there is insufficient expertise and resource, within Ofgem, the Data Communications Company (DCC) or other industry parties, to effectively deliver a large-scale programme of this nature throughout its different phases.

2.61. We are mitigating these and other risks with a robust governance and decision-making framework, extensive stakeholder engagement, and strong assurance and change control arrangements. Further information on these is our management case in chapter 7.

2.62. Although the Switching Programme is broad, there are a number of external constraints and dependencies that will determine how far we can go with our reforms. These include:

- **Harmonisation of gas and electricity**: it will not be possible, or sensible, to completely harmonise the gas and electricity switching processes. Differing features, for example settlement gate closure times, will mean that some inconsistencies will remain.

- **Streamlining the switching arrangements**: one of our programme aims is to simplify the switching arrangements and make them as streamlined as possible. There are limits to how much complexity we should seek to remove from the switching processes, however, as the systems, processes and data items involved are in some cases integral to other industry functions such as balancing and settlement.

- **Smart meter switching**: security keys are designed and built into smart meters as part of the smart metering installation and rollout. Transitional arrangements, which rely on the DCC, exist to support changing the keys to the new supplier during the main installation stage. An enduring change of supplier process is being considered by the Smart Metering Implementation Programme led by BEIS. The new switching processes will support the transitional arrangements, and the new enduring arrangements when they are implemented.

- **Data privacy**: many different data items used as part of the switching process are held within industry systems, both centrally and by suppliers for example. Some of these pieces of information may be personal consumer data. These data items will need to be treated carefully and assigned appropriate security controls and access rights. In some cases it may not be sensible to migrate them out of the systems they are currently held in.

- **Industry capacity to deliver change**: as highlighted above, there are a number of reforms other than the Switching Programme that are currently underway within the energy market, and suppliers and others may want to make changes to their own internal systems. We will take into account, as appropriate, the availability or otherwise of industry resource in developing our delivery strategy for the programme.

- **Third-party intermediaries**: we don't directly regulate TPIs such as price comparison websites. We will only have limited control over how some of the measures we introduce are presented to consumers by TPIs – for example we will be able to ensure that consumers can choose their switch date, but we will only have limited control over how this is presented to consumers.

3. Initial economic case: options analysis

Chapter summary

This chapter summarises the key solution architecture, business process, policy and implementation issues that we have considered. For each issue presented in this chapter, we summarise the options we have considered, and the conclusions we have reached.

Assessing reform options (the longlist)

3.1 In November 2015 we set out a high level target operating model[46] for new harmonised switching arrangements that would deliver reliable and fast switching. Since then we have worked extensively with the industry to identify all the essential elements of new switching arrangements and other elements that would facilitate reliable and fast switching.

3.2 The elements we have looked at fall into three categories. First, we looked at the information flows that occur to deliver switches, and the underlying data that supports them. Our proposals on these issues are in appendix 3, and supplementary appendices 4.b and 4.c. Second, we looked at the overarching architectural options for new switching arrangements. Third, we looked at business process and policy issues that dictate, or are dictated by, the current switching arrangements and timescales and made proposals that would facilitate reliable and fast switching. All of the issues summarised within this section have been developed with Ofgem-led design teams and user groups, discussed by the External Design Advisory Group and approved by the Design Authority (DA). We explain these governance arrangements in detail in the management case.

3.3 For each issue addressed in this chapter, we first briefly explain the problem or opportunity under consideration, including a description of the current arrangements or processes, a description of the options considered including their main strengths and weaknesses, and summarise our conclusions. Our conclusions on which options to carry forward to the shortlist are explained with reference to our programme objectives, as set out in the strategic case. More detailed analysis of each issue is in the policy papers considered by the DA and the External Design Advisory Group (see appendix 5 for reference).

Solution architecture

[46] Ofgem, Moving to reliable and fast switching: Updated Target Operating Model and Delivery Approach – Decision, November 2015.

A) Solution architecture options

3.4 The existing switching system solution architecture comprises separate switching services, UKLink for gas and MPRS for electricity, and separate online enquiry services, DES for gas and ECOES for electricity. We have provided more detail on these in appendices 1 and supplementary appendix 4.a.

3.5 The existing services do not, however, exist solely to support switching. Both UKLink, run by Xoserve on behalf of Gas Transporters, and MPRS, run by distribution network operators, perform multiple functions. Other functions supported by these services, which must not be compromised by the Switching Programme, include:

- maintaining registers of meter points, including recording the creation and withdrawal of meter points and changes to meter point status
- recording parameters that determine how wholesale settlement is performed for each meter point
- recording parameters used in the calculation of network charges
- recording details of the metering assets installed at each meter point.

3.6 Throughout the current Blueprint phase of the programme, we have examined which system architectures, including the existing systems, could deliver the programme's objectives and be consistent with its design principles.[47] To support this, we engaged with the operators of existing industry systems and their users (eg energy suppliers, network operators and metering agents) to establish a range of possible approaches and test their viability. Two principle lines of enquiry were pursued: firstly, the scope of new systems to support switching and, secondly, the types of technology that might be deployed. The analysis showed that some types of technology might be employed as discrete options, irrespective of the wider systems and process changes that might be implemented, while others would only be relevant when incorporated within options that include specific applications. This is reflected in the options that are summarised below.

3.7 Options considered:

A.1 Modify existing systems: the existing systems supporting switching (UKLink in gas and MPRS in electricity) and the management processes that support them could be modified to support the policy objectives of the Switching Programme. The existing online enquiry services would also be retained.[48] This option could allow customers to switch much more quickly than

[47] Ofgem, Switching Programme Design Principles, June 2016.
[48] If we do choose to retain the existing switching systems for gas and electricity, we could consider replacing the online enquiry services with a new MIS at a later date. However, this is not being considered as an independent reform option at this stage as it would not enable significant improvements to the reliability or speed of switching over and above what is offered by option A.1.

presently (reduced from up to 21 calendar days to 3-7 calendar days) but would not support next-day switching. While this option is likely to be the cheapest to implement, it would not deliver harmonisation between gas and electricity and is less likely to improve reliability. While Project NEXUS will deliver a modern platform to support gas switching, the MPRS system is nearly 20 years old and, potentially, less flexible when it comes to supporting further market evolution. *(Carried forward)*

A.2 Implement a new central switching service (CSS): under this option the switching functionality that currently resides in MPRS and UKLink would be transferred to a new harmonised dual fuel switching system. Where customers and suppliers wanted to, this new service would support next-day switching (ie a customer requesting a switch by, say, 5pm could be with their new supplier from midnight). This would be subject to any new business process options that were adopted in conjunction with this new switching system. Managing switching in a single service would allow processes to be harmonised and gas and electricity records to be linked. Both of these changes should facilitate improvements to reliability. It would however be a more expensive and complex option to deliver than A.1, and more risky. *(Carried forward)*

A.3 Implement a new CSS and a new market intelligence service (MIS): this represents a further increase in scope over option A.2 in that it includes replacing the current industry enquiry systems (DES for gas and ECOES for electricity) with an integrated MIS. Although this represents a broader scope and higher project cost and risk than A.2, fast access to reliable data was cited by industry participants as a major enabler of improved reliability in the switching process. A new MIS would provide a single, harmonised source for the meter point data that suppliers and agents need when switching consumers. Access to the MIS would be through real-time interfaces between computers or through online enquiry. Existing shortcomings in data quality would be addressed by introducing more rigorous data stewardship obligations on data owners. *(Carried forward)*

A.4 Mandate the use of blockchain technology to deliver the switching process: while some technologies, such as middleware, message broking or workflow orchestration, might be deployed to support a range of scoping options, other technologies were regarded as being sufficiently different that they should be considered as discrete options. Blockchain was the leading technology identified in this category. Blockchain is an emerging technology that relies on cryptographic algorithms to establish distributed ledgers to record ownership of assets. In the case of switching it was suggested that a blockchain ledger might be used to record not only the registration of suppliers to meter points but also smart energy contracts. This proposal would have an impact across the retail energy market and go substantially beyond the scope of the programme. In addition, industry participants were concerned about the maturity of the technology, how it might inter-operate with other industry systems and how a level playing field would be achieved for procurement. Accordingly an option in which blockchain was the mandated technology was ruled out from further consideration. *(Discounted)*

Conclusion

3.8 Options A.1, A.2 and A.3 provide platforms which are deliverable and would enable more reliable and fast switching arrangements to be realised. As the scale of intervention increases from option A.1 through to A.3, we would expect the level of cost, risk and complexity to increase, as would the potential benefits available to consumers and the industry. These three solution architecture options form the basis of our three reform packages, which we have summarised in the following chapter. We are testing these reform packages with the industry through a request for information (RFI), and will set out our appraisal of them within the next iteration of our business case, which we intend to publish in August 2017.

3.9 The specific technologies used to support options A.2 and A.3, which both involve new systems development, will be selected during the competitive procurement of software and services by DCC. Thus, while we have ruled out the consideration of technologies such as blockchain from being the mandated solution for CSS, service providers will be free to include relevant technologies in their solution offerings at the procurement stage.

Business process design

B) Objections

3.10 As part of the existing switching process, gas and electricity suppliers may under certain circumstances object to a customer switching to another supplier.[49] The current time period (window) allowed for the losing supplier to object to a switch is 5 working days for electricity. For gas there is a variable window (from a maximum of 7 working days to 1 or 2 working days depending on weekends and bank holidays). In order to meet our objective of introducing fast switching arrangements, this process would need to be completed more quickly.

3.11 Options considered:

B.1 A compressed (shorter) window with all domestic and non-domestic consumers subject to the same process. *(Carried forward)*

B.2 Instant approach, with all domestic and non-domestic customers subject to the same process. This can be delivered by

a. An instant reactive approach– the incumbent supplier would respond to a notification from the registration agent, *(Preferred)* or

b. An instant pre-loaded database – the registration agent would look up the objection status on a centrally managed pre-loaded database. *(Carried forward)*

[49] In 2015-16 Ofgem carried out a review of supplier objections. In July 2016, we published our decision to retain the existing domestic and non-domestic objections regimes. Ofgem, Decision on review of domestic and non-domestic objections.

B.3 Instant approach for domestic customers and compressed window approach for non-domestic customers. *(Carried forward)*

B.4 The incumbent supplier to specify for each meter point whether it should be treated using the instant approach or a compressed window. *(Discounted)*

Conclusions

3.12 Stakeholders have signalled that the costs of the above options may vary significantly. However, as the relative cost of each option is unknown, DA approved carrying them all forward for testing through our RFI. The one exception to this was allowing suppliers to specify how to deal with objections for each meter point, as this would add unnecessary levels of complexity without much anticipated benefit for industry participants. Therefore option B.4 was discounted. DA also agreed that although adopting the compressed window approach would not enable instant confirmation of a switch at the point of sale, or deliver as strongly as the alternatives on improving speed or future-proofing the system, it would likely be much cheaper and easier for the industry to implement. It has therefore been carried forward into our shortlist for further consideration along with options B.2 and B.3.

C) Cooling off

3.13 Domestic consumers have statutory 'cooling off' rights to cancel a services contract, normally within 14 days. Under the current working practices, suppliers start the switching process during the cooling off period and time the switch so that it concludes after the cooling off period finishes. This allows them to withdraw the switch if the customer cancels the contract. Speeding up the switching process so that a switch takes place during the cooling off period means that customers can cancel a contract during the cooling off period after the switch has taken place. We considered a number of issues related to cooling off:

- On cooling off, should a customer be automatically returned to their previous supplier, or left with their new supplier until they choose which supplier to agree terms with going forwards?
- Who should bill the customer for the period between the switch and cancellation under cooling off?
- If the customer wishes to return to their previous supplier, should that supplier be required to offer terms that are equivalent to those they would have faced had they never switched away?
- If the customer remains with the new supplier pending choice of a different new supplier, what terms should apply between cancellation under cooling off and execution of the second switch?

3.14 We have used the following definitions:

- Supplier A = the original supplier to the customer.

- Supplier B = the supplier that the customer switched to from Supplier A, but wishes to cool off from.

- Supplier C = any supplier (other than supplier B but including Supplier A) that the customer may choose to switch to once they have cooled off.

3.15 Options considered:

C.1 The customer would have to be returned to Supplier A. Supplier B would notify the registration system of the cooling off event and that the customer should be switched back to Supplier A. Supplier A would accept the returning customer on terms equivalent[50] to those that that would have applied had the customer not switched. Supplier B would bill the customer for the period that it was the registered supplier. *(Discounted)*

C.2 The customer would stay with Supplier B until they switch to Supplier C or agree to a new contract with Supplier B. Following contract cancellation, Supplier B would confirm to the customer that their contract has been cancelled and the terms that they are then being supplied on. Supplier B would also tell the customer that they can sign up with Supplier C or agree a new contract with Supplier B. The switch from Supplier B to C would be treated in the same manner as any other switch. *(Carried forward)*

C.3 The customer would be given the choice between options C.1 and C.2. Under this option the customer would be notified by Supplier B that they have the choice of either being returned by Supplier B to Supplier A, or staying with Supplier B until they either switch to a new Supplier C or agree a new contract with Supplier B. *(Discounted)*

C.4 The customer would have to be returned to Supplier A. Supplier B would notify the registration system of the cooling off event and that the customer should be switched back to Supplier A. Supplier A would bill the customer for the period that they were being supplied by Supplier B, as if they had never left Supplier A. The customer would not receive a bill from Supplier B. *(Discounted)*

C.5 Following contract cancellation, Supplier B would advise the customer that their contract has been cancelled and describe the options. The customer could contact Supplier A themselves to switch back on terms equivalent to those that would have applied had the customer not switched, sign up with Supplier C, or continue to be supplied by Supplier B. Supplier B would supply the customer under a deemed contract for a grace period of up to 30 days on the same terms that the customer originally contracted. If the customer does not enter into a new contract with Supplier B or switch away before the end of this period, Supplier B will supply under its standard deemed contract. (*Preferred)*

[50] This does not mean the terms the customer was on previously must be replicated. 'Equivalent terms' should be interpreted as terms that would be expected to leave the customer no worse off than they would have been if they hadn't left. The exact nature of these terms is for suppliers to determine.

Conclusion

3.16 Switching during the cooling off period allows customers to get the benefits of their new contracts quickly. Option C.5 is preferred as it promotes customer choice and encourages customers to switch in the knowledge that, if they change their mind, they will not face any detriment from exercising their cooling off rights. This minimises any risk to consumers, perceived or otherwise, from switching away from their incumbent supplier. The flexibility also puts control firmly in the hands of consumers and does not prevent them from negotiating improved terms with their original supplier.

3.17 For these reasons option C.5 is most likely to improve customer experiences of switching. Options C.1, C.3 and C.4 were ruled out because they do not give the consumer the same level of choice as option C5, so could lead to some consumers feeling put off from switching in future. However, option C5 would need a new requirement to be placed on suppliers to take a returning customer back on terms equivalent to those they would have been on had they not switched away. We understand that this would impose costs on suppliers in respect of their customer service provision that they do not currently incur. We are using our RFI to better understand the nature and extent of those costs. For this reason, though not preferred, we have also carried forward option C.2 for further analysis. This will allow us to better understand the additional cost to Supplier A of offering equivalent terms to returning customers. This is one of the reform package variants, discussed in the following chapter, which we are testing through our RFI.

D) Dual fuel – one fail/all fail

3.18 The current electricity and gas registration systems operate independently. When a dual fuel customer wishes to switch more than one meter at the same time (eg for a dual fuel arrangement) the supplier currently manages the switching transactions for each of these meters as discrete activities. This could confuse and frustrate consumers. By covering both electricity and gas registration, the introduction of a new CSS would offer the opportunity to link the progress of dual fuel switch transactions.

3.19 Options considered:

- D.1 Automatically 'one fail/all fail' – under this option all the linked requests would be rejected if one fails validation by the CSS or is objected to. *(Discounted)*
- D.2 Automatically 'proceed where possible' – independent processing of dual fuel registration requests. Under this option successful requests would be taken forward to registration and those that failed would not. Note that this is what happens under current arrangements. *(Discounted)*
- D.3 The supplier chooses the approach to be taken on a case-by-case basis (ie to specify 'one fail/all fail' or 'proceed where possible'). *(Preferred)*

Conclusion

3.20 Option D.3 is preferred as it enables suppliers to be flexible to the demands of their customers, making consumers feel more in control and reducing the instances of them feeling let down. This option therefore most strongly meets the objective of improving customer experiences of the switching process. Options D1 and D2 could result in a negative switching experience for consumers as neither they nor suppliers would have any discretion in determining whether the switch should proceed or not if one or more of the linked requests falls down.

E) Standstill

3.21 With fast (eg 'next-day') switching there is a risk that data exchanges by industry parties (including exchange of meter technical details, processing of closing and opening meter reads, and agent appointments) will not have been completed and validated before the consumer chooses to switch again. This could result in operational errors such as errors in opening and closing bills and energy settlement between suppliers and shippers. We have therefore considered whether consumers should be required, as they are currently, to take an energy supply with a supplier for a predefined minimum period – a post-switch standstill period – before being permitted to switch again. The current minimum periods for supply are 10 calendar days for electricity and 14 calendar days for gas. The need for data integrity must be balanced with the aim of encouraging more consumer switching.

3.22 Options considered:

E.1 No capacity to apply a standstill period. *(Discounted)*

E.2 Including the capacity to apply standstill period: a configurable period of 0-10 calendar days could be used to mitigate the risk of data integrity issues arising, providing a sufficient window for necessary information to be gathered and transferred. This would allow the complete removal of the standstill period at a point when that data integrity issues are no longer a concern*. (Preferred)*

E.3 A fixed 14 day standstill period: a fixed period that may align with the customer cooling off period. *(Discounted)*

E.4 Longer standstill period: a period of say 14-28 days. A longer standstill period would accommodate the current timescales for agreeing 'switch reads' between the suppliers, and significantly mitigate the risks of data integrity being compromised. *(Discounted)*

Conclusion

3.23 Option E2 was preferred by DA as it provides the best balance between encouraging switching and ensuring data integrity. DA agreed that the time period for this option should be easily adjustable within the CSS to support the aim of reducing the standstill period, within the 0-10 day bracket, over time. As long as data integrity allows, the aim is to remove the standstill period (or reduce it to 0 days) as early as possible. Option E1 could compromise data integrity by not providing an opportunity to ensure the accuracy of the data, in particular in the early days of operation of faster switching. This could make consumers' onward switches

unreliable. Options E3 and E4 could prevent consumers from switching for an unduly long period. Option E3 could also lead to misalignment of processes and potentially confuse consumers.

3.24 In support of option E.2, DA requested that separate standstill periods be applied to smart and traditional meters in recognition of the different levels of data integrity risk associated with them. DA also agreed that no standstill period should be applied when a consumer has been transferred to a new supplier in error, as delaying the return of these consumers would be a perverse outcome that could frustrate them. Finally, DA also agreed that, should a consumer cool off from a contract within the standstill period adopted at that time, their onward move to an alternative supplier (which could be their previous supplier) would be delayed until after the standstill period had expired.

F) Repository of agent information in the registration service

3.25 The existing registration systems (MPRS and UKLink) store the identification codes of the agents responsible for providing services for any given meter point. However, the details of some agent types are not included, and there are inconsistencies between gas and electricity. The options below address the issue of whether there should be a repository of agent IDs held centrally, and if so, which types of agent should be included. We have considered this within the scope of our programme as it could support faster switching validation processes.

3.26 Options considered:

F.1 No repository - anyone requiring the ID of the agent responsible for a specific meter point would need to contact the supplier and await their response. *(Discounted)*

F.2 Agent ID stored centrally - the ID of agents would be accessible to any participant authorised to retrieve this information. *(Preferred)*

Within the overarching principle of storing agent IDs, we then considered which agent classes should be included. Options are:

i. the agent classes recorded centrally are shippers (gas), data collectors (DC), data aggregators (DA), meter operators (MOP) and meter asset managers (MAM)[51] *(Carried forward)*

ii. as (i) above plus metering communications providers (MCP) *(Carried forward)*

iii. as (ii) above plus meter asset providers (MAP). *(Preferred)*

[51] Within this option, we would also take the opportunity to harmonise the MOP and MAM roles between gas and electricity.

Conclusion

3.27 A centrally held repository will enable faster switching validation processes and minimise the possibility of a switch being delayed by an administrative error on the part of a supplier. Option F.2 is therefore preferred as it will deliver most strongly against our objective to improve customer experiences of switching. It will also harmonise requirements between gas and electricity and provide a single point for relevant industry parties to identify the accountable agent for each meter point. Sub-option Option F.2.iii is preferred as it would offer the most clarity and certainty about agent IDs for a new registration, though we will carry forward the other sub-options for consideration in the context of the different reform packages.

G) Agent appointments

3.28 Agents are appointed by suppliers to perform a range of activities relating to individual meter points. When a meter point switches between suppliers, a new set of appointments then commences. While it is clear that agent appointments change as a consequence of a supplier switch, there is a question as to whether realisation of reliable and fast switching is dependent on them. We have considered whether the programme should develop new arrangements to manage the appointment of agents if a new CSS is implemented.

3.29 Options considered:

G.1 Suppliers continue to be responsible for the appointment of their agents. *(Preferred)*

G.2 Develop new workflow management facilities to support agent appointments and de-appointments, and the exchange of information between agents. *(Discounted)*

Conclusion

3.30 The existing procedures for carrying out agent appointments have operated for around 20 years and are generally regarded as being robust. The DA supported recommendations that the development of a new workflow management system for agent appointment and de-appointment procedures was not within the scope of the Switching Programme as it would not contribute to reliable and fast switching. The DA agreed that the agent appointment process should therefore continue to be managed by suppliers, who can choose to update their procedures in light of changes to the switching arrangements. In particular, if we choose to introduce a new CSS, the notifications sent from this service directly to agents could fulfil the appointment and de-appointment process on behalf of suppliers, should both parties agree to this.

H) Differentiation by customer-type on the CSS

3.31 In a number of policy areas we have considered whether there is a need for differential functionality based on customer type. This has been discounted in all cases other than for objections, where we have carried forward the possibility for

testing through our RFI. In addition to this potential functional need, industry stakeholders have also indicated a desire that any new CSS should include an indicator that identifies a meter point as being for a domestic or non-domestic premises, for monitoring and validation purposes.

3.32 Options considered:

H.1 The CSS would not contain an indicator relating to customer type which identifies a meter point as domestic or non-domestic premises. *(Discounted)*

H.2 The CSS would hold an indicator that will identify a meter point as domestic or non-domestic. This indicator would be submitted by the gaining supplier on their registration request. *(Preferred)*

Conclusion

3.33 Suppliers have told us that it would be beneficial to them if the customer-type information is held centrally in the CSS. Including a customer-type indicator within the CSS and providing access to this data could also help with validation of customer-provided data and triangulation. Option H.2 was therefore preferred by DA as it could benefit suppliers while also potentially improving data reliability.

I) Advance registration

3.34 We have considered how far in advance of consumers' desired switch dates the CSS should be able to accept a registration request. We have looked at whether the current rules on advance registrations need to change and how the CSS will manage advance registrations. The current advance registration rules are in the relevant industry codes, though they differ between electricity (28 calendar days) and gas (30 working days).

3.35 Options considered:

I.1 Shorter advance registration request period (eg 14 days). *(Discounted)*

I.2 Similar to today's advance registration period (eg 28 days) – same as the current electricity arrangements. *(Preferred)*

I.3 No restriction to advance registration period. *(Discounted)*

Conclusion

3.36 The ability to submit a registration request in advance of a switch enables a switch to be locked in within the process, providing certainty to consumers and suppliers that it will take place.

3.37 Option I.1 was discounted by the DA as allowing such a brief advance registration period would restrict the benefits. Conversely, while option I.3 would

maximise the benefits of certainty to suppliers a long way out, it was discounted as it could have a number of unwanted consequences. In particular, the longer the advance registration period, the more chance there is that the consumer could build up a debt with the incumbent supplier after the objection period has passed. Also, given that DA agreed there should only be one pending registration per meter point at any time to avoid potential confusion for consumers, registration of a switch for a long time in advance would act as a barrier to any other suppliers performing a switch for that meter point. Meanwhile, over this long period a consumer may have moved on, changed their mind or forgotten their original intentions. Option I.2 is therefore preferred as we consider it to deliver the right balance between these impacts. This approach supports process harmonisation between gas and electricity.

J) Consumer facing M-number helpdesk

3.38 Under the current arrangements each electricity DNO runs a telephone helpline to answer consumer queries on issues such as establishing their meter point number and which supplier is registered to that meter point. A single contact centre exists for gas, established by the gas transporters (GTs). Introducing a new CSS run by the DCC would provide the opportunity to introduce a single, harmonised contact point for these questions on both gas and electricity. We do not intend for this helpdesk to deal with wider issues such as why a switch hasn't progressed. Suppliers would continue to be responsible for managing relationships with their customers.

3.39 Options considered:

J.1 No centralised helpdesk: the 'do nothing' option. Retain the existing federated arrangements for electricity and gas. *(Carried forward).*

J.2 Centralised helpdesk: central contact number overseen by the provider of the CSS. The central helpdesk would be responsible for responding to queries such as establishing consumers' meter point numbers and incumbent suppliers. Second-line support (for example to resolve complex plot addresses or enquiries on connections) will be provided by the network operators (ie the current operators of this service). *(Preferred)*

J.3 De-centralised helpdesk: a central contact number that transfers all consumers directly to their relevant network operator. *(Discounted)*

Conclusion

3.40 Having a single helpdesk that covers both gas and electricity will be more efficient for consumers, helping them resolve their issues more quickly. This supports our objectives of improving customer experiences and achieving harmonisation across the gas and electricity markets. Option J.2 is therefore preferred in the context of reforms that include a new CSS, which will be the central record of supplier ID and meter point numbers. In the absence of a new CSS, with existing systems retained, a centralised helpdesk will not be considered. Option J.1 has therefore been carried forward in case of this outcome, and as an alternative should option J.2 prove not to be cost-effective.

Other issues

3.41 In addition to the policy issues summarised above, another important issue that we have considered is what actions the industry could take to reduce the impact and prevalence of erroneous transfers. A paper containing our initial analysis on this issue is in appendix 5. This work is now being taken forward by an industry-led working group.

Implementation

3.42 Until we have decided on the detail of the reforms we are taking forward, it will be too soon to consider our implementation plans in much detail. However, it is important that we understand the implementation options that are available to us, and how appropriate each of these might be to the different options we are considering. This is particularly the case where the approach to implementation could have a material impact on the associated costs and risks of each option. We have therefore carried out a high level consideration of the options for some key implementation issues. We will continue to develop our thinking on these issues as we develop the detail of the new switching arrangements.

K) Transition strategy

3.43 The transition strategy will determine how we launch of the new switching arrangements. The strategy should strike the right balance between eliminating undue delay in delivering the benefits of reliable and fast switching to consumers, and managing delivery risks. The options summarised below vary primarily by the period of time taken, or the number of stages required, to launch the new switching arrangements. Ultimately, the best approach will depend on the solution architecture option that is taken forward.

3.44 Options considered:

K.1 A big bang approach: the new switching arrangements would all go live for all participants at the same time. As a result, all benefits would be realised for all consumers at once, and the risk of competitive distortion from early access to the new arrangements would be removed. It would minimise or eliminate a period of both current and new switching arrangements operating in parallel, which could reduce overall delivery costs. However, delivery of all aspects of the programme at the same time may increase the risk and impact of total or partial failure of the new arrangements, which would potentially have a severe impact on the operation of the retail market in its entirety. *(Carried forward)*

K.2 Phased by functional component: moving from the existing arrangements to new ones would be done in phases, with different elements introduced one by one. For instance, if the new arrangements comprised a new CSS and MIS (ie option A.3 above), one possible option would be to introduce the CSS first and the MIS at a later date. This manner of phasing would ensure that the majority of the benefits for consumers, in terms of reliable and fast switching, would be delivered as soon as possible. This could also somewhat

reduce the delivery risks, relative to a big bang approach, as we could identify and learn from challenges experienced during the first transitional phase. It would also mean that all consumers have access to the benefits of the reforms at the same time. *(Carried forward)*

K.3 Other phased options: transition from existing arrangements to new would be implemented in phases, differentiating between different groups of consumers. Phasing might be by sector (introducing changes to gas or electricity first), by customer type (domestic or non-domestic), by market participant, or by meter type (those consumers who are already recorded in the DCC database as having a smart meter gaining access to the new switching arrangements before others). We gave special consideration to the latter mode of phasing following a recommendation by EDAG. Any kind of phased approach would reduce the number of consumers affected by the changes following the initial phases of implementation. Though this would place less pressure on the new systems and processes in the first instance, reducing risk, it would delay the realisation of benefits by all consumers. This could also potentially offer a competitive advantage to some suppliers. It would also mean that there would be a period during which both current and new processes would be running, requiring duplication of systems for market participants, and would increase the complexity and cost of delivery. *(Discounted at this stage)*

Conclusion

3.45 Our preferred transition strategy will ultimately depend on which solution architecture option we choose. Whichever transition approach is chosen, we will consider the feasibility of delivering some of the reforms to existing switching processes early. Early delivery of some reforms, such as early introduction of a reduced objections window and setting an expectation that switches should take place within cooling off periods with the consumer's consent, will increase the benefits to consumers associated with the programme by improving the customer experience of switching even before elements of any new solution architecture arrangements are delivered. We will also consider how to minimise the implementation risk and develop strategies for recovery in the event of large-scale system failure.

3.46 If we choose to retain and modify the existing separate systems for gas and electricity (option A.1), then separate transitions should be taken forward. However, these separate transitions should work to a common go-live date, akin to a big bang approach. This would allow dual fuel suppliers to implement systems changes in a single event, and avoid unnecessarily confusing consumers.

3.47 If we choose to implement a new CSS, while retaining the existing enquiry services (option A.2), then a big bang offers the most practical approach to transition. In practice, the CSS would be difficult to divide into component parts in order to implement in a phased manner without adding excessive complexity and cost. While we recognise the risk inherent in a single switch-on date, we think the additional cost and foregone benefits from developing such a phased approach for the CSS is likely to outweigh the potential benefits.

3.48 If we choose to introduce a new CSS and MIS (option A.3), a transition based on phasing by functional components offers the most practical solution. The order in which the phasing will occur is yet to be finalised. We will conduct further analysis to determine the most appropriate order to deliver the phases of the programme, in order to balance mitigating delivery risk with timely delivery of consumer benefits.

L) Data improvement strategy

3.49 Failed and delayed switches can be frustrating for consumers and undermine their confidence in the switching process. Our engagement with stakeholders has indicated that poor data quality is a common cause of failed and delayed switches. Of switches that fail or are delayed, we understand that around 80% are due to poor quality address data. Our analysis of monthly switching data from the six largest energy suppliers suggests that approximately 12,000 customer switches to these suppliers fail each month because address data is inadequate.[52]

3.50 Our stakeholder engagement indicates that a further 15% (or approximately 2,000 switches per month) are caused by incorrect meter technical information, meaning that the meter is not equipped to handle the tariff the supplier is attempting to apply to the consumer. From this analysis we have concluded that addressing weaknesses in address data could bring significant benefits to consumers by reducing the number of failed or delayed switches. The options below seek to address different aspects of data quality independently.

3.51 Options considered:

L.1 A comprehensive, externally sourced database of premises addresses would be procured and managed from a third-party provider. This database could either be appended to existing industry databases, or could form part of a new CSS. The database would form the primary source of address data for customer switching, following an initial data cleanse and migration exercise, and would ally a high-quality, procured set of postal addresses to meter point number data. *(Carried forward)*

L.2 Suppliers to identify certain types of meter technical data (such as the correct meter type and meter time-switch code) relating to their customers' premises and work with distribution network operators (DNOs), GTs, MOPs and MAMs to ensure that this data is accurate and consistent across all industry data. This would be ongoing but its utility would in effect be limited by the rollout of smart meters, where meter technical data will be reconfigurable and available to a gaining supplier. *(Carried forward)*

[52] We asked the six largest suppliers to provide us with a sample of switching data as part of our stakeholder engagement programme. These figures are derived from that limited sample and so are only rough estimates. Further analysis is set out in our data improvement strategy paper, a link to which can be found in appendix 5.

L.3 DNOs and GTs could identify and cleanse plot addresses contained within their meter point address data, and communicate the results of this cleansing exercise to industry-held data sources. In addition, DNO and GTs could periodically monitor and produce a time-dated report on the plot addresses within the data that they hold, to an appropriate authority (such as a code body).[53] *(Carried forward)*

L.4 Suppliers could be mandated to use site visits for the installation of smart meter equipment to verify premises address data. However, this is potentially costly, so would only be used to verify a residual population of address data that cannot be obtained using the methods above. This measure would depend on the timing of the smart meter rollout programme and the identification of a residual population of address data which cannot be identified using algorithmic or desk-based means from other remedies. *(Carried forward)*

L.5 DNOs and GTs could be required to refrain from issuing MPAN and MPRNs to developers until there is a scheduled fitting date for the specific meter point to which the MPAN or MPRN will be assigned, with the intention of reducing the incidence of crossed meters by lessening the interval between MPAN or MPRN apportionment and supply installation. Participants at an industry user group argued that this could have significant unintended consequences for contractual relationships between suppliers and their customers (such as property developers), and did not reflect the manner in which meter points are installed at new properties. *(Discounted)*

Conclusion

3.52 Data improvement measures are likely to benefit consumers in terms of reliability, and the industry in terms of efficiency and cost. They could also be costly to implement. With the exception of option L5, which we have discounted due to its potential unintended consequences, we consider that all of the options above could improve industry data, so are carried forward for further testing through our RFI. We will continue to consider whether there are other ways the quality of the data that supports switching can be improved.

[53] This option would also apply to independent distribution network operators (iDNOs) and independent gas transports (iGTs).

4. Initial economic case: reform packages

Chapter summary

The options carried forward from the longlist, as described in chapter 3, have been used to develop the three reform packages that we are testing through a request for information (RFI). This chapter explains how we have developed these reform packages, and summarises their key features and the main differences between them.

Forming the shortlist

Introduction

4.1 The reform packages are designed to transform the switching arrangements for consumers and the industry, with each one representing a transformation to a different end state.

4.2 We have constructed the reform packages by drawing together three unique combinations of the reform options carried forward from the longlist in the previous chapter. As complete packages, they differ primarily by the scale of intervention required to implement them and the benefits they would deliver. Although we expect that the more interventionist options would deliver higher levels of benefits, these would come with greater cost, complexity and risk. We assigned each of the individual reform options carried forward from the longlist to reform packages, while considering how practical each one would be to implement within the constraints of the IT and other arrangements that provide the foundations of that package. Each package is designed to provide a coherent and workable set of switching arrangements for the industry and consumers.

4.3 An individual reform package should not be considered as a stepping stone to another package. Although it is possible that implementation of a particular package is phased, any similarity between one reform package and an implementation phase within another package is coincidental.

4.4 The reform packages set out in this chapter are presented as if all aspects of each package are firm. This style has been adopted to provide respondents to our RFI with a clear understanding of the content of each reform package and to allow us to conduct a thorough economic appraisal of the options. In a few instances we also wish to test the attractiveness of some alternative reform options to those presented as the central case within a specified reform package eg different ways of handling objections. In these cases we have identified a set of variants from the central case of a specified reform package. We are seeking additional information on these variants through our RFI to help us determine the most advantageous approach.

4.5 Once we have finished appraising the reform packages and their variants, the preferred package may adjusted during later stages of the current Blueprint phase of the programme. For example, to take advantage of features that were highly rated in another package or which receive wide support during our consultation in August 2017. We may then make further adjustments during the Detailed Level Specification (DLS) phase of the programme, when technical constraints or opportunities may be identified.

Principles of package design

4.6 In accordance with HM Treasury's Green Book methodology for appraisal and evaluation[54] we have set out alternative ways of achieving the programme's objectives that we will compare to an appropriate counterfactual: the 'do nothing' option. It is also best practice to include a 'do minimum' option in our short list. This can be used as a benchmark to check that the benefits of the more interventionist options are sufficient to justify any incremental costs.

4.7 In designing the reform packages to be assessed we have applied the following principles:

- Each reform package should require a distinctly different level or type of intervention to implement them.
- Each reform package must have the capacity to deliver sufficiently against our objectives so that it could be considered a credible outcome for the programme.
- Each reform package must comprise an internally consistent set of policy options so that the package would deliver a coherent set of switching arrangements.
- Each reform package must be deliverable using the regulatory levers available to the programme.

Approach

4.8 The nature of each reform package for new switching arrangements is founded on the choice of solution architecture. As explained in the longlist assessment, the solution architecture consists of two main components:

i. Switching services: at present UKLink is the existing service for gas and MPRS for electricity. These could be replaced by a single, central switching service (CSS) covering both gas and electricity.

[54] HM Treasury, The Green Book.

ii. Enquiry services: the existing enquiry services are DES for gas and ECOES for electricity. These could be replaced by a new central market intelligence service (MIS), covering both gas and electricity, which would enable authorised users to access data needed to facilitate a switch.

4.9 Our first step in defining the reform packages has therefore been to identify the extent to which they ought to rely on enhancing existing IT services or developing new ones. As set out in the longlist assessments in the previous chapter (paragraphs 3.7 to 3.9), we have carried forward three possible solution architecture configurations to form the basis of our reform packages. These are:

A.1 Modify existing systems: retaining the existing switching services and enquiry services for gas and electricity.

A.2 Implement a new CSS: transferring the switching functionality that currently resides in MPRS and UKLink to a new harmonised switching system operated by DCC. Existing enquiry services would be retained.

A.3 Implement a new CSS and new MIS: replacing the existing services for gas and electricity.

4.10 With these options selected as the foundation of each package, our next step was to identify which of the business process and implementation options that were carried forward from the options analysis should be applied to each reform package. This has involved continued engagement with industry stakeholders in design teams, user groups and External Design Advisory Group to establish the most practical ways of supporting the preferred policy position.

4.11 The final step was to identify which specific additional reform options to carry forward for further analysis. These mainly cover issues where there was insufficient evidence - particularly relating to costs - to narrow down the options any further at the longlist stage. For each reform package, we have identified variants to the central case, and are seeking further information from industry participants. For example, we are looking to assess the different approaches to handling objections that we carried forward from the longlist.

Content of the reform packages

4.12 In addition to the current arrangements, we are carrying forward the three reform packages for further analysis:

- Do nothing (RP0): this represents the counterfactual - the baseline against which the impacts of other packages will be appraised. This option will not deliver our objectives for reliable and fast switching, and is included primarily for analytical purposes.

- Reform Package 1 (RP1): the existing industry systems architecture would be retained and gas and electricity processes would continue to operate independently (option A.1 from the longlist). Existing systems and processes would be modified to shorten switching times. Data reliability would be

improved by procuring a standard GB address list, that gas and electricity meter points would be reconciled against to ensure they are accurately matched. Electricity suppliers and gas shippers would have a smaller window (one working day) to object to a switch. Arrangements such as those for standstill periods, advance registration and cooling off periods would also be adjusted, and harmonised for gas and electricity where possible. Where consumers do choose to cool off from a contract after they have switched, their original supplier would be obliged to take them back on terms equivalent to those they would have faced had they not switched away. This option would shorten the minimum switching period from around 21 calendar days to between three and seven calendar days, depending on weekends and bank holidays. Meter asset providers (MAPs) would also start to receive notifications of switches. This option satisfies the recommendation within HM Treasury's guidance to include a 'do minimum' option. This option is intended to strike a balance between minimising the burden on the industry while delivering sufficiently against our objectives so that the outcome of the programme could be considered credible.

- Reform Package 2 (RP2): the switching functionality that currently exists within separate gas and electricity switching services would be replaced by a single CSS. This would harmonise the gas and electricity switching processes where appropriate. In gas, suppliers would initiate a switch, rather than shippers as is currently the case. Should a supplier wish to object to a customer loss, they would have to develop an automated mechanism to do so on an instant basis. This option would allow a switch to be completed by the start of the next calendar day where a switch request has been confirmed by the CSS by 5pm.[55] Significant improvements to data quality would be achieved, in particular through linking meter points to a standard GB address list. Switching requests would be linked so that (if required) both parts of a dual fuel switch are guaranteed to be executed on the same date. Updates to smart meters would also be more closely synchronised with the time of a switch. As with RP1, MAPs would also start to receive notifications of switches.

- Reform Package 3 (RP3): in addition to the changes outlined in reform package 2, the currently separate gas and electricity enquiry services would be superseded by, or made accessible through, a single MIS, allowing users to look up information relevant to a particular switch, that would cover both gas and electricity data. As with Reform Package 2, this option would allow a switch to be completed by the start of the next calendar day. We expect that it would bring additional benefits for the reliability of switching as more industry switching data would be accessible via a single source, enabling easier matching and reconciliation. In addition to access to register data the MIS may also be able to present information scraped from transactions passed across the communications network (this latter capability may be contingent on the characteristics of the networks employed for carriage of all relevant retail energy transactions).

[55] We are also testing with industry through our RFI how the costs of the reforms would vary if switches had to be completed by the end of the next calendar day.

4.13 Definitions of each of the reform packages and their component parts are presented in tabular form in a supplementary appendix (4.a) and the packages are described in more detail in appendix 1.

4.14 The business process models in appendix 2 reflect the switching arrangements as presented in RP2 and RP3. The principal difference between RP2 and RP3 is that suppliers and other participants would use the new MIS to access meter point information rather than DES and ECOES. As the process models do not identify the sources of data (eg the data accessed by a supplier to validate an address supplied by a consumer) the process models apply equally to the two packages. The process models do not reflect the arrangements that would apply under RP1, which are prescribed primarily by the MRA and UNC (subject to the proposed enhancement as set out in RP1).

4.15 The data architecture presented in appendix 3 represents a target architecture based on a fundamental analysis of data objects and their properties and behaviours. The data model spreadsheet indicates how the data architecture might be applied under RP2 and RP3. For RP1 it should be assumed that the current data architecture (with modifications to allow for the capture of additional items such as MAP ID for gas) will continue to apply. The RP2/3 data architecture should be treated as a working assumption for the purposes of responding to our RFI, which will be subject to further analysis as the programme proceeds into the DLS phase when the practicality of implementing new data architectures will be assessed.

Variations to the reform packages

4.16 The reform packages above describe alternative programmes of work to deliver improvements to the switching process. The policy positions they reflect are the preferred positions agreed by the DA, as summarised in the longlist section of this chapter. In a few instances the DA was unable to arrive at a firm position, generally because there was insufficient evidence on the costs of implementing particular policy options. As a consequence, respondents to our RFI have been invited to provide evidence in relation to the central case of each reform package (as described in appendices 1 and 4.a) and on a small number of variants within specific reform packages. This will enable us to consider the given variants across the different reform packages.

4.17 The variants described in appendix 1 can be summarised as follows:

- Cooling Off: the central case for all three reform packages is that suppliers will be obliged to offer equivalent terms to returning customers (option C.5). One variant will be assessed through our RFI for RP1: not introducing the obligation to offer equivalent terms (option C.2). We assume the responses for this variant in relation to RP1 will be relevant to all three packages.

- Objections: the central case for both RP2 and RP3 is for objections to be responded to on an 'instant reactive' basis (option B.2.a). Three variants will be assessed through our RFI for RP2: 'instant pre-loaded' (option B.2.b); a compressed window (option B.1); and a mixed approach according to whether the switch is for a domestic or non-domestic premises (option B.3). We

assume the responses for these variants in relation to RP2 will also be relevant to RP3.

- MIS development for RP3: the central case is that DCC will develop the MIS. One variant will be assessed: MRASCO and/or Xoserve will develop the MIS.

5. Outline commercial case

Chapter summary

The outline commercial case sets out our initial view of the procurement arrangements that are necessary to ensure the successful delivery of the Switching Programme.

5.1 Our proposed reform options for reliable and fast switching will require changes to current central industry systems and in some instances, procurement of new systems. It is therefore important that whichever reform package we select as our preferred option can be implemented through commercially viable and well-structured procurement.

5.2 In the outline commercial case, we set out the arrangements that we think will be needed to plan and manage potential procurements required in future phases of the Switching Programme to minimise risk and maximise value for consumers. We cover:

- commercial viability of our proposed reform packages
- our current thinking on the procurement roles and responsibilities of industry parties
- key contents of the procurement framework developed by Ofgem and the Data and Communications Company (DCC)
- next steps for developing procurement arrangements including service requirements and allocation of risk.

Commercial viability

5.3 In Reform Package 1, the central industry switching arrangements remain separate in electricity and gas. The key changes proposed involve enhancing the effectiveness of existing systems and processes managed by network companies (or their agents) for central industry use, and related internal systems and processes operated by individual suppliers and gas shippers. In Reform Packages 2 and 3, new architecture is proposed for central industry systems, along with further data and business process changes.

5.4 The solutions proposed in our reform packages do not rely on the use of any unproven technology or the development of emerging technology, and there are currently considered to be multiple potential market providers of the envisaged services. Therefore, we have not identified any overt market constraints that would render procurement exercises required to deliver any of the proposed reforms commercially unviable through our design work in the Blueprint Phase and stakeholder engagement.

Procurement roles and responsibilities

Reform Package 1

5.5 We expect the procurement requirements of this reform package to be fulfilled by existing delivery bodies under current commercial and regulatory arrangements. In the case of the address data improvement remedy proposed in reform package 1, we would consider which party or parties would be best placed to procure the GB standard address services.

Reform Packages 2 and 3

5.6 We consulted on the policy option of placing responsibility with DCC for managing central industry changes in the switching arrangements in 2014,[56] and set out our policy position to proceed with allocating DCC a role in the programme in February 2015.[57] In July and December 2015, we consulted on the scope of DCC's licence obligations and proposed licence modifications to require DCC to undertake certain functions in the Switching Programme. Our decision on the licence changes was made in May 2016 to give DCC obligations to make all relevant preparations to procure a Centralised Registration Service (CRS) from third-party provider(s) as part of a competitive tender.[58] The licence modifications also require DCC to contribute to the design of the new registration and switching arrangements, and the identification of requirements for the new CRS.

5.7 The definition of the CRS in the licence is intentionally broad as the design will be designated by the Authority based on the design baselines developed by the programme. Based on the programme's design work to date, in Reform Packages 2 DCC could be responsible for procuring a new CSS, and in Reform Package 3 this could potentially include the CSS and an MIS. DCC could also be responsible for procuring various services to support delivery of the new arrangements, such as a systems integration function and independent assurance. As described in the economic case, in relation to Reform Package 3, we are assessing a specific alternative to DCC being responsible for the MIS in which MRASCO and/or Xoserve would develop the MIS.

5.8 DCC is not able to enter into contracts with provider(s) for the CRS under its licence without direction from the Authority. The Authority can also direct DCC to cease any of its preparation activity for procurement and its contribution to the design requirements of the CRS. This flexibility accommodates Reform Package 1 as a potential option of the shortlist set out in the economic case, and the variant to the central case presented in Reform Package 3.

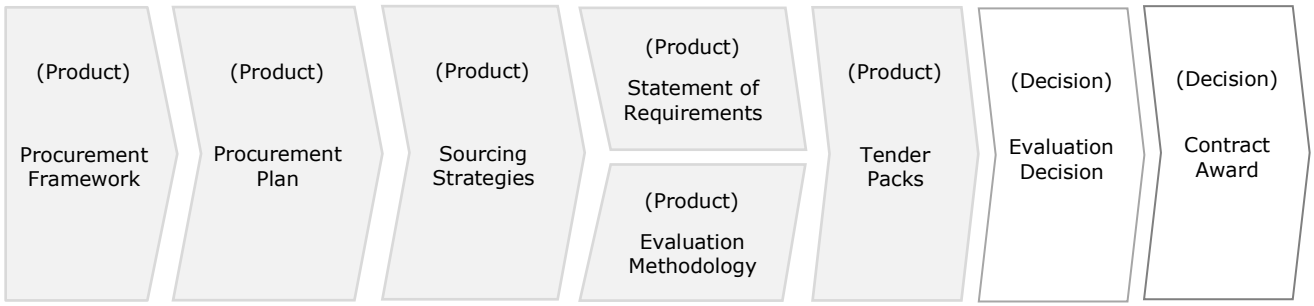
[56] Ofgem, Moving to reliable next-day switching – Consultation, June 2014.
[57] Ofgem, Moving to reliable next-day switching – Decision, February 2015.
[58] Licence changes came into effect in July 2016.

The Switching Programme Procurement Framework

5.9 The obligations on DCC to make relevant preparations for procurement in its licence are high-level in nature. Ofgem and DCC have therefore jointly developed a framework for DCC's role in procuring the CRS.[59] This framework sets out considerations for procurement that we think are relevant for DCC to take into account in fulfilling its licence obligations, and sets out how we expect DCC to work with us in the context of those obligations and the financial incentive regime we have proposed. In it, DCC confirms it is materially in agreement with the approach to procurement set out by us and provides information on how it will support the conditions that we have identified.

5.10 The considerations in the procurement framework set out our expectations on areas DCC should take into account in designing and executing the CRS procurement process. These areas include providing transparency to stakeholders, and how DCC would participate in governance and assurance processes for procurement products it develops and contribute to the broader programme governance. Its scope is the end-to-end procurement process. The procurement framework has been reviewed by procurement assurance experts and their assurance report describes the framework as providing a 'sound basis for developing the next stage procurement products'. Figure 5 below outlines the key programme products and decisions involved in the procurement process.

Figure 5: Procurement lifecycle



5.11 DCC has committed to developing a procurement plan. The procurement plan should set out the scope and the content that the end-to-end procurement process will encompass. It will set out the number of individual procurement projects based on identified components of the CRS solution and service, and the plan for delivering these. We expect DCC's initial work on the procurement plan to feed into our consultation on the preferred reform package set out in Design Baseline 2 and draft outline business case (OBC) for the Switching Programme. The procurement plan will then be further developed based on our decision on the reforms.

5.12 Each of the procurement projects described in the procurement plan will require its own procurement approach and procurement process. These will be

[59] Ofgem, Switching Programme Procurement Framework, January 2017.

developed following the procurement plan, and described in documents known as 'Sourcing Strategies'.

Risk-sharing

5.13 At this stage, the scope of DCC's licence obligations does not extend beyond procurement of the CRS, ie it does not extend to managing the implementation and operation of the CRS following selection of a preferred bidder and contract negotiation. Once we have selected a preferred reform package, we will consider whether and how to modify the licence obligations and the industry codes. For example, we will consider including service requirements for DCC to manage the implementation and ongoing operation of the CRS.

5.14 If we were to place additional licence obligations on DCC in respect of the design, build and test and operation of the CRS, then we would need to put in place a price control framework to regulate DCC's revenue for any of their activities during those phases of the new switching arrangements. The price control framework could include a structure for risk-sharing between DCC, consumers (via DCC service users), and the third-party service providers DCC would contract with to implement and operate the new CRS. A risk-sharing structure could be shaped by different design features including:

- timing of our decisions on DCC's revenue allowances (eg ex ante or ex post decisions)
- length of time the price controls will be in place for
- any mechanisms for accommodating uncertainty in DCC's revenue requirements during the price control periods
- any performance incentive regime which makes any achievable rate of return to DCC contingent on its performance and/or performance of the third party service provider(s) it has contracted with for the CRS.

5.15 We expect to further develop our thinking on the features and overall risk-sharing structure on an iterative basis following selection of a preferred reform package. We would develop this thinking as part of the Commercial Workstream of the programme, involving stakeholders through our programme governance prior to formal consultation.

6. Outline financial case

Chapter summary

The outline financial case sets out the funding arrangements that are in place for the programme and our initial view of the additional arrangements that would be required to deliver the Switching Programme.

6.1 The development, delivery and operation of the switching arrangements described in each of the reform packages would require expenditure from key stakeholder groups. It is important that these spending needs are affordable and that there is a clear mechanism for funding.

6.2 In the outline financial case, we set out the arrangements for funding the potential capital and revenue requirements of the programme. We cover:

- financial implications of the reform packages for stakeholders
- funding arrangements for different stakeholders
- commitments from stakeholders to support the programme
- regulatory levers available for external funding requirements.

Financial implications of the reform packages

6.3 The high-level design of each of the packages has been developed in the Blueprint Phase of the programme through workgroups with representation from parties to the codes in scope of the switching significant code review (SCR).[60] There has also been representation from other stakeholders such as consumer bodies. The workgroups have required resource contribution in the form of meeting attendance, and the development or review of products outlined in appendix 5 of this document. We expect this involvement to continue as the detailed design work is carried out, albeit under an adapted programme governance structure.

6.4 The main costs of developing the new switching arrangements are currently being met by Ofgem, industry code administrators and the Data and Communications Company (DCC). These parties along with industry trade bodies have provided dedicated resource to the programme design teams while a central Ofgem programme team has been in place to lead and manage the programme. Forecast costs to support the programme in developing the new switching

[60] For example, gas and electricity suppliers, network companies, gas shippers, DCC.

arrangements provided to date by Ofgem, code administrators and DCC are set out in table 1 below.

Table 1

Party	**Budget 2016/17 (£k)**	**Budget 2017/18 (£k)**
Ofgem	£1,707	£1,870[61]
DCC[62]	£6,642	£9,483
Industry code administrators	£1,186	£1,880[63]
Total	**£9,535**	**£13,233**

6.5 Once the switching arrangements have been designed in detail for the chosen reform package, one-off implementation expenditure and ongoing operational expenditure will be required to deliver the reliable and fast switching arrangements. We expect the type and level of expenditure to differ according to stakeholder group, and the reform package under consideration. The key stakeholders that would have implementation and operational expenditure requirements are:

- gas and electricity suppliers and their agents
- supplier agents
- gas transporters (GTs), electricity distribution network operators (DNOs) and their agents
- DCC
- code administrators.
- Ofgem

[61] The Switching Programme has been approved within Ofgem as a multi-year project on the basis of the forecasts above. The budget for financial year 2017/18 has been agreed in principle but is subject to internal approval.
[62] DCC budget figures represents DCC's total estimated costs to the industry in 2016/17 and 2017/18, as set out in Table 1 of their draft business case and subject to Ofgem's November 2016 consultation (as described further below in this chapter). DCC's estimated costs to the industry from 2016/17-2020/21 in their draft business case totalled £30.1m.
[63] All budgets for 2017/18 are indicative and pending approval from the respective code administrator boards.

Gas and electricity suppliers and their agents

6.6 Gas and electricity suppliers would need to invest in adapting their internal systems and business processes, and their communications with industry systems to implement the changes described in any of the reform packages. This would include investment in changing and testing the functionality of their internal data management and communication systems and retraining their staff.

6.7 We would also expect ongoing impacts on these parties' operating costs, both positive and negative. For example, cost-savings may be achieved through increased automation and availability of their internal systems and alignment in processes between gas and electricity. Cost increases may occur through an increase in the incidence of exceptions or an increase in the resource allocated to preventing exceptions which could have greater impacts under the reforms if they materialise than under the status quo arrangements.

6.8 Other parties may face similar financial implications due to their relationships as service providers to suppliers. For example, third-party intermediaries (TPIs), metering agents and gas shippers contracted to suppliers.

6.9 For all these parties, we expect the requirements to be able to participate in new switching arrangements to have greater financial impacts on their businesses in Reform Packages 2 and 3 compared with Reform Package 1.

Gas transporters, electricity distribution network operators and their agents

6.10 All of the reform packages also have financial implications for GTs and the electricity DNOs. These licensees are currently responsible for registering and processing changes in the contracted supplier for meter points and providing or contributing to the provision of related industry enquiry services. In gas, these services are currently provided by a central data services provider called Xoserve, on behalf of the GTs. These companies would be required to make changes to the functionality of the central systems and business processes that support the current switching processes in electricity and gas respectively.

6.11 In Reform Package 1, the existing systems for switching the retail supply of meter points would be maintained. In electricity, these systems are managed by the different DNOs for their respective regions, and in gas, they are managed centrally by Xoserve. The related enquiry services would also continue to be managed by existing providers (Xoserve in gas, and the Master Registration Agreement code administrator in electricity) in this reform package. Investment would be required to capture additional data items within these systems, enhance their operational service capability, and to engage in data quality improvement activities. DNOs and GTs may also have to invest in adapting the functionality of their internal systems where there are knock-on impacts of the industry system change.

6.12 In Reform Package 1, we expect there to be both positive and negative impacts on ongoing operational costs. For example, the introduction of new data items to the switching systems provided may lead to an increase in operating costs

to maintain this functionality. It may also lead to cost-savings through a reduction in resource allocated to resolving customer and industry enquiries caused by incomplete or inaccurate switching data.

6.13 In Reform Packages 2 and 3, DCC would procure, and a licensed body, currently also expected to be DCC, would be responsible for the management of a new central switching service (CSS), and in the case of Reform Package 3 this could extend to a market intelligence service (MIS). These packages would also require systems changes to the DNO and Xoserve-managed registration systems to facilitate interfacing with the new CSS and MIS respectively.

6.14 The majority of the functionality and operating requirements of these systems would still be required. However, some components of the current services would be retired. For example, the customer enquiry helplines for meter point number and supplier identity and the functionality to process switching requests. We would expect this to lead to a reduction in the operating costs over time for the DNOs and Xoserve.

Funding arrangements

Gas and electricity suppliers and their agents

6.15 Suppliers and their agents (metering agents, TPIs) operate in competitive markets with free entry and exit and price-setting ability subject to specific regulations. No changes are planned to direct revenue regulation of these parties through the programme. Therefore, these parties would be expected to fund any necessary changes through sales revenue and discretionary capital raising activities.

Gas transporters, electricity distribution network operators and their agents

6.16 The GTs and electricity DNOs hold monopoly positions in the energy industry, and so we regulate their revenues through price controls. Price controls are a method of setting the amount of money (allowed revenue) that the companies can earn over a specified time period. These companies recover their allowed revenues from their charges to industry parties which are ultimately paid for by consumers. We must set the revenues at a level which covers the companies' efficient costs and allows them to earn a reasonable return subject to them delivering value for consumers and achieving performance targets we set.

6.17 We set allowances for GTs (referred to as RIIO GD1)[64] in 2013 and for electricity DNOs (referred to as RIIO ED1) in 2015, for an eight year period. These allowances factor in the current obligations on GTs to provide a supply point registration service and to provide or contribute to a related industry enquiry service.

[64] Revenue = Incentives + Innovation + Outputs.

These allowances will be reviewed in 2021 for gas and 2023 for electricity to set the subsequent price controls.

6.18 In electricity, there are mechanisms for DNOs to recover more or less revenue for (i) particularly uncertain cost-drivers (eg revenue requirements linked to particular service usage volumes), (ii) index-linked costs, or (iii) pass-through costs. These mechanisms are built into the allowed revenue formula but do not cover the specific services the DNOs provide to support switching. The revenue allowances for certain cost items can be reviewed during the price control period. We set the review points for most items but they can occur at any time for some cost items, subject to a prescribed trigger event occurring. The switching service provided by the DNOs is not included in the scope of these cost-specific revenue allowance reviews. There is potential for a mid-period review as part of the RIIO ED1 price control, however, this review is restricted to cover material changes to existing outputs.

6.19 The scale of the expected financial impacts on DNOs of the changes proposed in the shortlist of reform packages is minimal (relative to their overall expenditure requirements). Therefore, we do not expect the financial implications of the programme's reforms on DNOs to qualify for any of the categories for revising the allowed revenue allowances prior to 2023. The actual expenditure DNOs incur will feed into the base revenues and investment amounts calculated for the purposes of setting subsequent price controls. These companies may fund the shortfall through discrepancies between their allowed revenue and actual expenditure on other cost items, and/or through their retained earnings. Any reasonable cost-savings or cost increments compared with price control allowances set could be shared between consumers and DNOs on an equal basis annually.

6.20 Independent electricity distribution networks own and operate smaller networks located within the areas covered by the DNOs. They are mainly extensions to the DNO networks serving new housing and commercial developments. We regulate the amounts that independent distribution network operators (IDNOs) can charge their customers for using their networks via a 'relative price control'. This allows IDNOs to recoup revenue up to the equivalent DNO charge regulated through RIIO ED1.

6.21 In gas, a broadly similar regime is in place to that in electricity. Uncertainty in the GTs' efficient revenue requirements is accommodated through uncertainty mechanisms, as described above. However, in gas, Xoserve operates as an agent of the GTs providing centralised information and data services to the wider industry on their behalf. Xoserve's services are currently funded through allowances in GTs' price control settlements. Xoserve's funding, governance and ownership arrangements were under review at the time of setting the initial RIIO GD1 revenue allowance in 2013.

6.22 A one-off review of the allowance in GTs' price control settlement for Xoserve's services was expected and accounted for through an uncertainty mechanism in the RIIO GD1 framework which could occur at any time during the price control period. We decided in October 2013 that a full co-operative governance model should be established for Xoserve which includes funding arrangements on a "user pays" basis (whereby all industry users of Xoserve's services jointly fund

Xoserve's activities).[65] To reflect this, in September 2016 we reduced the RIIO GD1 allowance for Xoserve services, which will take effect from April 2017.[66] Approximately 70% of Xoserve's related costs are now set in the GTs' allowances until 2021, to reflect the proportion that will be paid by GTs based on the user pays principle. However, we have committed to reconsidering its position to retain Xoserve's costs within GT allowances for future price controls. It may consider treating Xoserve's costs as pass-through for GT revenues in future, based on the industry's performance in creating an efficient cooperative governance model for Xoserve from April 2017 onwards. This could give flexibility for changes in the scope of Xoserve's services to be fully reflected in the costs to consumers during price control periods.

DCC

6.23 DCC also holds a monopoly position in the energy market and we regulate its revenues through price control. The price control for DCC's role in providing smart meter data and communication services covers the implementation and operation of these services. In contrast, the price control arrangements for DCC's role in supporting the Switching Programme do not cover the implementation and operation of new switching arrangements given the early stage of the programme. If either Reform Packages 2 or 3 are preferred, we will develop further proposals for DCC's funding arrangements and expect to publish these as part of Design Baseline 2 and the outline business case for the Switching Programme. These proposals will cover the price control framework for DCC's revenues and the charging framework for distributing DCC's costs of its services amongst industry parties for any activities it carries out during the Design, Build and Test and live operation phases of the new switching arrangements.

6.24 DCC's smart metering and switching price control arrangements are based on an ex post principle. This means DCC estimates its required efficient expenditure for the year ahead to fulfil its licence obligations and passes these on in the form of service charges to its users. We review its incurred costs in the year following that regulatory year in which they were incurred. We can decide to disallow some of the revenue DCC has gained to cover inefficient spending. These decisions and any forecasting error DCC has made in estimating its efficient expenditure needs for the year ahead are reconciled with the revenue DCC actually receives through adjustments in its charges to users in subsequent years.

6.25 As described in the outline commercial case (chapter 5 of this document), we introduced licence obligations on DCC to support the Switching Programme in May 2016. These cover DCC's activity to support the design and identification of requirements for the new switching arrangements and Centralised Registration Service (CRS), and to procure a new CRS through competitive tender on direction from Ofgem. Alongside licence obligations, we modified the scope of DCC's allowed

[65] Ofgem, Xoserve - decision in relation to new funding, governance and ownership arrangements for the gas transporters' central agent, October 2013.
[66] Ofgem, Decision on its review of gas transporter agency (Xoserve) costs in RIIO GD1 and T1, September 2016.

revenue to include economic and efficient expenditure required to discharge these obligations. DCC is therefore able to charge industry parties for this expenditure. It does so according to charging principles set out in its licence and a methodology set out in the Smart Energy Code (SEC).

6.26 The price control arrangements in place to cover DCC's activities under these switching licence obligations involve additional reporting requirements on DCC compared to its smart metering price control. We refer to this as an 'ex post plus' price control. Under these arrangements, DCC is obliged to set out a plan of activity and justify its forecast costs in an upfront business case. This is intended to give stakeholders transparency of its projected activity and forecast costs. For price control purposes, we will continue to review DCC's costs for efficiency after the end of the regulatory year after they are incurred and make decisions on its allowed revenue.

6.27 DCC is also obliged to report regularly to the programme within each regulatory year on its incurred costs and delivery progress and its updated forecast costs and planned activity. This regular reporting will be done in relation to a version of the DCC business case and programme plan which have been agreed by the programme as a suitable baseline for financial and delivery reporting to the programme.

6.28 We consulted on DCC's draft business case in November 2016 and will suggest changes based on stakeholder views, and further development of the programme for DCC to reflect in an updated version of the business case in March 2017.[67] This version will be the first baselined version, and is expected to reflect the reform packages described in chapter 4 of this document. DCC will update and re-baseline its business case in line with the preferred reforms put forward in our next version of this business case for the Switching Programme. We also consulted on the reasonable rate of return DCC should be able to earn for its design and procurement role in the Switching Programme.[68] It has proposed that part of DCC's achievable margin should be subject to meeting its performance in meeting certain delivery milestones to a required quality by a set date.

Code administrators

6.29 The code administrators for the industry codes in scope of the switching SCR[69] are funded by code users (including suppliers, gas shippers, network companies and DCC). Their budgets are typically set and approved by the code panels or a forum or

[67] Ofgem, Consultation on draft DCC business case for DCC activities during the Transitional Phase of the Switching Programme, November 2016.
[68] Ofgem, Minded to position on margin and incentives for DCC's role within the Transitional Phase of the Switching Programme, November 2016.
[69] Uniform Network Code, Supply Point Administration Agreement, Master Registration Agreement, Distribution Connection and Use of System Agreement, Balancing and Settlement Code and Smart Energy Code.

committee that represents their funders, the code parties.[70] Under some codes, we have a role in settling disputes over code administrators' budgets.

6.30 The charging mechanisms for the code administrators recovering these costs are generally specified in the codes themselves. In the case of the Smart Energy Code Administration and Secretariat, code administrator for the SEC, its costs are recovered by DCC charging a fixed amount to SEC parties and these costs are treated as pass-through under the price control. In the case of the Uniform Network Code, the administrator's costs are paid for by gas transporters under their price control, though an element of the user pays principle is applied in relation to certain code modifications.

6.31 We are reviewing industry code governance as part of implementation of the Competition and Market Authority's recommendations. The scope of this work programme includes considering the licensing and tendering for code manager roles, setting up a consultative board to help facilitate the delivery of cross-cutting code changes and Ofgem setting the strategic direction for codes.[71] As part of this licensing and competition workstream, we will consider the funding arrangements for the new code manager and delivery body. We are due to consult on further policy proposals for this workstream in 2017, with a view to finalising policy in 2018 and carry out initial tendering in 2019.[72]

Ofgem

6.32 Ofgem is funded via fees levied on licensed companies subject to agreement from HM Treasury on its overall annual revenue. Decisions made within Ofgem to allocate its budget to specific projects and work programmes are made on an ongoing basis by the Portfolio and Investment Board. These decisions are made on the basis of a business case submitted by project or programme teams which include activity planning in support of a budget proposal.

Stakeholder commitments

6.33 In November 2015, alongside launching the SCR, we invited stakeholders to express interest in participating in design working groups and senior advisory groups of the programme. These groups have full membership and members agreed to terms of reference outlining their responsibilities to provide input to the groups they are part of.

6.34 We have also convened a senior steering group chaired by Ofgem's chief executive officer, consisting of executive-level or equivalent representatives from

[70] Elexon, the code administrator for the Balancing and Settlement Code (BSC) is an exception.
[71] Ofgem, Industry Code Governance: Initial consultation on implementing the Competition and Markets Authority's recommendations, November 2016.
[72] The timing of the licensing and competition workstream will be heavily dependent on legislation being introduced to make code administration a licensable activity.

energy supply companies, network companies, DCC and consumer bodies. Through this group, energy suppliers have committed to nominating a senior accountable person who will be accountable for delivering the switching reforms and all stakeholders committed to provide resources for the programme's industry workgroups.[73] The Switching Programme Delivery Group[74] is another senior-level forum in the programme. Its members have agreed to provide high-level support to the Switching Programme, drive forward progress and resolve delivery issues.

Regulatory levers

6.35 There are a number of regulatory levers available to formalise commitments made by stakeholder groups to support the programme in principle, if required to address potential funding gaps. For suppliers and network companies, we can introduce licence conditions for suppliers to facilitate reliable and fast switching in the model designated by the programme. Under the SCR process regulating the industry's operations with new switching business rules, we can also direct licensees to raise code modifications or raise code modification proposals ourselves. Non-compliance with licence conditions and code regulations can lead to us taking enforcement action, which could result in financial penalties, enforcement orders or licence revocation.

6.36 In addition to these levers, we can adjust the revenue allowances of DNOs, GTs, and DCC to reflect the scope and volume of outputs the monopolies are providing and their performance standards. We intend to amend DCC's licence to cover any obligations it has during the Design, Build and Test and live operation phases of the programme and allow it to recover revenue related to its efficient expenditure in these phases.

6.37 Code parties (eg suppliers, networks and DCC) might choose to discharge their code requirements related to switching through code administrators. There are currently no direct levers available to us to control code administrators' funding. However, our code governance review programme may introduce new levers through licence obligations and potentially contractual terms for some code administrator roles.

[73] Ofgem, Switching Senior Stakeholder Group.
[74] This is used to monitor progress and agree actions required to mitigate major risks and resolve issues that could affect the successful delivery of the reforms.

7. Outline management case

Chapter summary

The outline management case sets out our initial view of the governance and assurance arrangements that are necessary to ensure the successful delivery of the Switching Programme.

7.1 Moving to reliable and fast switching is likely to require substantial changes to current industry systems and processes. If not managed effectively, the changes involved could have a negative impact on consumers' experience of switching, as well as related industry processes such as billing, balancing and settlement. There could also be increased risks of delays and additional costs.

7.2 Below we set out the arrangements we think are needed to effectively oversee the Switching Programme over the coming phases to minimise risks to delivery that are inherent in a large-scale programme of IT systems change such as this. We cover:

- key programme management considerations
- management strategy overview
- approach to stakeholder engagement
- risk mitigation activities
- our use of specialist advisers.

Key programme management considerations

7.3 To deliver the programme quickly for consumers, work on systems and process design, regulatory requirements, commercial arrangements and delivery planning will progress in parallel. Each of these areas will need to be carefully planned individually, and function together as a coherent package.

7.4 At this stage of the programme, we are keeping a number of reform options open so that their costs and benefits can be fully assessed before making a decision on which one represents the best value for money for consumers. Were we to wait until we decide which reforms to pursue this would mean that a significant amount of detailed specification work would be postponed, delaying the time when consumers see the benefits of changes to the switching arrangements. Equally, designing detailed specifications for all options would mean we are at risk of doing a significant amount of nugatory work.

7.5 Having the right governance structures, reporting requirements and communication channels in place will be an essential part of successful delivery. Blueprint-level decisions will be made that will have a knock-on impact for detailed specifications. Additionally, when any new systems and processes are being built, we may identify areas where the design should be amended. We will need to develop options to address new issues such as these, and escalate them through appropriate channels for consideration, before changes are agreed and updated information provided to relevant parties.

7.6 Coordinating the changes required to deliver reliable and fast switching arrangements in a multi-party environment will be challenging, particularly when other large-scale programmes of change, such as the smart meter rollout and settlement reform, are also underway.

7.7 As the switching arrangements are integral to the successful operation of the retail energy market, all relevant parties must have confidence that the new arrangements will work when they go live. If effective testing and assurance mechanisms are not in place, the new arrangements may not function as intended. This could have negative consequences for other industry functions, such as balancing and settlement, and have long-term damaging impacts on consumer confidence in the switching arrangements.

7.8 The programme reforms will affect the operations of a large number of stakeholders. Maintaining the engagement of these stakeholders over the course of the programme will be a challenge. Additionally, detailed understanding of different aspects of the switching processes, knowledge of regulatory requirements and expertise in large-scale programme delivery are likely to sit in a range of different organisations. We want to make sure we have the right expert resource involved in the programme so that the final design, delivery approach, commercial arrangements and new regulatory framework are fit for purpose. We also want to make sure that strong, industry-wide commitment to the programme is maintained throughout its various phases.

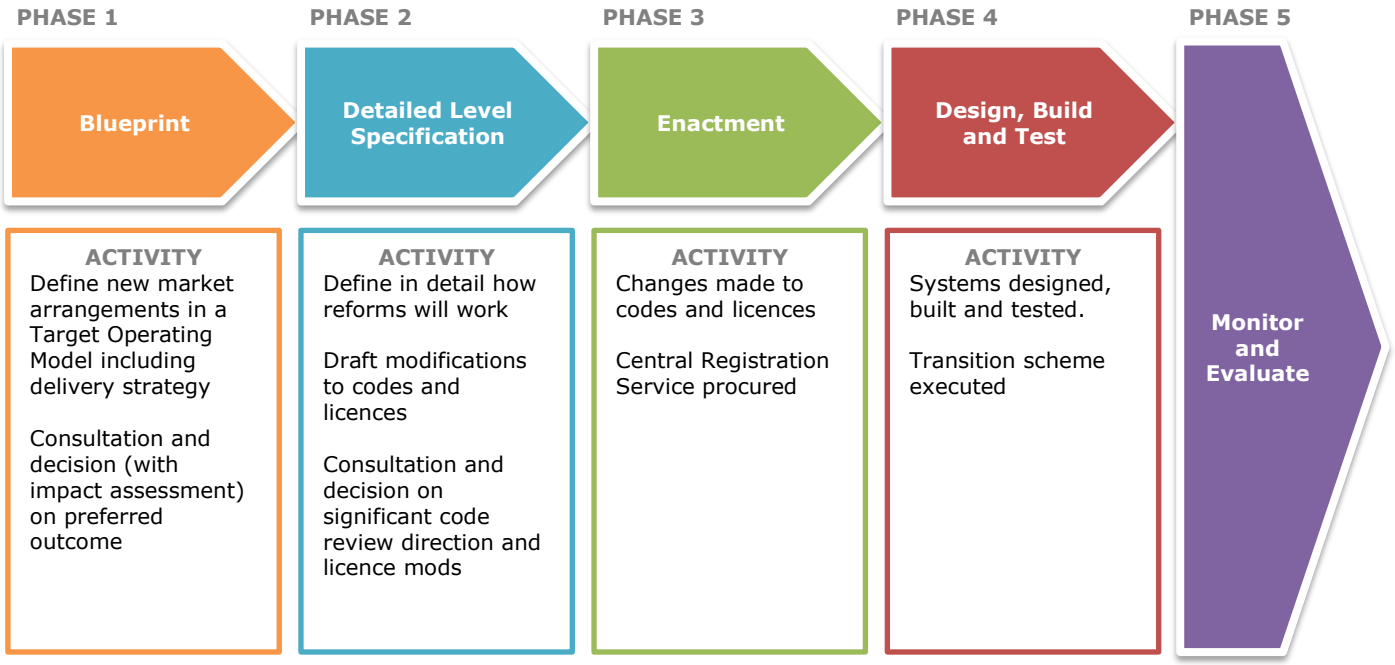
Management strategy overview

7.9 Our management strategy for the programme will in part depend on the reform package we pursue. As we are not making a decision on the chosen reform package at this stage it would not be appropriate to finalise our approach to managing all of the risks and issues outlined above. However, to ensure we are managing those risks we can control at this stage, and to make sure we take a proactive approach to managing the programme throughout its duration, we set out our current thinking below.

7.10 We are conducting the programme in five key phases, which are shown in figure 6. During the Blueprint phase we will determine the high-level system and process design, and delivery strategy for the new switching arrangements. We will define the new switching arrangements at a more granular level, and commence licence and code modification processes during the Detailed Level Specification (DLS) phase. These licence and code modifications will be delivered during the Enactment phase, and any new systems introduced as part of the programme will be procured.

The Design, Build and Test (DBT) phase of the programme will then commence, during which changes to the switching arrangements will be delivered by industry parties. Following this, we will monitor and evaluate the impact of the programme changes.

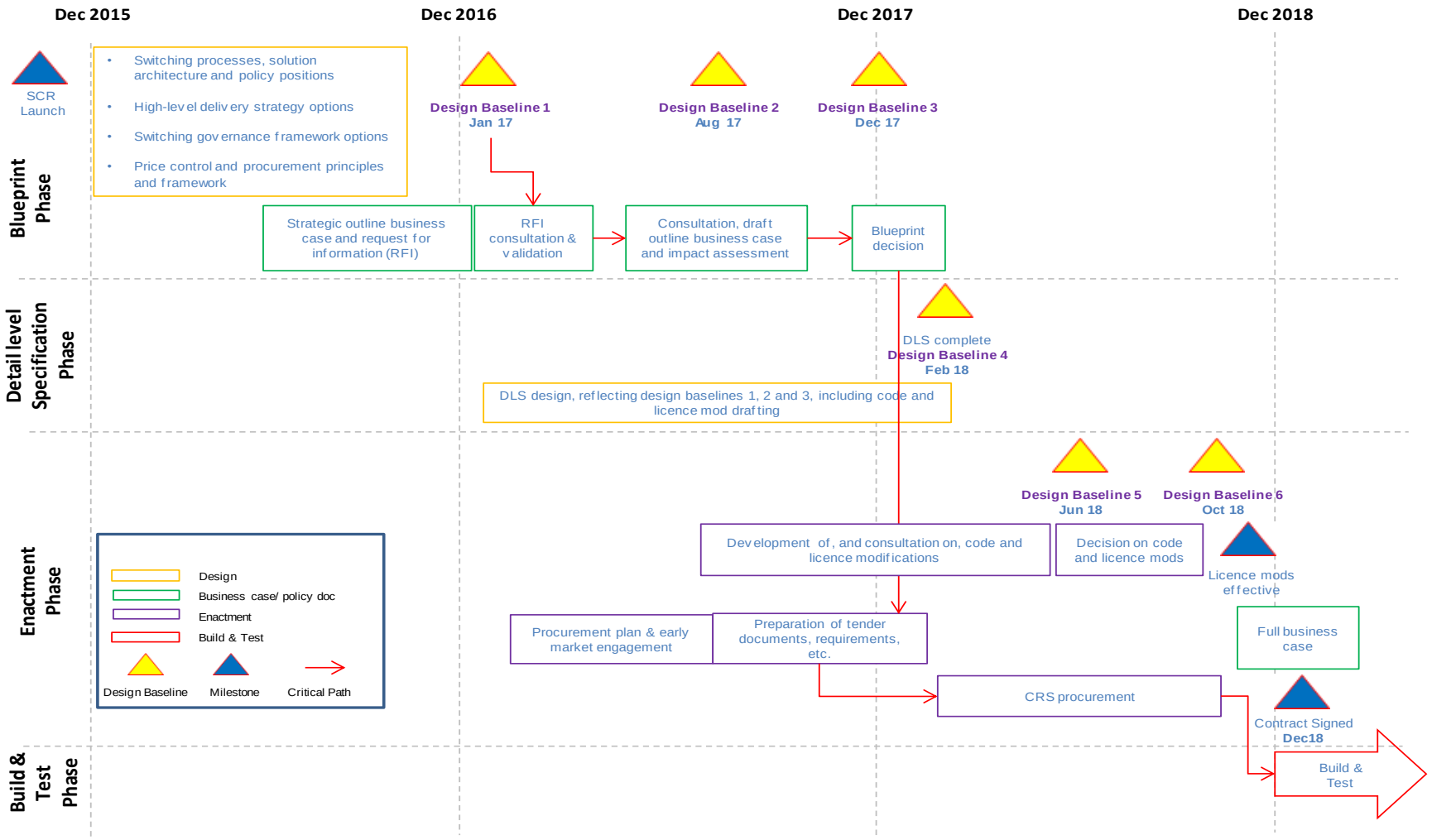
Figure 6: Switching Programme phases



7.11 The programme phases will operate in parallel in some cases. We want to make progress on the design of the new arrangements wherever we can in order to deliver the benefits of programme changes to consumers as soon as possible. Equally, we want to minimise the risk of doing nugatory work. To balance these two aims we intend to proceed with detailed specifications of the new arrangements on the basis of Reform Package 2 being chosen. This does not imply that this is the favoured approach. It is a least regrets planning approach that will allow us to progress our design work so as to have the least impact on overall programme timescales, while minimising the risk of doing nugatory work. Once we have fully analysed the responses to the request for information we will revisit this assumption and adapt the scope of work accordingly, by late spring.

7.12 The current programme plan is included in figure 7 below. This reflects our currently expected timetable up to the end of the Enactment phase of the programme. We are currently undertaking a detailed planning exercise covering the DLS and Enactment phases of the programme. This will inform a revised programme plan, which we expect to publish by the end of March 2017, at the same time we baseline the Data Communications Company (DCC) forecast programme activities. We do not propose definitive delivery dates for programme changes at this point. We intend to propose delivery dates as part of a consultation we expect to publish in August 2017. We will continue to challenge the programme timelines on an ongoing basis to ensure we deliver change as soon as possible.

Figure 7: Switching Programme plan



7.13 Through our programme management we want to ensure:

- the design of any new switching systems and processes delivers the objectives of reliable and fast switching[75]

- the design of any new switching systems and processes is robust so that they function as intended, and align with other non-switching-related systems and processes

- each individual affected party understands in sufficient detail what the design means for them in terms of changes required and service capability

- we have the right mechanisms in place to allow any areas where the design is incorrect or unclear to be identified, corrected and clarified, and updated information disseminated to all relevant stakeholders

- all relevant parties have confidence that the new arrangements will work before moving to live operation

- a robust testing regime is put in place with clear entry and exit criteria, through which parties can check that their own systems and processes are functioning as intended, and that individual systems can communicate with others

- a clear set of governance and decision-making arrangements is established, along with clear escalation thresholds so that decisions are made at the right level.

7.14 We summarise how we intend to deliver these outcomes in the following sections.

Programme governance

7.15 For the duration of the programme, Ofgem will continue to be project sponsor. We will retain responsibility for ensuring that the consumer benefits of the programme are realised. We will also retain responsibility for overall programme management through to the end of the Enactment phase. However, we intend to gradually delegate responsibility for the design and delivery of certain aspects of the changes to other industry parties. As noted above, the roles we outline here are predicated on the assumption that we will proceed with Reform Package 2. This assumption will be revisited in spring 2017.

7.16 Specifically, in accordance with their licence obligations to contribute to the programme, we intend to give responsibility for the specification of the central

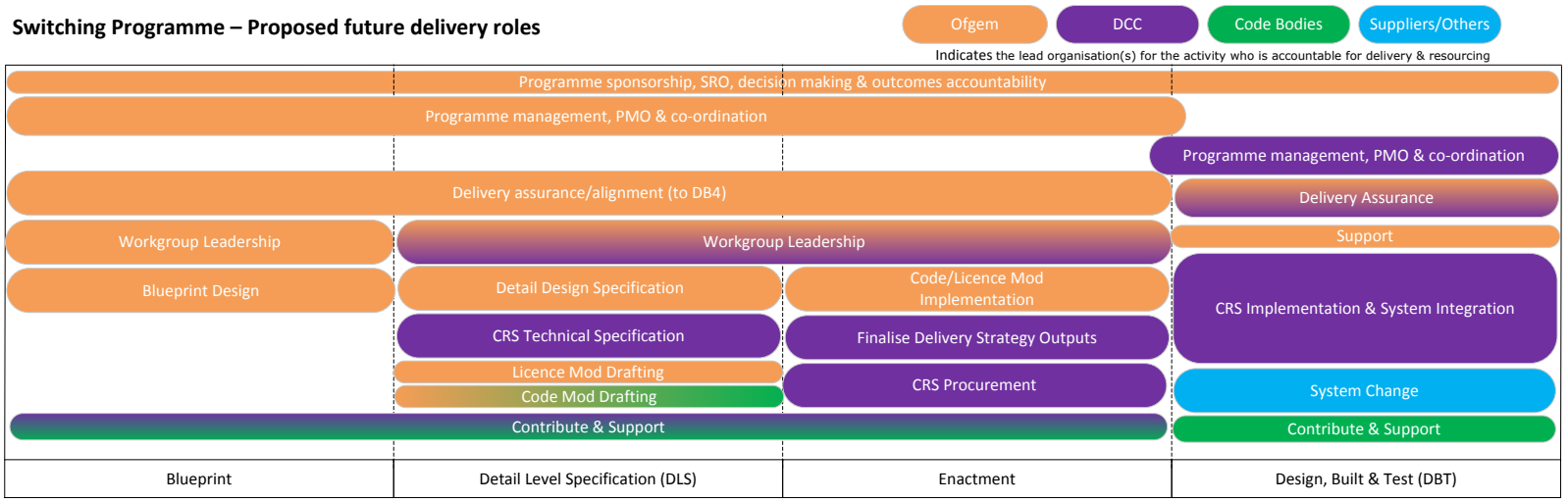
[75] The programme objectives are set out in the strategic case in chapter 2.

switching service (CSS) and, depending on the reform option chosen, the market intelligence service (MIS) to DCC. We also intend to give DCC responsibility for finalising the programme delivery strategy. From the start of the DBT phase we intend to pass day-to-day programme management responsibilities to DCC. We consider there are benefits in giving responsibility for the specification and delivery approach of any new systems introduced as part of the programme to the organisation that will ultimately be responsible for their procurement.

7.17 We also intend to assign responsibility for some aspects of industry code drafting to code administrators during the DLS and Enactment phases. We will, however, continue to lead and coordinate the code modification work overall, and ultimate decision-making on code drafting will remain with Ofgem.

7.18 A summary of the envisaged roles and responsibilities of different parties is included in figure 8 below.

Figure 8: Switching Programme future roles and responsibilities



Description	Summary & Key Issues
• Ofgem remain responsible for and lead (with industry support) detail design. • Delivery responsibility for CRS technical specification, procurement & completion of Delivery Strategy outputs delegated to DCC. • Ofgem retain delivery responsibility for and lead and co-ordinate code modifications work but delegate the delivery of drafting code changes to relevant code bodies. • Workgroups created with industry but led by Ofgem/DCC	• Responsibility for CRS specification and transition falls to the body responsible for its procurement & operation. • Ofgem retain control of code modification work but changes are delivered by industry. • Requires code body acceptance to take on activity • Increased effort to ensure co-ordination & alignment of activity in DLS

Activity	Ofgem	DCC	Code Admin	Industry	SRO/Programme Board / Design Authority
Delivery Assurance/Alignment	R	C I	C I	I	A
Planning & Programme Management[1]	R	C	C	I	A
Detail Design Specification	R	C S	C S	C S	A
CRS Technical Specification	C S	R	C S	C S	A
Code/Licence Mod Specification & Drafting	R	C S	C S	C S	A
Code/Licence Mod Implementation	R	C S	C S	C S	A
Finalise Delivery Strategy	C S	R	C S	C S	A
CRS Procurement	C I	R	I	I	A
CRS Implementation	S I	R	S I	C I	A

R – Responsible A - Accountable[2] C – Consulted S – Support I- Inform

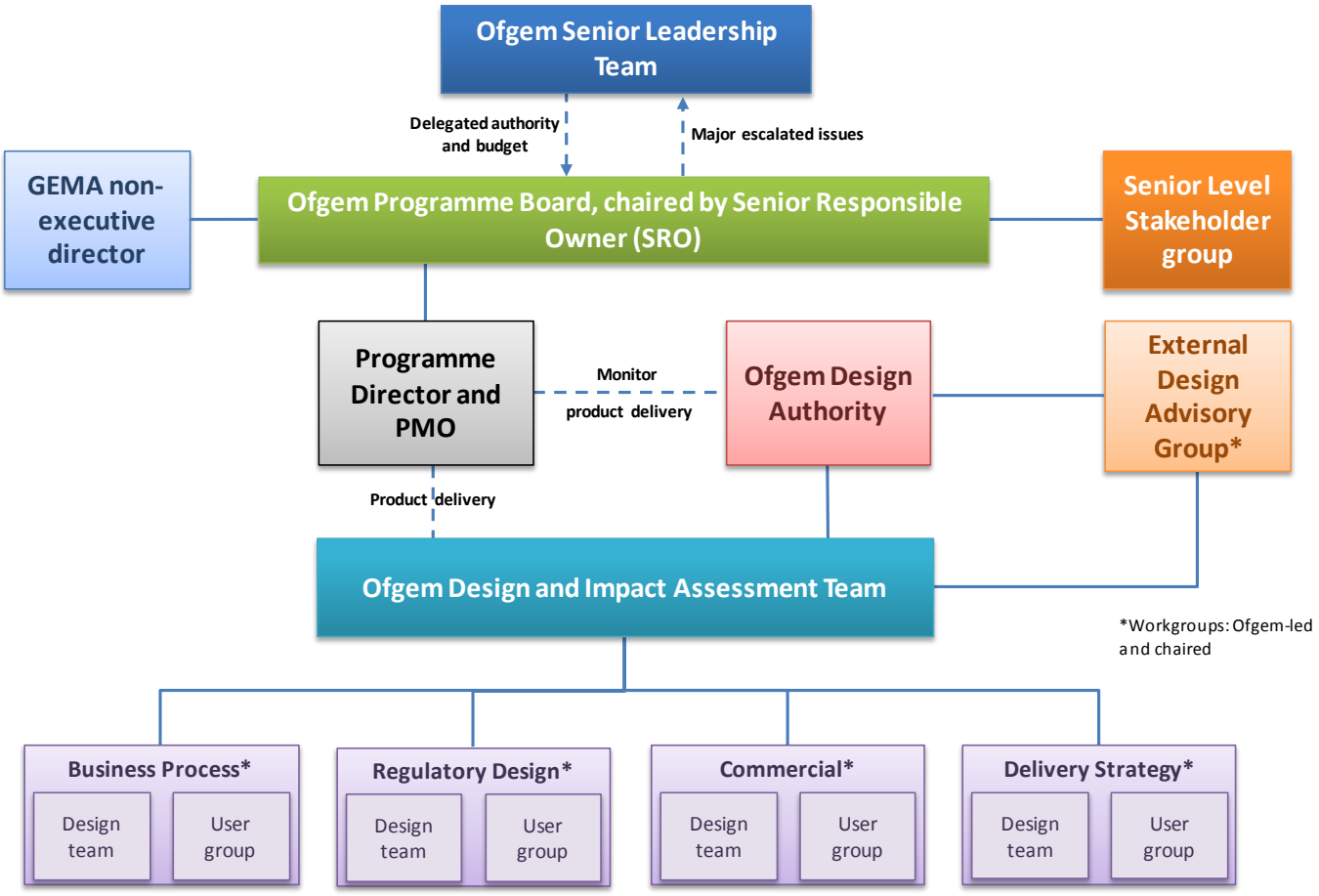
[1] - Planning & Programme Management Responsibility transfers to DCC for DBT Phase.

[2] - Accountability for overall programme, R indicates responsibility for delivery and accountability to SRO

Blueprint phase governance

7.19 The governance structure for the Blueprint phase is summarised in figure 9 below, followed by a high-level description of the role of each group. The working groups within this structure were convened at the end of 2015 to develop the blueprint for the programme.

Figure 9: Switching Programme Blueprint phase governance structure



- **Design teams and user groups**: The Blueprint phase work has been split into four workstreams: Business Process Design, Regulatory Design, Commercial, and Delivery Strategy. Each of these workstreams consists of a design team, responsible for developing proposals for how various aspects of the new switching arrangements could be designed, and a user group made up of a broad range of industry representatives, who critically assess these proposals.

- **Ofgem Design and Impact Assessment team**: This team provides support to the Ofgem Design Authority, oversees day-to-day development of the blueprint and coordinates the outputs of the workstreams to ensure they are consistent and robust. This team also leads the development of the impact assessment for the programme changes.

- **External Design Advisory Group**: This group provides input from across the industry on the overall design of the new arrangements, and advises on links and dependencies with other related industry functions and change projects. This group reviews all key policy issues prior to their escalation to the Design Authority.

- **Ofgem Design Authority**: The Design Authority has owned the development of the blueprint for the programme to this point. They were responsible for making decisions, within agreed tolerances, on policy, process and other issues that would make up the design baseline for the programme. From this point of the programme onwards, any Blueprint phase decisions will be made by the Programme Board.

- **Programme director**: The Ofgem programme director is responsible for the delivery of the programme against the plan. They identify and escalate any issues relating to programme progress, eg on funding and resourcing, to the Programme Board for decision.

- **Switching Programme Delivery Group**: The delivery group provides high-level industry support to the programme, ensures it maintains momentum and addresses any delivery issues. The group assesses progress against the programme plan, identifies and mitigates any risks by agreeing actions to be taken forward by Ofgem or other programme participants. They also provide input to the programme manager on the overall direction of the programme.

- **Switching Programme Steering Group:** The steering group brings together senior stakeholder representatives in order to maintain industry support for the programme. The role of this group is to keep the programme on track for successful delivery by maintaining industry commitment, support and resource.

- **Ofgem Programme Board:** The board is chaired by the SRO, who has decision-making authority across the programme. The board is responsible for advising the SRO and approving the programme's progression from one phase to the next. It is also responsible for approving any policy decisions and key deliverables relating to the design baseline and impact assessment that sit beyond the Design Authority's agreed tolerances.

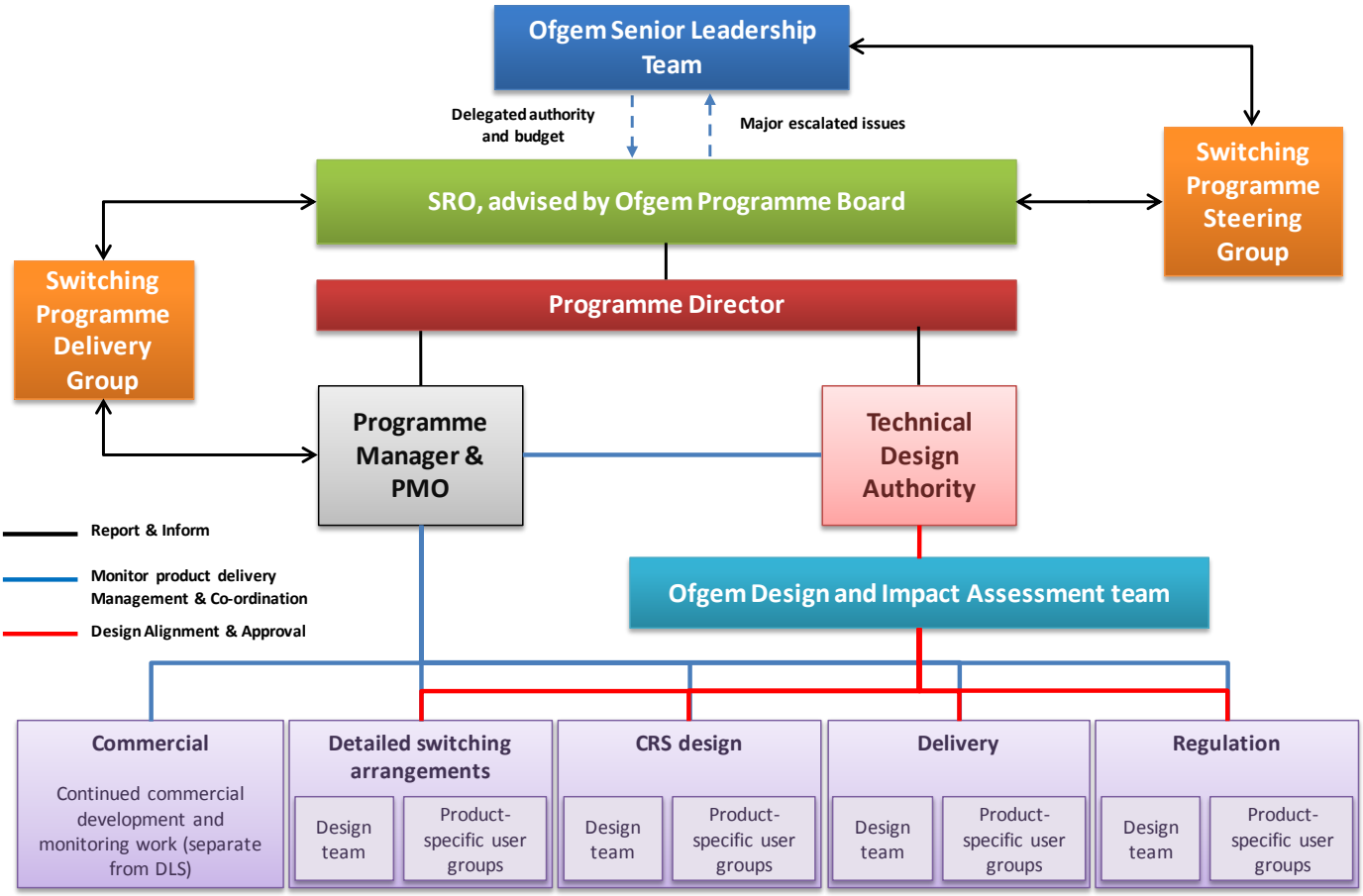
- **Ofgem Senior Leadership team:** Ofgem's Senior Leadership team and the Gas and Electricity Markets Authority are kept informed of programme progress at regular intervals and are asked for a steer on any key programme issues as the need arises. The Senior Leadership team is responsible for approving the annual budget for the programme.

7.20 All of the groups within this structure have been instrumental in getting us to this point, enabling us to share a robust design baseline to form the basis for a cost-benefit analysis of the options that have been developed. This structure will evolve for the DLS phase of the programme that will shortly commence. As the Blueprint phase will not formally end until we have made a decision on the chosen reform option, we will mobilise parts of this existing structure to provide input where appropriate over the coming year.

DLS phase governance

7.21 The work of the programme during the DLS phase is likely to be more technical in nature. We are adapting the governance structure to reflect this, as shown in figure 10 below.

Figure 10: Switching Programme Detailed Level Specification phase governance structure



7.22 The governance structure for the programme DLS phase will remain similar to that established for the Blueprint phase. However, to reflect the more detailed nature of the work, we have made two notable changes:

- **Design teams and user groups:** For the DLS phase, the existing Business Process Design workstream will be split into two separate strands – the first will focus on the end-to-end switching arrangements and the second will focus on the design of the CSS and, depending on the chosen reform package, the MIS. This is to ensure that the scope of work of the design teams is manageable. These workstreams, while managed separately, will work closely together. There will continue to be workstreams focused on developing the commercial arrangements for the programme changes, the delivery approach and regulatory design. We will continue to convene user groups for each

workstream. As the products developed during the DLS phase will require specialist skills to both develop and critique, these user groups will be convened on a product-by-product basis.

- **Technical Design Authority:** This group will replace the Ofgem Design Authority, and we intend that it will include a relatively small number of experts from different industry participants. They will own the detailed design baseline to be developed during the DLS phase, and will be responsible for ensuring the DLS products align, both with each other and with the overall programme blueprint. They will provide advice and guidance to the workgroups developing DLS products on the design of the switching processes and systems, the delivery approach and regulatory design. The chair of the Technical Design Authority will be a member of the Ofgem programme team and will have decision-making responsibilities,[76] advised by the Technical Design Authority, within agreed tolerances, and escalate any issues that sit outside of these to the Programme Board. They will be supported by the Design and Impact Assessment team, who will continue to perform a similar role, ensuring consistency of products from the individual workstreams, both with each other and with the blueprint design.

7.23 Strong change control mechanisms will be established to ensure that any changes to the design, either at the blueprint or detailed specification level, are appropriately considered prior to being agreed and signed off, and updated information shared with relevant parties. The programme manager will coordinate this process, escalating issues to the Programme Board as required.

7.24 By deploying this governance structure we aim to ensure that the programme is correctly set up to deliver the DLS phase products required prior to the enactment of code and licence changes, and ahead of the commencement of build and test of the new systems and processes.

Future phase governance

7.25 The Delivery Strategy Workstream has developed proposals for roles and responsibilities for the programme's DBT phase.[77] The exact nature of these will depend on the chosen reform package and will be refined during the DLS phase. An important part of these DBT governance arrangements will be mechanisms to allow any elements of the design that are unclear or incorrect to be identified, escalated, options for their resolution developed, and a decision made on the way forward. We have also considered measures that might be needed to incentivise delivery, to minimise that the delivery of programme changes is not delayed to match the pace of the slowest.

[76] To note, the decision-making responsibilities of the Technical Design Authority refer to internal decision-making as part of a collaborative approach to the programme. Formal delegated decision-making responsibility will remain with the Ofgem Senior Responsible Owner (SRO).
[77] We have set out our analysis and proposals for future programme roles and responsibilities in a Delivery Strategy governance and assurance strategy paper, a link to which can be found in appendix 5.

7.26 The Regulatory Design Workstream will ultimately be responsible for determining what the enduring governance framework looks like after the new arrangements move to live operation, and where these governance arrangements are set out. We do not make any proposals for where requirements relating to the new switching arrangements should sit at this stage. However, we have mapped out the benefits and drawbacks associated with several potential candidates, including amending existing codes and creating a new retail code. These early considerations will be developed further during the DLS phase of the programme, and put in place during the programme Enactment phase.

7.27 To deliver changes to the enduring regulatory framework, we intend to launch a consultation to update our significant code review approach this spring. This is currently the best tool available to Ofgem (in conjunction with our licence modification powers) to successfully manage the changes that will be needed to multiple codes and licence conditions. The government has produced draft legislation to give Ofgem enhanced powers to deliver reliable and fast switching. If these powers were provided we would expect to stop the significant code review and use the new powers for the remainder of the process.

7.28 Separately, the Competition and Markets Authority (CMA) has recommended that Ofgem be given greater powers to influence the process for amending industry codes. As part of our code governance reform project we are consulting on proposals to give effect to the CMA's recommendations. We do not expect this work to directly impact our Switching Programme. However, some of the proposed reforms, notably the creation of a cross-code consultative board, could help to support the programme once in place. We will continue to engage with this work as it develops.

Programme assurance and testing

7.29 Through the existing programme governance structure, a wide range of stakeholders from different parts of the industry have had the opportunity to challenge the high-level design. This has been an essential part of our efforts to provide assurance that the design of the new arrangements is robust. It has also helped to involve a broad range of parties, who will ultimately be responsible for operating the new arrangements, early on in the development cycle.

7.30 This process of external involvement and challenge will continue through the programme's DLS phase via user groups and the programme's delivery group and steering group. We consider there are benefits in ensuring that relevant stakeholders are involved in the design stages, so that when the DBT phase commences they are starting with a strong understanding of how the new switching arrangements are intended to operate.

7.31 In cases where expertise in certain areas has not been available either within Ofgem or other contributors to the programme we have brought in additional specialist advisers. These include:

- **Procurement expertise**: for the Commercial Design Workstream we have deployed additional expertise to provide ongoing scrutiny of Ofgem and DCC's early procurement activities, including the jointly-developed procurement

framework. We will continue to deploy external procurement expertise to help us scrutinise the DCC's future procurement activities. This will help to ensure that any new systems meet the programme design specifications and that the process for choosing the organisation to build the systems is robust.

- **Price control incentives**: we have used external consultants to support our development of the incentives framework as part of our Commercial Workstream.

- **Programme assurance**: an external consultant has been dedicated to developing the programme management and planning arrangements for the programme at the outset of the Blueprint and DLS phases. We are also expecting to appoint an external critical friend to the Programme Board to challenge our thinking as it develops.

- **Out-of-industry expertise**: in accordance with their licence obligations to contribute to the programme, DCC has procured consultancy support, part of whose role has been to use their out-of-industry knowledge to challenge our designs for the new arrangements and ensure they reflect any lessons we can learn from other sectors or jurisdictions.

- **Gateway review**: the programme will undergo a gateway review in February 2017. Representatives from government departments will interview a range of individuals from Ofgem, DCC, code bodies and the wider industry. They will assess the current programme management arrangements to ensure the programme as a whole is set up to succeed. They will make recommendations to adjust the arrangements should this be appropriate.

- **Business case specialists**: We have sought advice and training from business case experts in order to ensure that we develop our policy, and thus this business case, in as robust a way as possible.

7.32 The programme structure will undergo review early this year to ensure that we are effectively set up to achieve our objectives. We are engaging with the Infrastructure and Projects Authority,[78] who will provide a gateway review of the programme in February 2017. This review will involve interviews with a wide range of stakeholders to gauge the extent to which they feel effectively engaged with the programme and have sufficient opportunity to provide input.

7.33 In addition to the above activities, we have developed an integrated assurance and approvals plan that consolidates all of the assurance activities associated with the Blueprint phase of the programme and shows how they will be

[78] The Infrastructure and Projects Authority is part of the Cabinet Office and HM Treasury, and provides expertise in infrastructure and the financing, delivery and assurance of major projects, to support effective management and delivery across government.

used to inform key decisions.[79] We are currently developing this plan further to reflect our DLS phase activities.

7.34 We have developed our initial thoughts on what testing arrangements should be put in place for the DBT phase. We want to put in place a robust testing regime, with clear entry and exit criteria, through which parties can check that their own systems and processes are functioning as intended, and that individual systems can communicate with others. To provide assurance that different parties' systems are able to operate in conjunction with those of others we consider there should be a systems integration function embedded within the programme governance structure. This could be a function allocated to the Technical Design Authority, or could be a body procured specifically to oversee the systems integration during the DBT phase. The Delivery Strategy Workstream has mapped out some early considerations of what this role might consist of, though the precise nature of this role will not be defined until we have decided which reform package to pursue.[80]

7.35 We are also considering whether to procure the services of a body to provide independent programme assurance during the DBT phase. This body could oversee market participant reporting on progress, providing a view to the programme manager on the state of readiness and enabling decisions to be made as to whether to progress to subsequent phases of delivery and testing. Again, we do not specify whether this role is necessary, and what it might consist of, at this point. This will be determined once we have made a decision on the reform package to pursue.

7.36 Even with a robust set of testing arrangements, there may be initial difficulties in the period following the rollout of the new systems and processes. An interim set of arrangements between DBT and steady state may be needed, to ensure the right resources, monitoring and decision-making functions can be called upon to address any early implementation issues. We have mapped out some early considerations for this post-implementation period, including maintaining some of the DBT phase governance and assurance arrangements for a period of time after go-live.[81]

Approach to stakeholder engagement

7.37 As highlighted above, through our current and future programme governance structure we aim to make sure that a wide range of stakeholders have the opportunity to review and provide input into the design of the new switching arrangements. The Switching Programme Steering Group, Delivery Group, External Design Advisory Group and user groups are all designed to ensure a wide range of

[79] The integrated assurance and approvals plan for the programme Blueprint phase is included in appendix 5.
[80] We have set out our initial thinking in relation to systems integration in a Delivery Strategy paper, which is linked to in appendix 5.
[81] We have set out our further considerations for post-implementation in a Delivery Strategy paper, which is linked to in appendix 5.

interest parties, at varying levels of seniority throughout different organisations, are all aware of, and have the ability to challenge, our direction of travel.

7.38 However, we recognise that many stakeholders may be constrained in their ability to proactively contribute to the programme. We have attempted to address this by engaging with stakeholders through existing forums, such as Ofgem's Independent Supplier Forum[82] and the regular meeting of Confidence Code-accredited price comparison websites.[83] We also convened a Switching Programme seminar, at which we had a large number of representatives from across the industry.

7.39 We have engaged closely with consumer groups such as Citizens Advice, and the Department of Business, Energy and Industrial Strategy, in regular bilateral meetings to seek views on key policy issues, and to provide updates on upcoming deliverables. We have also provided regular briefings on the programme to code committees.

7.40 In general, our ability to effectively engage with relevant stakeholders will be a key part of the successful delivery of the programme. As the programme is likely to take a substantial amount of time to complete, maintaining stakeholder momentum will be challenging. Forums like the Switching Programme Steering Group and the Switching Programme Delivery Group aim to ensure that senior stakeholder representatives remain bought into the programme throughout its lifetime.

7.41 Where relevant, we have also engaged closely with stakeholders on those deliverables that are likely to be of greatest interest to them. For instance, we have engaged closely with a range of stakeholders as we have developed the request for information issued alongside this document. This was to make sure they understand what we are requesting from them, and also allow them to input to minimise the burden of responding.

7.42 Furthermore, we expect to publish a consultation on our potential reforms in August 2017. This will offer all interested parties the opportunity to provide input on our proposals.

Risk mitigation activities

7.43 Establishing clear governance and assurance mechanisms, and maintaining a strong focus on stakeholder engagement throughout the programme will help to mitigate most of the programme risks outlined in the strategic case earlier in this document. However, we will need to take some further action to tackle the remaining challenges we have identified, which include:

[82] Further information about the Ofgem-BEIS independent supplier forum can be found on our website.
[83] Further information about the Ofgem Confidence Code accreditation scheme can be found on our website.

- our ability to identify the reform option that represents the best value for money for consumers

- complex issues identified later in the programme, which either delay implementation or reduce the period of time available for building and testing the new arrangements.

7.44 In relation to the first of these, we intend to publish an updated business case in August 2017, which will include an impact assessment of the costs and benefits of the reform options. The request for information issued alongside this document will be a key part of our evidence gathering to inform this impact assessment. This will be combined with information from our regular market monitoring and consumer research to build a comprehensive picture of the likely impact of any reforms. This will be published and comments invited from interested parties to ensure proper scrutiny of our proposals. The business case will evolve throughout the duration of the programme and act as a consolidated source of information so that the changes that are delivered represent the best value for money for consumers.

7.45 In relation to the second risk, the programme plan has been designed to provide as realistic a view as possible of the length of time it will take to complete Blueprint, Detailed Level Specification and Enactment phase activities ahead of building and testing the new arrangements. However, new and unforeseen systems, process or policy issues may arise during later phases of the programme that may require changes to the scope or timing of work. The programme governance arrangements will provide the necessary structures to adapt the programme to these issues as necessary. Additionally, we are developing our proposals in an iterative way, baselining products at regular intervals and establishing clear change control mechanisms around them. This should help to identify the impact of any new and unanticipated issues. Furthermore, we remain committed to ensuring that, when the new switching arrangements go live, they have been robustly built and tested. Our left-to-right planning approach will continue throughout the programme's duration. This will ensure that adequate time is allowed for testing the new arrangements so that they are reliable from the point of moving to live operations and provide positive outcomes for consumers.

8. Next steps

Developing our business case

8.1 Having published this first iteration of our business case, and with approval to proceed from the programme's senior responsible owner, we are now beginning to develop the next iteration – the outline business case (OBC). In addition to developing more detailed plans for the commercial, financial and management arrangements for delivery of the programme, we will be carrying out detailed economic analysis of the shortlisted reform packages. This analysis will then inform our selection of a preferred option. We will need to gather a large amount of quantitative and qualitative information to support these assessments.

8.2 Our primary method for gathering this information is through a request for information (RFI), issued to industry stakeholders alongside publication of this business case. We are using the RFI to gather information from respondents on the costs and benefits to different industry participants of each of the reform packages, including more granular information on specific individual reform options.

8.3 Separately, we will continue to develop and refine our understanding of the likely benefits to consumers of the programme that we have mapped out in our strategic case. These benefits will include the reduction in the instances of consumers being let down by an unreliable switching system, and the energy bill savings that will result from faster switching arrangements. We will support this analysis by engaging with consumer groups and referring to the latest consumer survey evidence, market data, and academic research.

8.4 We will use the information that we gather on the costs and benefits of the reform packages to determine a preferred option. Throughout this process we will continue to engage with interested stakeholders through our programme governance mechanisms, and in particular will ensure that the External Design Advisory Group is able to feed into our analysis that will inform which reforms we take forward.

8.5 The next iteration of the business case (the OBC) will be produced in line with the following timescales:

- We will publish our draft OBC when consulting on our preferred option, planned for August 2017. We will use this document to set out our Design Baseline 2.
- Following the consultation period, we will update the OBC based on the responses we receive, and will make a decision on a preferred option.
- The final OBC, reflecting our decision on the preferred reform package, is expected to be published by the end of 2017.

Feedback

8.6 We will continue to seek input from affected stakeholders throughout the detailed level specification phase of the programme. If you would like to feed into this process, and are not currently actively engaged with the programme, please send us an email to the address below. We also welcome any feedback on this document.

switchingprogramme@ofgem.gov.uk

Appendices

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There are a series of supplementary appendices to this document, which we have published separately. Links to each of these documents can be found in appendix 4.

Appendix 1 – the reform packages

Introduction

1.1 This appendix describes the current arrangements as well as the content of the three reform packages under consideration. Each reform package is described below and appendix 4.a sets this information out in tabular form, highlighting differences between the packages. The shortlist comprises:

- Do Nothing (RP0): the counterfactual against which other packages will be judged
- Reform Package 1 (RP1): which explores the extent to which existing systems and processes could be enhanced to deliver the objective of reliable and fast switching
- Reform Package 2 (RP2): harmonising gas and electricity switching in a new central switching service (CSS), but continuing to use the existing enquiry systems
- Reform Package 3 (RP3): in addition to introducing a new CSS, this package includes implementation of a new market intelligence service (MIS) to replace the ECOES and DES enquiry systems.

Current arrangements and the reform packages explained

Do nothing (RP0)

1.2 Currently, separate switching arrangements exist for electricity and gas. They are defined, for electricity, in the Master Registration Agreement (MRA) and, for gas, in the Uniform Network Code (UNC) and the Supply Point Administration Agreement (SPAA). They are supported by the Meter Point Registration System (MPRS) run by distribution network operators (DNOs and iDNOs) and the UKLink system run by Xoserve on behalf of gas transporters (GTs and iGTs). The existing arrangements were described in the Target Operating Model[84] and a summary is included in the table at appendix 4.a. The current solutions architecture supporting these arrangements is depicted in figure 1.

[84] Ofgem, Moving to reliable and fast switching: Target Operating Model and Delivery Approach v2, November 2015

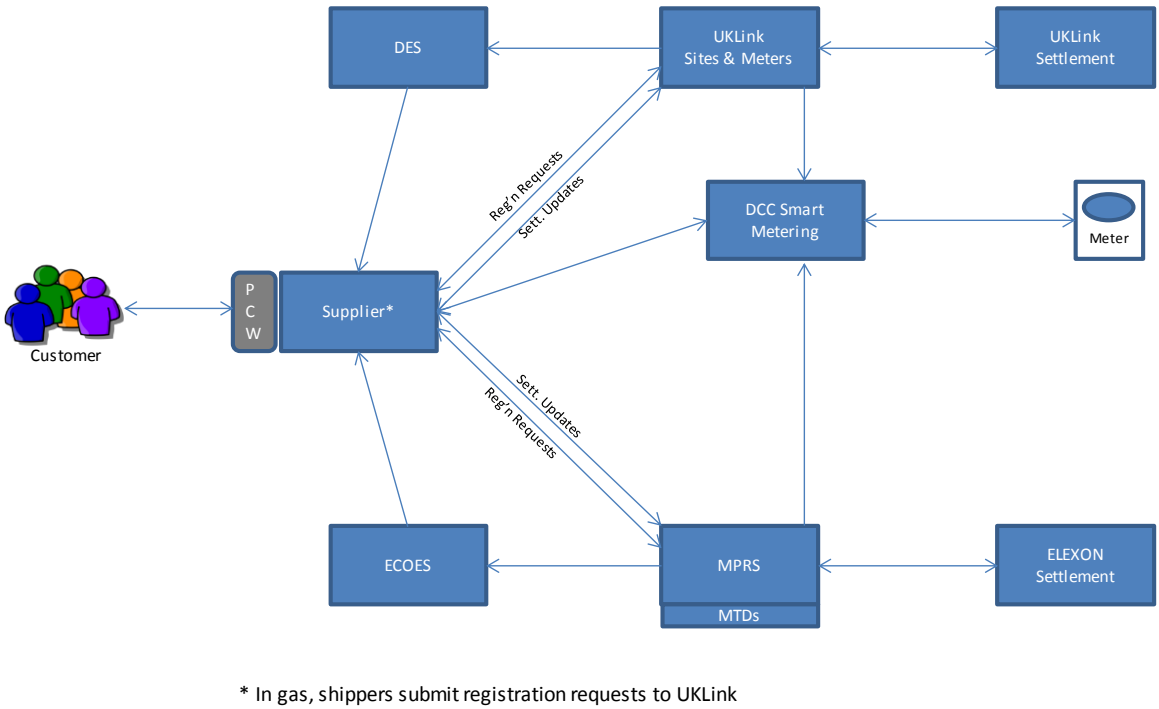


Figure 1 - RP0: the current solutions architecture

1.3 A number of developments are underway in both the electricity and gas industries which will impact upon switching and which are expected to complete before any of the additional changes in RP1, RP2 or RP3 would come into effect. These changes are treated as features of the counterfactual (ie RP0) and include:

- Project Nexus: this will result in replacement of the current UKLink systems by a new suite of systems based on a modern technology platform. It will also result in the consolidation of GT and iGT data and the use of a single set of switching arrangements for all gas meter points.
- Competition and Markets Authority (CMA) remedies: remedies proposed in the CMA Energy Market Investigation will have been implemented, including facilities to allow price comparison websites (PCWs) to access the ECOES and DES enquiry services. In the case of ECOES, PCWs - and other users - will be able to submit enquiries using an API[85] connection.
- Smart metering: the counterfactual assumes that the Data and Communications Company (DCC) will have implemented releases 1.2 and 1.3 of its DSP services allowing SMETS2 smart meters to be operated in both credit and prepayment mode. We also assume that suppliers will install smart

[85] Application Programming Interface - a technical routine which allows transactions to be passed directly between computers: in this case to retrieve data from the enquiry service to prepare a consumer quotation.

meters in line with their licence conditions and that a significant proportion of SMETS1 meters are enrolled into DCC.

- Erroneous transfers (ETs): the ET working group will have completed its review and implemented streamlined processes for managing the return of erroneously transferred consumers to the correct supplier and suppliers will have applied risk-based procedures for avoiding ETs. At this stage, we have not made any assumptions on the expected impact of this work.

- Half-hourly settlement: the arrangements for elective half-hourly settlement will have been implemented, allowing consumers with smart meters to utilise time of use tariffs established to reflect the wholesale costs of electricity.

- Priority services: modifications to Supply Licences in respect of priority services have been implemented.

Reform Package 1 (RP1)

Introduction

1.4 RP1 represents the 'do minimum' option. It involves a lower level of intervention than RP2 and RP3 and is designed to explore the extent to which the existing systems and processes could be enhanced to deliver the objective of reliable and fast switching. The emphasis in RP1 is on reducing the time allowed for specified tasks (eg the time window granted to incumbent suppliers to decide whether to object to a switch) and on making incremental modifications where data quality issues are frequently encountered (eg related meter point administration numbers (MPANs), address data). No changes are proposed to the governance arrangements, which will continue under the MRA and UNC.

Expected outcomes

1.5 Operating within the limitations of the existing systems and governance arrangements, we anticipate that RP1 should deliver the following outcomes for consumers:

- Speed of switching: by removing the linkage between cooling off and switching timeframes; by reducing the time allowed for the incumbent supplier to raise an objection (to one working day - 6am to 6pm); and in gas by reducing the time between the end of the objection raising window and the switch (to one working day); we expect that the time taken to complete a switch would be significantly reduced. Under RP1 we expect that the minimum time to complete a switch would be reduced to minimum of three calendar days but this would be longer (up to a week) if weekends and/or public holidays occur between the switch being requested and being executed (ie the point at which the switch becomes certain to take place).

- Improved reliability: as the systems and procedures are fundamentally unchanged from today we do not anticipate a significant change in the quality of data. Nevertheless benefits should be realised from recording linkages between related MPANs and from matching meter point addresses to a

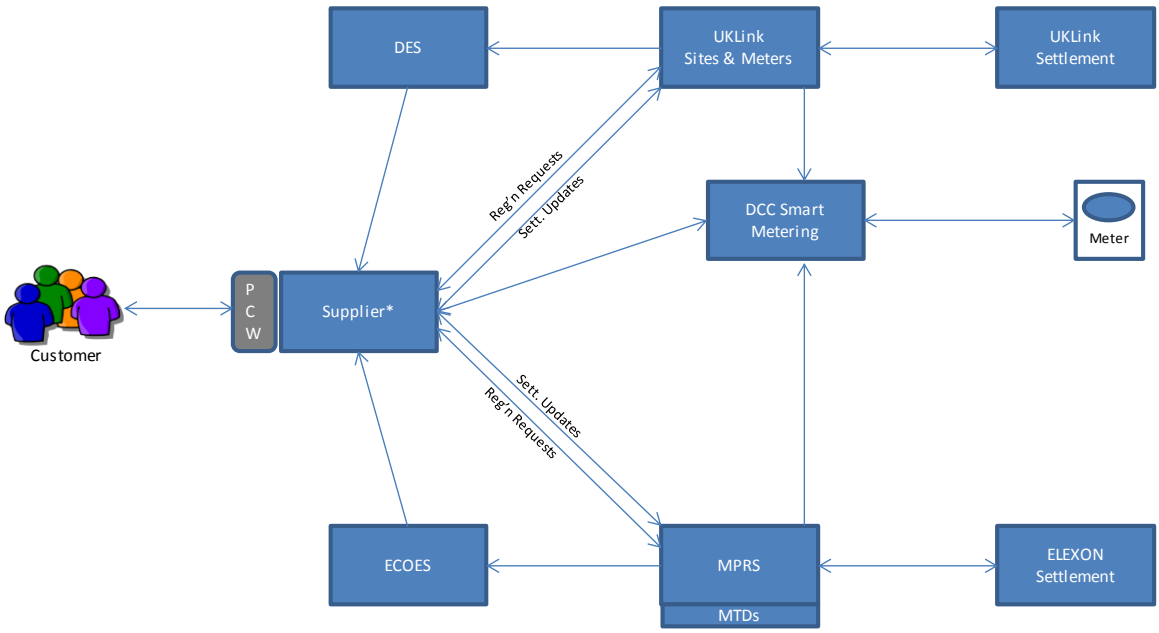
standard GB address list and through one-off data cleanse activities (matching each address to one held on a standard address list should improve the probability that a consumer requesting a dual fuel switch will be able to identify both their meter points).

- Increasing engagement in the market: as well as benefiting those consumers that are already engaged in the market, improvements to the reliability and speed of switching arrangements should help to improve trust in the system more broadly. This should help to give a broader range of consumers the confidence that they can engage with the market without things going wrong.

- Reduced administrative costs: the introduction of some steps towards harmonising arrangements across gas and electricity (for example, the operation of a common period for advance registrations) would allow suppliers and other participants to streamline their operational procedures. In addition, the capturing of meter asset provider (MAP) ID within the registration systems would allow MAPs to be notified of change of supplier/shipper events. This would streamline the billing and reconciliation of meter asset charges and put downward pressure on premiums raised to mitigate the risk of unrecoverable assets.

Features

1.6 RP1 would be delivered using existing IT systems. As currently, switches in gas and electricity would proceed independently, even for dual fuel consumers. This is reflected in the high level solution architecture diagram in figure 1. In gas, the switching process would be initiated by the shipper whereas in electricity switching would be supplier-driven.



* In gas, shippers submit registration requests to UKLink

Figure 2 – RP1: The solution architecture under Reform Package 1

1.7 In both electricity and gas, the switching processes operate on a working day basis. Although a switch may fall over a weekend or on a public holiday (eg to align with a contract starting on the first of a month), the times specified to complete activities involved in the switch are calibrated in working days. In gas, the operational requirements would be tightened under RP1 such that all UKLink transactions must be processed within a single overnight run (currently the requirement is to process all transactions within 24 hours of receipt).

1.8 Where the consumer has one or more smart meters installed, the arrangements for re-configuring the smart meters would be the same as under RP0. In summary, UKLink and MPRS provide details of switches to DCC and these are used to determine which supplier can access each smart meter. However, the timing of updates can prevent suppliers from aligning the re-configuration of a smart meter with midnight on the date of the switch. The P302 modification to the Balancing & Settlement Code (which establishes a mechanism establishing a switch read from smart meters) would continue to be followed.

1.9 In gas the role of Meter Asset Manager (MAM) would be split into similar roles to those recognised in electricity, namely the Meter Operator (MOP) and MAP. This would allow the owner of the meter assets at each MPRN to be identified, thereby improving the control that MAPs exercise over the physical handling and charging for their assets.

1.10 The systems would be modified or enhanced to support the following features:

- The objections window in both gas and electricity would be reduced to one working day. Supplier A would be notified of a switch request prior to the start of a working day (eg 6 am) and would be required to raise an objection by the end of that working day (eg 6 pm). If no response is received it would be assumed that no objection is raised. This modification would significantly reduce the time required to complete a switch.

- The gas confirmation window (the period between the end of the objections window and the switch) would be reduced to one working day. This would also contribute to reducing the time required to complete a switch.

- In electricity, links would be established between related MPANs (as defined in the MRA) such that for each pair, one MPAN would be denoted the 'parent' and the other the 'child'. Suppliers would only be allowed to process switch transactions in respect of the 'parent'. When the 'parent' is switched, the 'child' MPAN would automatically be switched with it. This would allow suppliers to avoid problems that arise when they are unaware of the presence of related MPANs.

- In electricity, an indicator would be added to distinguish between import and export MPANs. Where both import and export MPANs exist at a premises, this feature should help suppliers to avoid switching the wrong MPAN.

- In electricity, an indicator would be added to identify the type of consumer (domestic or non-domestic) at each MPAN (an indicator is already captured for gas). This would assist suppliers to determine the correct tariff for a new consumer and to verify MPANs.

- In both electricity and gas, an indicator would be added to identify meter points situated on Licence Exempt Networks. This would assist suppliers / shippers to verify MPxNs.

- In gas, the MAM ID code in UKLink would be replaced by a MOP ID and new fields would be created to record the MAP ID and the Meter Communications Provider (MCP) ID. The MAP ID and MCP ID fields would be updated by the MOP. When a switch transaction takes place the MAP and the MCP would be notified of the new shipper and supplier.

- In gas, the nomination process for large supply points (LSPs) would be modified. Shippers would still be able to access transportation prices for specified MPRNs from Xoserve but the requirement to hold a valid offer would be removed from the critical path for switching.

- In electricity, new fields would be created in MPRS to record the MAP ID, the meter serial number (MSN) and the meter install date (these meter technical details (MTD) fields are currently maintained in ECOES) plus the MCP ID. The MTD fields and the MAP and MCP IDs would be updated by the MOP. When a switch transaction takes place the MAP and the MCP would be notified of the new supplier.

- The current online enquiry mechanisms which are used to access data held by ECOES and DES would be supplemented by API interfaces. These would allow authorised parties to retrieve data through computer-to-computer links

without human involvement. For example, the quotations process within a supplier's website may make a direct enquiry to ECOES to see whether a smart meter is installed at a specified meter point, thus determining whether a time of use tariff can be offered.

- The parameters set for standstill and advance registrations would be re-set to 7 and 28 calendar days respectively, to introduce harmonisation between gas and electricity.

Other changes

1.11 RP1 would not require the procurement of additional systems but would require enhancements to the functionality of UKLink and MPRS as described above. The enquiry services - DES and ECOES - would also need to be modified to make additional fields available and to provide new access methods. Industry parties would need to modify their systems to reflect the proposed changes to the central systems.

1.12 In addition to the changes to their systems, parties would also need to make changes to their business processes, including:

- Cooling off: in addition to fulfilling their statutory obligations (eg to seek confirmation that the consumer is prepared to accept charges if the switch is made and energy supplied within the cooling off window), suppliers would need to meet two new regulatory obligations. Firstly, they would be required to offer terms equivalent to those the consumer would have faced, had they not switched, to any consumer who makes a switch, cools off and decides to return to their former supplier (Supplier A). Secondly, when a consumer cools off, Supplier B would be required to continue to supply energy at the tariff in force prior to cooling off, for a minimum period of 30 calendar days. After this period of grace has expired, if the consumer has not switched, Supplier B would be permitted to apply an alternative tariff in line with the existing licence conditions relating to deemed contracts.

- Address matching: network businesses would be required to match meter point addresses on UKLink and MPRS to a standard GB address list, procured by industry. This process would help to identify the correct meter point and improve the identification of meter points at the same premises. One of the existing Code administrators would be nominated to procure the standard GB address list and to take a lead data steward role in respect of meter point addresses (although address changes in UKLink and MPRS would still be made by GTs/DNOs).

- Related MPANs: participants would be required to undertake a one-off exercise to codify pairs of related MPANs (ie to identify each as a parent or child and record a pointer to the other) and introduce procedures to capture this information when related MPANs are created and withdrawn (including when one MPAN is de-energised).

Implications for large consumers

1.13 Larger - primarily non-domestic - consumers typically engage in more complex buying procedures and contracts are often signed significantly in advance of the switch date. The arrangements proposed in RP1 for advance registrations would continue to support this.

1.14 One issue that would affect larger gas consumers is the proposed change to the nomination procedure. For LSPs gas shippers currently submit nomination requests to Xoserve and receive a quotation for the gas transporter's services. Under RP1 the current process would be modified such that it is removed from the critical path for switching but still provides shippers with certainty about the costs of transportation.

1.15 A further issue affecting gas shippers with large consumers will be the shortening of the gas confirmation window to one working day. Shippers will be required to provide nominations for daily metered (DM) sites by 1pm on D-1.

Reform Package 2 (RP2)

Introduction

1.16 RP2 represents a more significant level of intervention as it involves transferring the switching functions currently provided by UKLink (gas) and MPRS (electricity) to a new CSS, procured by DCC. The aim of this change is to harmonise the switching arrangements across gas and electricity by operating them on a single platform. The new CSS would be designed to enable suppliers - wherever appropriate - to process switching transactions 'next day'. Governance of the CSS would be set out in the Smart Energy Code (SEC) or a new Retail Energy Code (REC): this will be decided later in the Blueprint phase.

Expected Outcomes

1.17 By freeing switching from the constraints of the existing systems we expect that RP2 would deliver the following outcomes for consumers:

- Speed of switching: by utilising real-time processing, including requiring the incumbent supplier to raise an objection (if they wish to object) in real-time, this reform package would allow suppliers to provide confirmation of a switch while the consumer is at the point of sale (ie on a website or during a phone call) and that the switch could be effective from the next calendar day. We recognise that this speed would not always be appropriate (eg if the consumer specifies a later date for switching or if the supplier requires more time to confirm the sale or issue prepayment top-up instructions), but setting 'real-time' as a design parameter would ensure that the CSS provides a flexible solution for the medium to long-term

- Harmonisation: many arbitrary differences between gas and electricity in the switching process would be eliminated and a dual fuel switch process would

be incorporated to allow suppliers (for example on instruction from the consumer) to specify that both fuels switch on the same date. Additionally, meter points would be linked to a premises address from a standard GB address list, thus improving the reliability of dual fuel switches.

- Improved reliability: the address linking referred to above, coupled with data improvements shared with RP1 (eg recording related MPANs), would result in a significant reduction in the number of abandoned or erroneous switches. As with RP1 the increased speed of switching could lead to an increase in erroneous transfers but suppliers would be in control of switching speed and therefore able to introduce mitigation steps. We have asked an industry-led working group to recommend and implement changes, in advance of our programme reforms being implemented, that help to reduce the prevalence of ETs, and improve the procedures to deal with them once they have been identified.

- Improved consumer feedback: the instant confirmation of a switch coupled with prompt re-configuration of smart meters would allow consumers to see the progress of their switch, thereby building confidence in the reliability of the switching process.

- Increasing engagement in the market: as with RP1, the obligation on suppliers to offer terms to returning consumers that are equivalent to those they would have faced had they not switched away, if a contract has been cancelled during the cooling off period, and improvements to data quality would build confidence in the switching process such that a greater number of sticky consumers engage in the market.

- Reduced administrative costs: the harmonisation steps introduced in RP2 and the improvements in data quality included in RP1 and RP2 would enable participants to streamline their operational procedures. As in RP1 the improvements in recording and notifying MAPs of change of supplier events would place downward pressure on meter asset charges. Further cost savings would arise as a result of streamlining the procedures for appointing and de-appointing agents.

Features

1.18 RP2 would involve the removal of switching functions from UKLink and MPRS and the implementation of a new CSS. This is reflected in the high-level solution architecture diagram in figure 3.

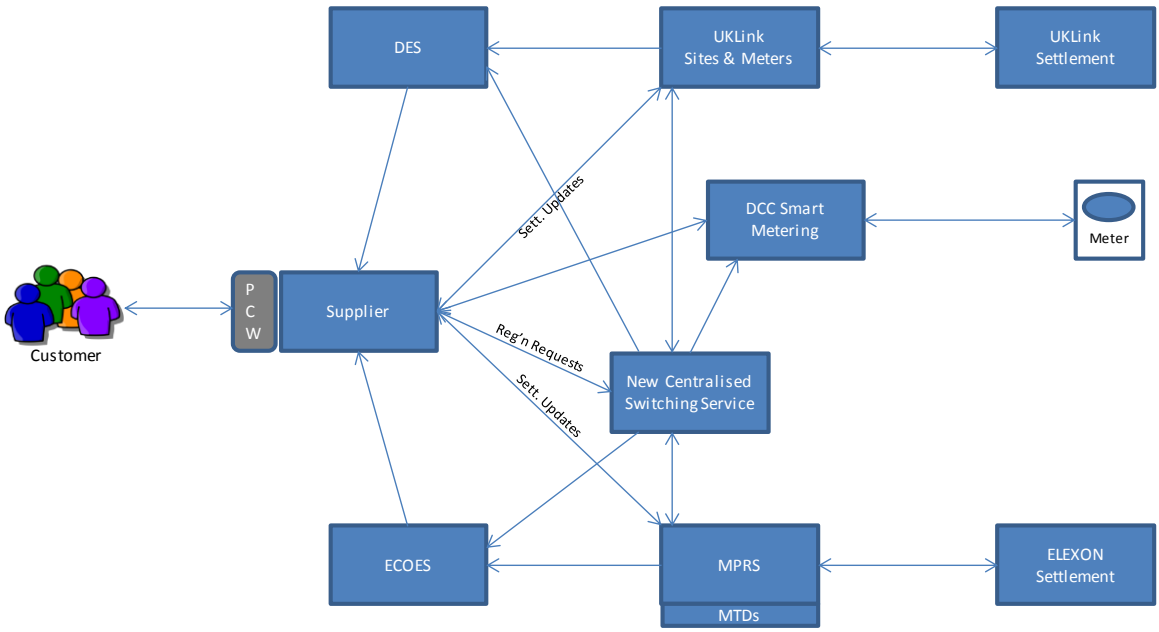


Figure 3 - RP2: Solution architecture with new CSS

1.19 A characteristic of the domestic energy market is the high proportion of dual fuel consumers: as of January 2016 there were 20 million dual fuel customers from a total of 28 million electricity customers and 23 million gas customers.[86] Currently dual fuel consumers experience different processes and timescales between gas and electricity and a key feature of RP2 is the introduction of harmonised procedures (where practicable). In gas, one aspect of this harmonisation would be the change-over from switching being shipper-led to become supplier-led.

1.20 A more general trend, especially in the domestic sector, is for consumers to expect that sales websites are available at any time of day and that the provisioning of new services (eg portability of mobile phone numbers) is fast. Recognising this trend, RP2 would provide instant confirmation of energy sales and a fast switch: where a consumer wishes to (and where the metering and other circumstances allow), the CSS would enable the consumer to switch to the new supplier by the next calendar day.

1.21 Transferring the switching functions to CSS, and the introduction of closer links between CSS and DCC's smart metering services, would allow a more streamlined approach to be taken to the reconfiguration of smart meters. This would enable a domestic consumer to see their new tariff become active from the time that their new contract becomes effective (ie at midnight). This would also allow the smart meter's Daily Read Log to be used for the switch read.

[86] Source: CMA Energy Market Investigation, June 2016

1.22 In gas - as in RP1 - the role of MAM would be split into the constituent roles of MOP and MAP.

1.23 The new CSS would be developed to support the following features:

- Suppliers would submit switch requests to CSS for validation, testing for objections and giving confirmation to suppliers and other interested parties that the switch would take place on the specified date. Objections would be tested using an instant reactive approach wherein Supplier A would be required to respond in real-time to an invitation to object. A parameterised standstill period (up to 10 days) would be set to mitigate data integrity risks that could arise from multiple switches in quick succession. Switch requests would be accepted up to 28 days ahead of the specified switch date. These features would allow a switch to be effective by the next calendar day, with harmonised arrangements across gas and electricity.

- The CSS would execute switches on the specified date and maintain the register of which supplier is responsible for each active meter point. Relevant parties would be notified that a switch has become effective.

- The CSS would record a premises served address, linked to a standard GB address list. DCC would be obliged to undertake data stewardship activities (eg processing updates to the standard GB address list). This would reduce the number of instances where a switch fails because the meter point cannot be identified correctly.

- Where requested, dual fuel (and other multi-switches) would be executed on the same date, using a one-fail-all-fail option. This would boost consumer acceptance of switching.

- For each meter point only one confirmed pending switch may exist at any time. Switching requests may be withdrawn between the points of confirmation and execution by the supplier that raised the switch request. Once an ET has been agreed (using established ET procedures) the CSS would also process an ET switch to return the meter point to the correct supplier (in the same way it would a regular switch). These features would ensure suppliers have tools to correct errors promptly and efficiently.

- The CSS would capture the ID of agents appointed by Supplier B (data aggregator, data collector (DC), MOP) and, for gas, the ID of the shipper. These IDs would be submitted on the switch request as mandatory data items and would include identification of customer-contracted agents. This would streamline the process of transferring agent-related information between parties. The switch notices issued by CSS to incoming and outgoing agents could be used in place of the current data flows to appoint and de-appoint agents, thus streamlining these processes.

- Consumer type (domestic or non-domestic) would also be included in the switch request and recorded in CSS. This would assist suppliers and PCWs to determine the correct tariff for a consumer and to verify MPxNs.

- The CSS would provide information to DCC for access control to smart meters. This would allow re-configuration of smart meters to be downloaded for activation at midnight on the date of the switch becoming effective.

- The CSS would provide updates to ECOES and DES so that switching data is available for enquiry purposes, including the identification of switches that have been confirmed and are awaiting execution.

1.24 The existing systems would be enhanced to support the following features:

- UKLink and MPRS would provide details of newly created or withdrawn meter points to CSS, plus any changes to meter point status that impact the switching process

- Gas confirmation window - as for RP1.

- Related MPANs - as for RP1

- Import and export MPANs - as for RP1

- Licence Exempt Networks - as for RP1

- Gas: MAM, MOP, MAP and MCP - as for RP1

- Gas: nomination for LSPs - as for RP1

- Electricity: MAP, MSN, install date and MCP - as for RP1

- UKLink and MPRS would receive updates from CSS of executed switches. These systems would continue to support settlement and the billing of network services without significant modification. UKLink and MPRS would notify CSS of changes to agent IDs mastered by these systems. This would allow CSS to issue switch notices containing the correct agent IDs, and sent to the correct agents

- ECOES and DES would be modified as described in RP1 to allow real-time access (via API) in addition to online enquiry. ECOES and DES would be modified to receive updates from CSS (rather than UKLink or MPRS), where mastering of a data item has been transferred to CSS (eg of confirmed and executed switches)

Other changes

1.25 RP2 would involve the procurement and implementation of a new CSS and the modification of existing systems as described above. Industry parties would need to modify their systems to reflect the proposed changes to the central systems.

1.26 In addition to the changes to their systems, parties would also need to make changes to their business processes, including:

- Cooling off - as for RP1

- Meter point addresses: network businesses would need to capture the premises served address in addition to the meter point address, to align the address of the premises served by the meter point to the standard GB address list and to co-operate with the data steward to keep gas and electricity addresses aligned

- Related MPANs - as for RP1.

- M-number helpline - the CSS provider would be required to provide a national helpline to answer queries such as "what is my meter point number?" or "who is my supplier?". Second-line support (for example to resolve complex plot addresses) would be provided by the network operators (ie the current operators of this service).

- Commercial relationships with PCWs - the ability of CSS to support confirmation of a switch at point of sale may prompt suppliers to re-assess which processes they outsource to PCWs. For example, they may require PCWs to undertake greater validation of consumer-provided information or introduce new arrangements in the event that a switch request is rejected because an objection is raised.

- Changes to settlement parameters or metering coincident with a switch - under RP2 the CSS would process switch transactions while other changes (for example to change the settlement basis from non-half hourly (NHH) to half hourly (HH)) would continue to be processed through UKLink and MPRS. Suppliers would need to ensure that these updates are scheduled such that the integrity of settlement and network charging is maintained. This would be assisted by the fact that settlement runs are scheduled several days after the settlement day, thus allowing errors to be corrected before they have a financial impact.

Implications for large consumers

1.27 The arrangements for advance registrations, LSP nomination process and the gas confirmation window would be the same as for RP1.

1.28 Another change which may impact the market for large gas consumers is the transfer of responsibility for switching from shippers to suppliers. We recognise that an error in entering the shipper ID on a registration request could result in a significant financial implication for both the incorrect and correct shipper and propose that a supplier / shipper validation matrix be maintained in the CSS. This would ensure that suppliers cannot enter the shipper ID of a shipper with which they have no contractual relationship.

1.29 Paragraph 1.21 refers to domestic consumers with smart meters seeing their smart meter being re-configured at midnight to coincide with the switch. This is not intended to imply that there would be a change to the start of the settlement day in gas. Switch reads for gas non-daily metered consumers can be taken at any time within five working days of the switch and the proposed arrangements for smart metering are consistent with this in that the switch read (taken from the Daily Read Log) would be within five hours of the switch. The start of domestic contracts is

generally at midnight on the switch date and suppliers are satisfied that any errors in settlement volumes arising from the midnight to 5 am gap should balance out over time.

1.30 For larger (generally non-domestic) gas consumers, supply contracts are more likely to become effective from 5 am on the switch date. For Daily Metered sites (where the meter is programmed to record consumption in a 24 hour period starting at 5 am) this is the default assumption. Accordingly the settlement day would continue to start at 5 am and the CSS would just record an effective date for the switch. Suppliers can decide whether to specify an effective start time (in addition to date) in their consumer contracts and the UNC would continue to define the rules for taking switch reads.

Reform Package 3 (RP3)

Introduction

1.31 RP3 represents a major overhaul to switching. In addition to the implementation of a new CSS and changes to UKLink and MPRS (as in RP2), RP3 includes the development of a new MIS. The MIS would provide a single point through which all meter point data recorded centrally would be accessible. This would allow the DES and ECOES services to be withdrawn (subject to deciding whether there is a continuing demand for DES services, including access to historical gas meter readings). By providing a single point of access to meter point data, it is expected that data quality would be improved and that suppliers and their agents (including PCWs) are better-placed to ensure that all consumer switching initiatives lead to a successful switch. Governance of the CSS would be set out in the SEC or a new REC: this will be decided later in the Blueprint phase.

Expected Outcomes

1.32 The expected outcomes from RP2 (see paragraph 1.12) are also applicable to RP3. In addition, RP3 should offer the following:

- Speed of switching: as with RP2 this package would provide a capability for suppliers to confirm a switch at the point of sale and for the switch to become effective from the next calendar day. In many cases, suppliers need to take additional steps to verify the data being supplied by the consumer and this extends the switching timetable. Implementation of the MIS would allow suppliers to access all the required data from a single source and to have confidence in its accuracy, thus avoiding the delays that can arise in retrieving data or confirming its veracity. As a result, suppliers should be confident to switch a higher proportion of consumers on a next day basis.

- Harmonisation and improved reliability: in addition to the harmonisation of switching procedures, under RP3 all meter point data would be accessible to authorised users through the MIS. This should allow suppliers and others to streamline their internal systems and processes. Managing the data via the MIS should also facilitate the procedures for maintaining and stewarding meter point data thus improving its accuracy and reliability.

- Increasing engagement in the market: the reliability improvements highlighted above should result in fewer delayed or failed switches. This should help to build consumer confidence that they can engage with the market without things going wrong.

Features

1.33 RP3 would involve the introduction of a new CSS as in RP2 and, in addition, would involve the replacement of DES and ECOES by an integrated MIS. This is reflected in the high-level solution architecture diagram in figure 4.

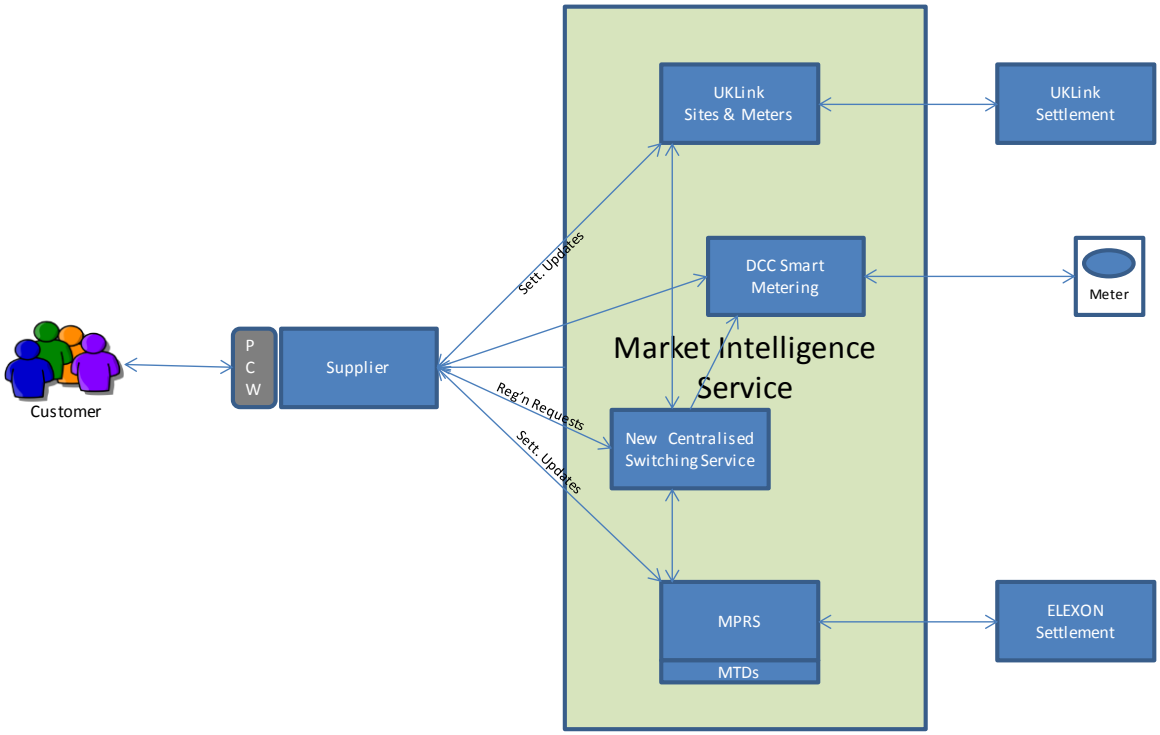


Figure 4- RP3: Solution architecture with new MIS providing access to meter point data

1.34 All the features of RP2 would apply equally to RP3 (see paragraphs 1.18 to 1.23) with the exception of the modifications to ECOES and DES. Features of the new MIS would include:

- The MIS would provide real-time access (via API) to all meter point data maintained by the CSS, UKLink (excluding meter readings) MPRS and the DCC smart meter inventory. The currency of data from the CSS and the smart meter inventory would be near real-time and data from UKLink and MPRS would be as at the last update (at least daily). This would ensure suppliers and PCWs have the most current data available when they engage with consumers in sales and switching activities.

- Active data stewardship obligations would be placed on the MIS provider to undertake continual data monitoring and to expedite data improvement

notices (eg to query a supplier as to why a profile class appears inconsistent with the consumer-type indicator).

- Anomaly detection and other processes would be established to mitigate the risks of unauthorised data mining by parties with access to MIS. Parties accessing MIS data would be required to comply with data protection legislation and to retain evidence for regulatory reporting purposes to ensure that data retrieval is properly authorised. These steps would minimise the risk that parties breach data privacy or regulatory obligations.

- Online enquiry access to the MIS would also be available, providing flexibility for smaller industry parties who do not wish to invest in API links.

Other changes

1.35 RP3 would involve the procurement and implementation of a new CSS and a new MIS and the modification of existing systems as described above. Industry parties would need to modify their systems to reflect the proposed changes to the central systems.

1.36 In addition to the changes to their systems, parties would also need to make changes to their business processes. These would be the same as those identified for RP2 (see paragraph 1.26).

1.37 With RP3 it may be beneficial to split the implementation into two discrete steps: one covering the CSS and the other the MIS and either sequence appears feasible (though our central assumption, as set out in the economic case, is that we would lead with the CSS, followed by the MIS). These implementation options will be analysed further, using information gathered through the RFI, as part of our work on delivery strategy during the DLS phase of the programme.

Implications for large consumers

1.38 We have not identified any specific implications for large consumers from implementing a MIS.

Variations to the reform packages

1.39 This section describes a specific set of variants that we wish to assess under each reform package.

RP1 - Variation to equivalent terms under cooling off

1.40 Under the central case for each of our reform packages, Supplier A would be required to offer terms equivalent to those the consumer would have faced had they not switched away if the consumer decides to return after cooling off with Supplier B. This policy option was selected on the grounds that it provides reassurance to

consumers that they can easily switch back to their original supplier if they are unhappy with their new one.

1.41 Suppliers have argued that re-instating a consumer to a contract that puts them in a position equivalent to where they would have been had they not switched away could present significant complexity and added cost. They have pointed out that the product may no longer be available or may have been modified such that the consumer would be unable to use e-services to switch back to Supplier A. A separate team may need to be formed and trained, supported by new scripts and processes, to re-sign returning consumers. While such processes would be similar to ones that suppliers need to handle ETs, suppliers are concerned that additional volumes and the difficulty of verifying that cooling off has taken place make this type of returnee more complex to process.

1.42 We are testing two variants through the RFI. In practice, these variants apply to all three reform packages, but to avoid unnecessary duplication of effort of respondents, we are testing them in relation to RP1 only through our RFI.

- The central case: suppliers must offer equivalent terms to returning consumers who have cooled off with Supplier B
- Variant 1: no specific obligations in relation to returning consumers.

RP2 - Variation to the Process for Testing for Objections

1.43 Under the central case for RP2 and RP3, Supplier A would be notified of a switch request and be required to respond in real-time with a message saying whether or not they object to the switch, and the grounds for the objection. If Supplier A fails to respond within a specified time (eg 2 seconds) it would be assumed that they do not object to the switch. This approach would require suppliers to establish a mechanism which would either maintain a list of 'would be objected to' meter points or to establish algorithms which could enquire into their customer database and determine whether an objection should be raised.

1.44 The Ofgem Design Authority was highly attracted to the instant reactive approach to testing for objections on the grounds that it would allow consumers to receive confirmation that their switch will proceed while they are still at the point of sale. However, it recognised that the goal of instant objections could also be achieved by a different technical solution, namely a central pre-loaded objections database. Under this model, CSS would manage an objections database and when a switch request is processed CSS would look to see whether an objection has been pre-loaded onto the database. Suppliers would be required to maintain records on the database of those meter points where a switch would be subject to an objection. This approach was included in the Target Operating Model although some suppliers have since raised concerns that maintaining a pre-loaded objections database would be burdensome.

1.45 The Ofgem Design Authority also considered whether a 'compressed window' approach to testing for objections might allow the speed of switching to be improved considerably over the counterfactual but be less expensive to operate. This approach

would allow suppliers a defined period (eg five hours within a defined working day) to decide whether to object. For example, if notified of an impending switch at say 4pm then (assuming the working day ends at 6pm and starts at 8am) they would have to raise an objection before 11am the following day or CSS would assume that no objection is raised. From the viewpoint of the consumer this approach would mean that they could not be certain of their switch proceeding until after 11am (in this example) the following day.

1.46 Some suppliers proposed that different rules should apply for domestic and non-domestic consumers. They argued that non-domestic switches are usually agreed with Supplier B significantly ahead of the switch date. Furthermore the circumstances of non-domestic consumers (eg potential abuse of the change of occupancy indicator) can involve Supplier A needing a longer time period to decide whether to raise an objection. These suppliers proposed that while an instant approach could be attractive for domestic switches, a 'compressed window' approach would be beneficial for the non-domestic sector.

1.47 Four variants are being tested through the RFI. In practice, these variants apply to both RP2 and RP3, but to avoid unnecessary duplication of effort of respondents, we are testing them in relation to RP2 only through our RFI.

- The central case - instant reactive: CSS sends a switch notice to Supplier A and they are required to respond in real-time as to whether they object to the switch.
- Variant 1 - pre-loaded database: suppliers update a pre-loaded objections database held within the CSS of meter points where they would object to a switch. When a switch request is received the CSS would access the objections database to determine whether there is an objection to the switch.
- Variant 2 - 'compressed window': CSS sends a switch notice to Supplier A and they have five hours (within working hours) to decide whether to raise an objection.
- Variant 3 - mixed dom/non-dom: for domestic consumers (ie those meter points where the consumer type indicator had been coded as domestic) the instant reactive approach would be followed. For non-domestic consumers the 'compressed window' approach would apply but with a longer period than in Variant 2. In Variant 3 the incumbent supplier for a non-domestic meter point would be allowed a period of 20 working hours to respond (ie two working days).

RP3 - variation in approach to developing the MIS

1.48 The central case in RP3 is that DCC would be responsible for procuring the MIS. Various industry parties have suggested that one or other of the existing enquiry services could be substantively enhanced to deliver the MIS and that such an approach might be more cost-effective and deliver the MIS earlier.

1.49 Within RP3, two variants are being tested through the RFI:

- Central case: DCC is responsible for procuring the MIS and its operation, in the first instance. DCC would be invited to provide cost and time estimates for following this approach.

- Variant 1: MRASCO and/or Xoserve are responsible for developing and operating the MIS. These two organisations will be invited to provide time and cost estimates for following this approach.

Appendix 2 – business process modelling

Purpose

1.1. We have used a business process modelling tool to describe the processes that will deliver the new switching arrangements under Reform Packages 2 and 3. These arrangements include:

- the process to enable a customer to switch from one supplier to the next
- the energy premises lifecycle: creation of a meter point to serve a premises through to the demolishing of the premises and removal of the meter point and
- the registration agent user life cycles: processes for a user to apply, qualify, and access the CSS and MIS and the process to suspend, reinstate and/ or withdraw a user.

1.2. The model can be found at the following link:
https://bpdt.host.casewise.com/evolve/statics/swdqppqw/index.html

1.3. This has allowed us to describe how the Switching Programme's current policy positions could be put into effect.

1.4. Using a modelling tool enables the programme to articulate the new business processes in a common language that parties can engage with.

1.5. These business processes have been modelled to illustrate the processes in three levels of detail providing sufficient information for participants to understand their role in the new arrangements and to help RFI respondents provide an informed response.

1.6. The model illustrates which business processes are expected to be harmonised between the gas and electricity markets and which are fuel specific.

1.7. This version of the model does not illustrate the full end-to-end business processes and the agent flows that are within scope of the programme. The model will be updated to show these during the Detailed Level Specification phase.

Development

1.8. We are grateful for the support of Gemserv in developing the business processes using the Casewise® modelling tool.

1.9. The Business Process Design (BPD) Workstream prepared the proposals for inclusion within the model. Input was sought from the industry via the BPD User Group and the External Design Advisory Group and key policy areas were also approved as being appropriate to be included in Design Baseline 1 of the programme.

How to use the business process model

1.10. A User Guide is available in the supplementary appendix 4.f.

Appendix 3 – data architecture

Purpose

1.1. The data architecture has been prepared to establish a consistent set of data concepts relating to switching and thereby identify data elements that support the process of switching. In this context switching refers to all activities associated with preparing a customer quotation (eg determining the correct meter point, establishing data that describe the characteristics of the meter point and the equipment located there), administering the switch (eg validating a registration request, notifying agents and other interested parties) through to completing a series of post-switch activities (eg determining the switch read, determining if a switch was undertaken in error).

1.2. The data architecture will assist respondents to the RFI to understand how data will be managed under the proposed reform packages. It will also form a foundation for more detailed data analysis to be undertaken during the Detailed Level Specification (DLS) phase.

1.3. The data architecture was developed to apply to Reform Package 3 in which a new central switching service (CSS) would be supported by a new market intelligence service (MIS). Under Reform Package 2, enquiry services would be provided by enhanced versions of the existing ECOES and DES systems so it may not be practical to deliver all aspects of the new data architecture: this will be assessed at DLS stage. Reform Package 1 is based on data structures inherent in the existing UKLink and MPRS systems and, for this reason, the data architecture presented in this appendix would not apply. Spreadsheet (b) – as described below – identifies how users will be able to access data elements under each reform package.

Data architecture outputs

1.4. The data architecture outputs comprise two spreadsheets:

a. Architectural Data Model Report workbook: the key worksheets comprise:

   i. Data Structure: a data model of the object classes[87] involved in switching showing the relationships between them

   ii. Glossary: a list of the object classes and the data elements that relate to them (ie the data that is used to describe an object class)

[87] Object classes represent ideas, abstractions or things in the real world that are identified with explicit boundaries and meaning and whose properties and behaviour follow the same rules [ISO 11179]. Example object classes are Supplier, Premises, Registrable Measurement Point and Registration.

iii. Data Cases: descriptions of specific situations where it was considered that a further level of explanation would be helpful

b. Data Elements Within Reform Packages workbook: the worksheet shows within each reform package, for each object class and data elements:

i. Which service would 'master' the data (ie which service would prevail as the source of truth and be the primary point of data capture)?

ii. Which services would 'reference' the data (ie which services would use this data element – and might store a copy of it)?

iii. Which enquiry service industry parties would use to gain access to this data element?

iv. Who would be the data steward (ie the party responsible for managing the quality of this object class/data element)?

How the data architecture was developed

1.5. The data architecture has been developed by the Business Process Design Worsktream. The starting point for developing the 'to be' data architecture was the data models that currently underpin the existing industry systems: UKLink, MPRS and ECOES. In addition the workstream developed 'information requirements' for each activity identified in the business process models. These inputs were subjected to rigorous data analysis taking account of the programme's Design Principles, to prepare the data architecture outputs.

1.6. The data architecture has been subject to stakeholder scrutiny through a series of Webex discussions, arranged through the BPD User Group. We would like to thank members of the user group and their specialist colleagues who contributed to this process. The data architecture was issued to EDAG for information.

Next steps

1.7. Further data analysis will be undertaken during the DLS phase as the programme develops the end-to-end design of the switching solution and the requirements for a CSS. This data analysis work will be captured in a modelling tool together with further definition of business processes and interactions between parties. We will develop the model iteratively, and will seek scrutiny from stakeholders on each version.

Key themes

1.8. This section presents some key themes that have emerged during preparation of the data architecture. In particular, we wish to draw attention to concepts which we are proposing to introduce either to harmonise arrangements and terminology between gas and electricity, or to generalise some aspects of data.

Harmonised or generalised terms

1.9. A number of new object classes have been identified and apply equally to both gas and electricity. Rigorous definitions of all the object classes are included in the Architectural Data Model but some of the key new object classes are identified below:

c. Registrable measurement point (RMP): this is the object class that is registered to a supplier and which is switched between suppliers when a customer chooses to switch their energy supplier. An RMP will probably share the same identifier (an MPRN or MPAN) as a supply meter point (gas) or metering point (electricity) but this will be confirmed during the DLS stage.

d. Metering equipment installation (MEI): this is the object class that references the metering assets installed at a particular supply metering point / metering point. The MEI manager is the harmonised term used in the data architecture for a MAM (gas) or MOP (electricity) although we may choose to use the more familiar term of MOP once this role has been clarified during the DLS stage.

e. Metering Communications Governance Arrangement (MCGA): the industry arrangements in both gas and electricity provide guidelines and place obligations on suppliers to interact with other participants in one of a number of possible ways. These are documented in licences, agreements, codes and agreed procedures and there is generally an association between MCGA and the basis of settlement (eg half hourly) and the form of communications installed between the meter and settlement. The MCGA is a concept (to be further tested and refined during DLS) to categorise these obligations.

f. Settlement arrangement: the settlement arrangement under which a data collector, data aggregator and MAM (gas) / MOP (electricity) must be qualified under the Balancing and Settlement Code (BSC) or accredited under the Supply Point Administration Agreement (SPAA) such that, when they are appointed, suppliers meet their code obligations. There are currently three such arrangements which impact the appointment of agents: electricity half hourly, electricity non-half hourly and gas.

g. Registration: this is a time bound object class which reflects the association between a supplier and an RMP. A new registration is created for each switch (although in the case of an erroneous transfer, procedures will be required to re-open a closed registration such that the correct supplier is shown for the duration of the consumer's contract with that supplier).

h. Premises: this is generally a building that represents the premises served by an energy supply. It is identified by an address that the consumer recognises and – other than in exceptional cases – will exist in a standard GB address file. The premises served address may differ from the address of the meter point, recorded by the GT/DNO. Some particular examples of premises are included in the data cases worksheet.

1.10. We have examined the ways in which agent appointments are maintained and have concluded that they should be considered under the groupings described below. A tabulated version of this description is included at Table 2:

i. Electricity settlement agents – data collectors (DC) and data aggregators (DA): these agents are contracted to a supplier for the period covered by a registration. To avoid data integrity issues we propose that the DC and DA should be specified on registration requests submitted to CSS by suppliers. Complex validation rules (eg to align the agent with the measurement class) are already encoded in MPRS so it is proposed that CSS would undertake a pre-validation check (is the agent ID valid?) but that full validation and mastering of these agent IDs would be managed by MPRS. Any changes to DA or DC outside of the registration process would be initiated by the supplier, processed by MPRS and referenced in CSS.

j. MEI manager/MOP: again the MOP is contracted to a supplier for the duration of a registration but in this case there are no complex validation rules to be applied. It is proposed that MOP is mastered in CSS and referenced in UKLink/MPRS. Changes to MOP outside of the registration process would also be initiated by the supplier, processed by CSS and referenced in UKLink/MPRS.

k. Meter asset providers (MAPs) are associated with physical assets and do not generally change when a switch takes place. It is proposed that this data element is mastered in UKLink/MPRS and referenced in CSS (to allow notices to be issued when a switch occurs). The MOP is responsible for installing meters and therefore changes to MAP ID would be initiated by the MOP, and processed by UKLink/MPRS and referenced in the CSS.

l. Meter communications providers (MCP): are associated with communications facilities from meter points or groups of meter points (eg from smart, AMR or half-hourly (HH) meters) and will not generally change when a switch takes place. It is proposed that MCP ID will be mastered in DCC and referenced in CSS.

m. Shipper: the shipper is contracted to a gas supplier for the duration of a registration and would be mastered in CSS and referenced in UKLink. A change of shipper outside of the switching process would also be initiated by the supplier, processed by CSS and referenced in UKLink.

	Agent Category	Settlement agents	MEI Managers	Other agents	Shipper
	Agent Type	**DA and DC (elec only)**	**MOP (gas and elec)**	**MAP and MCP (gas and elec)**	**Shipper (gas only)**
RP1	**Are agent IDs included in a supplier / shipper registration request?**	- Optional - Will roll over if not included - Use existing D055 flow (registration request)	- Optional - Will roll over if not included - Use existing registration request data flow to update MPRS/UKLink	No	NA (shipper led process)
RP1	**How is data maintained outside of the switching process?**	Supplier sends update to MPRS	Supplier sends update to UKLink/MPRS	MOP (or DCC)[88] sends update to UKLink/MPRS	NA
	Agent Type	**DA and DC (elec only)**	**MOP (gas and elec)**	**MAP and MCP (gas and elec)**	**Shipper (gas only)**
RP2/ 3	**Are agent IDs included in supplier registration request?**	- Mandatory - Rejected if not included - Initial check in CSS and validated in MPRS	- Mandatory - Rejected if not included	No	- Mandatory - Rejected if not included
RP2/ 3	**How is data maintained outside of the switching process?**	Supplier sends update to MPRS	Supplier sends update to CSS	MOP (or DCC) sends update to UKLink/MPRS	Supplier sends update to CSS
RP2/ 3	**Which service masters this data?**	MPRS	CSS	UKLink/MPRS	CSS
RP2/ 3	**Which service references this data?**	CSS	UKLink/MRPS	CSS	UKLink

Table 2 - Maintenance of Agent IDs

Data governance

Theme I: System mastering of data and stewarding of data by actors needs to occur within the service that is most dependent on the data and its quality.

[88] DCC in the case of SMETS2 meters

1.11. Actors made responsible for mastering services are generally considered best placed to act as data stewards. For example:

n. CSS masters registration data, to be delivered as a centralised service.

o. CSS masters premises served address and postcode as a centralised service.

p. CSS masters MOP appointments

q. MPRS masters the appointment of DA and DC as those parties are central to the settlement activities which MPRS controls.

r. CSS masters shipper appointments as the shipper controls all settlement and wholesale energy transactions between itself and gas transporters.

s. MPRS and UKLink continue to master settlement and network related data, as it is central to their operations and the quality of its delivery. This includes network data related to a supply meter point /metering point (eg connection date) and settlement data such as supply point class (gas) or measurement class (electricity).

t. MOP services (gas and electricity) master meter asset data as they hold this data to run their operations and are the parties which will make changes to that data driven by their physical activities.

Theme II: System referencing of data needs to occur in services that have some dependency on the data mastered by other services and therefore need a copy.

1.12. All services that require access, to data that they do not master, are declared to be referencing services. How they acquire and synchronise data with the master source will be considered within the DLS stage. Examples of referencing data within the end-to-end architecture are:

u. Supply metering point / meter point and RMP data will be mastered by MPRS/UKLink but will be referenced within the CSS, as it is the RMP to which an energy supplier makes a registration.

v. The registration, however, will be mastered within the CSS and referenced within MPRS/UKLink as those services require a record of which energy suppliers are registered to which RMPs for settlement and network charging purposes.

w. The CSS will reference DA, DC, MAP and MCP agent appointments so that it can meet the functional requirement of being able to issue notifications to those parties when appointments and registrations change.

x. UKLink and MPRS will reference MOP appointments, which are mastered by CSS, to enable the continuation of their existing business activities which rely on that data, such as the storing of meter asset data.

y. UKLink and MPRS will reference meter asset data and the MAP ID that is mastered by MOPs. In turn the data will also be referenced in the central

enquiry services thus allowing all authorised parties to access meter asset data and MAP ID.

Theme III: System referencing should be employed to reduce the scale of change to existing MPRS and UKLink services.

1.13. Continuing to provision data that is currently required by both UKLink and MPRS will reduce the scale of functional change required to both of those systems. An example of this approach is the continued provision of MOP appointment data (ie agent ID and effective date) from CSS to MPRS. While this data is not required for MPRS settlement activities (the DA does not have any visibility of the MOP appointment) the current design of MPRS requires a mandatory and continuous MOP appointment.

1.14. The referencing of the MOP appointment by MPRS from the CSS will negate the need for system change.

1.15. This approach will be validated within the DLS phase.

Theme IV: Enquiry services will be harmonised in RP3 only.

1.16. Where possible, the Architectural Data Model has harmonised gas and electricity data elements.

1.17. However, under RP2, the existing separate gas and electricity enquiry services will remain (ECOES and DES). Under this arrangement, full harmonisation will not occur as the enquiry services will continue to reference data from UKLink and MPRS. In turn, for data elements such as registrations, UKLink and MPRS will reference data from the CSS.

1.18. Under RP3, the harmonised MIS could either reference data from central services such as MPRS/UKLink/CSS or reference data from the appropriate mastering service of each data element, which would include the central services but could also include energy suppliers and MOPs. The technical feasibility of these delivery options will be assessed at DLS.

Theme V: Data descriptions must cater for all industry arrangements to support harmonisation of the registration but also support continued operation of legacy activities outside the scope of switching.

1.19. This theme introduces the concept of generalised categories which can be applied across gas and electricity, for example the MEI manager / MOP.

1.20. Harmonisation is also required to achieve alignment across gas and electricity, for example changing the gas switching activities from shippers to energy suppliers.

1.21. The harmonisation of all other industry process, such as settlements is not within scope of the switching programme. The CSS will be designed such that switching harmonisation has minimal impact on those separate activities.

Data synchronisation

Theme VI: Old and new energy supplier registration data as well as old and new gas and electricity MOP appointments must be synchronised between the CSS and those parties upon a change to the registration

1.22. The CSS will hold the master register of energy supplier registrations to RMPs. Changes to the registration of an energy supplier will only be enacted by the CSS under instruction from an energy supplier.

1.23. The CSS will validate each registration request instruction against a set of criteria and will either accept – and confirm - or reject registrations once validated.

1.24. Each energy supplier registration request must also contain a MOP appointment. The CSS will hold the master record of which MOP is appointed to service which supply metering point / meter point and its associated RMP(s).

1.25. Each energy supplier registration for an electricity RMP must also contain a DC and a DA appointment. Following an initial check these IDs will be passed to MPRS for validation as MPRS is the mastering service for these data elements.

1.26. The CSS will then notify relevant parties that a new energy supplier registration has been accepted.

1.27. The notifications will include the identity of all the relevant organisations appointed by the energy supplier and will also include the previously appointed parties, to trigger the relevant legacy data transfer processes (eg meter asset data, NOSI flow).

1.28. The issuing of notices at confirmation of a switch (as well as at execution) will also ensure that MOPs are aware of future appointments, even if the appointment is the next day. MOPs may need this notice to initiate business processes on the day prior to registration, such as scheduling a site visit for the first day of the registration.

1.29. Where more than one RMP is associated to a supply metering point / meter point (such as import/export and related MPAN meter points), one of the RMPs will be the prime and only that RMP will require the appointment of a MOP (who will perform services in respect of all the related RMPs).

1.30. For secondary RMPs, the CSS will notify the registered energy supplier of the primary's MOP appointment upon registration.

1.31. As the MOP appointment is not required for settlement activities, the appointment is not required to be mastered within the MPRS/UKLink services (although the MOP will be referenced so that it can be used by MPRS/UKLink when validating the submission of meter asset data).

Theme VII: Old and new DC and DA appointments must be synchronised between MPRS and CSS

1.32. For electricity, the DA and DC will continue to be mastered within MPRS. This proposal is based on the tight relationship that exists between the DC and DA agent activities and settlement parameters, particularly in respect to events such as a change of settlement arrangements (eg from non-HH to HH).

1.33. If the CSS was to take on the role of mastering DC and DA appointments, it would also need to become master of those associated settlement data elements (such as measurement class) and would also require the operation of complex validation routines currently employed by MPRS. The scope of the CSS would significantly increase as would the role of the registration agent (DCC) and the complexity of the synchronisation with MPRS.

1.34. As such, the DC and DA appointments will be notified by the energy supplier to the CSS within the initial registration request. However, all changes to appointments that occur outside of the registration will be made directly between the supplier and MPRS and referenced in CSS (to allow notices to be issued to interested parties).

1.35. The CSS is required to hold the current appointed supplier agents so that on a switch of supplier it can send notifications to the old parties. It is also required to send notifications to new parties once they have been appointed.

1.36. To enable this requirement, MPRS will synchronise agent appointments with CSS at least daily. CSS may then issue notifications to old and new supplier agents and will notify the existing MOP of the new appointments.

Theme VIII: Old and new shipper appointments must be synchronised between UKLink and CSS

1.37. The CSS will generate transactional notifications to UKLink as new registration requests are confirmed.

1.38. The notifications to UKLink will be as similar as possible to the current legacy notifications to minimise the scale of change.

1.39. UKLink will queue the registration notifications and process them in batch routines which will occur at frequent times as per the Nexus design.

1.40. The shipper's identity must be part of a new registration request, as the shipper will continue to operate the legacy processes and interactions with UKLink. The shipper ID, included in a registration request, will be validated against a supplier

/ shipper matrix which will be maintained by CSS, authorised by suppliers and shippers. Interactions between the new shipper and UKLink will only be accepted once the CSS has notified UKLink of the new shipper appointment.

1.41. The shipper and UKLink will then operate processes to capture nominations for daily metered sites and determine the estimated position for non-daily metered sites. These activities are required to ensure that each shipper has an estimate of the volume of gas they will need to deliver into the system for the following settlement day.

1.42. A shipper needs to be appointed by the energy supplier each time it makes a new registration, as all subsequent settlement interactions are between UKLink and shipper.

1.43. In this context, the design decisions are made on a premise that once the CSS service has notified the shipper / UKLink of the new registration the legacy interactions can commence with minimal change.

Theme IX: energy supplier registrations and MOP appointments must be synchronised with UKLink and MPRS

1.44. Once a new supplier registration or MOP appointment is confirmed within the CSS it will be referenced in UKLink / MPRS.

1.45. To minimise change to UKLink / MPRS the assumption is that the CSS will send MOP appointments to them in a similar way to how they receive existing updates. However, as they no longer master those data elements, UKLink / MPRS should no longer be able to reject updates to MOP appointments.

1.46. For the legacy services to process new data without exception, the validation performed within the CSS should be the same as that performed within MPRS / UKLink.

Theme X: the CSS must be synchronised with supply meter point/ metering point data from UKLink and MPRS

1.47. Energy suppliers will register against an RMP: RMPs are the retail points which are exchanged between energy suppliers when switching occurs.

1.48. Each supply meter point / metering point on the physical gas or electricity network may be associated with multiple RMPs, such as import/export or related MPANs. In these cases the supply meter point / metering point will also share the same metering equipment installation, which may have more than one metering asset installed.

1.49. This will also provide potential for future variant RMPs, eg to support electric vehicles.

1.50. The network operator's services will continue to master this data and they will be the data stewards. The CSS will require this data to be referenced to enable switching registrations to occur.

1.51. Changes to supply meter point / metering point data will occur within UKLink and MPRS and will need to be synchronised at least daily with CSS (assumption to be validated in DLS). This could be via a mechanism similar to the current daily MPRS refresh of ECOES.

Theme XI: DCC must be synchronised with the CSS

1.52. The CSS will provide the DCC with the identity of the new energy supplier at the point of CSS gate closure.

1.53. The new CSS/DCC interaction is required to enable TCOS processes to be initiated following gate closure.

1.54. The current registration data providers synchronisation between the DCC and UKLink/MPRS would not allow for registration changes to be made in time to allow suppliers to reconfigure smart meters in time for a next day switch: the access control information would not have been updated in time.

Appendix 4 – supplementary appendices

Alongside this document, we have also published four further appendices that were not of appropriate format for inclusion here. These are:

a) Reform packages spreadsheet

A detailed description of the reform packages, in tabular form.
https://www.ofgem.gov.uk/system/files/docs/2017/01/reform_packages_for_soc.xlsx

b) Architectural data model spreadsheet

A detailed description of our proposals for data architecture under Reform Packages 2 and 3, in tabular form.
https://www.ofgem.gov.uk/system/files/docs/2017/01/architectural_data_model_report_0.9.xlsx

c) Data elements within reform packages spreadsheet

A detailed description of our proposals for the data elements to be included within Reform Packages 2 and 3, in tabular form.
https://www.ofgem.gov.uk/system/files/docs/2017/01/data_elements_within_reform_packages_0.2.3.xlsx

d) Customer journeys slides

A set of slides that map out the key customer journeys within the switching process.
https://www.ofgem.gov.uk/system/files/docs/2017/01/switching_update_-_consumer_journey_experiences.pdf

e) Integrated assurance and approvals plan

A plan that consolidates all of the assurance activities associated with the Blueprint phase of the programme and shows how they will be used to inform key decisions.
https://www.ofgem.gov.uk/system/files/docs/2017/01/iaap_summary_-_sept16.pdf

f) Business process models user guide

Guide for using the the Casewise® modelling tool for business processes, referenced in appendix 2.
https://www.ofgem.gov.uk/system/files/docs/2017/01/bpdt_-_business_process_mapping_-_user_guidance.pdf

Appendix 5 – Blueprint phase detailed policy papers

Issue	Link
Solution architecture options	DA summary paper
Objections	DA summary paper
Cooling off	DA summary paper
Dual fuel – one fail/all fail	DA summary paper
Standstill	DA summary paper
Repository of agent information in the registration service, and agent appointments	DA summary paper
Differentiation by customer-type on the CSS	DA summary paper
Advance registration	DA summary paper
Supplier of last resort	EDAG summary paper
Interactions with Smart Metering	DA summary paper
Erroneous transfers	DA summary paper
Transition strategy	EDAG issues paper
Data improvement strategy	EDAG issues paper
DBT Phase Governance and Assurance strategy	EDAG issues paper
Systems integration strategy	EDAG issues paper
Post implementation strategy	EDAG issues paper
High-level Data Migration strategy	EDAG issues paper
High-level Testing strategy	EDAG issues paper
Regulatory and governance framework	EDAG summary paper Detailed annex

Appendix 6 – glossary

A

Advance registration

A registration request submitted in advance of the requested switch date.

Agent appointment

An agent appointed by an energy supplier to perform defined activities in relation to a specified meter point.

Agent

An organisation undertaking a role – and a set of activities - defined in an Industry Code such as the Balancing and Settlement Code (eg meter operator (MOP), data aggregator (DA, data collector (DC)).

Allowed revenue

The amount of money that can be earned by companies that are subject to a price control for their regulated activities over the length of a price control period.

Application Programming Interface (API)

A technical routine which allows transactions to be passed directly between computers.

B

Balancing and Settlement Code (BSC)

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

Blockchain

A blockchain is an open, distributed ledger that is able to permanently record transactions between parties in a verifiable way.

Blueprint phase

This first phase of the programme is defining new market arrangements as set out in the Target Operating Model including delivery strategy; and will include a consultation, impact assessment and decision on a preferred outcome.

C

Central switching service (CSS)

The central switching service will manage the registration of registrable measurement points to energy suppliers.

Centralised Registration Service (CRS)

The aggregation of all services (eg CSS, MIS) procured by the DCC to facilitate switching of registrable measurement points between energy suppliers.

Charging framework

A structure for determining how companies that are subject to price controls charge their customers for their regulated activities.

CMA Energy Market Investigation

The Competition and Market Authority's investigation into the supply and acquisition of energy in Great Britain. The final report was published in June 2016.

Code administrators

The organisations that are currently contracted, or otherwise held responsible, for providing administration services to facilitate progression of code change by relevant industry parties.

Code panels

A group of (often elected) industry representatives, as well as a number of other parties, including consumer bodies and Ofgem (in an observer role) that is specific to each industry code, and has a range of responsibilities set out in each particular code, including responsibility for assessing proposals to modify the codes.

Code parties

A collective term for all market participants and any organisation engaged, or wishing to engage, in the activities covered by the industry codes.

Compressed window

A time period (shorter than the current objection window) for the incumbent supplier to decide whether to object to a registration request.

Confidence code

Ofgem's voluntary code of practice for domestic energy price comparison services.

Consumer type

Consumers are classed as domestic or else non-domestic as defined in the Supply Licences.

Cooling off

The statutory process which allows domestic consumers a period, normally of 14 calendar days, during which they can cancel a contract without, as a general rule, incurring any liability.

D

Daily metered site

A gas site where the volume of gas consumed in each 24 hour period is recorded at 5am each day.

Daily read log

This log comprises 'snapshots' of a smart meter's consumption registers and other data items taken, at midnight UTC every day. 31 instances of the daily read log are stored on the smart meter at any time.

Data aggregator

The Agent appointed by an electricity supplier to aggregate consumption data to meet the requirements set out in the Balancing and Settlement Code.

Data architecture

A representation of the information used in the switching process, showing data objects, relationships between objects and data entities.

Data cleansing

A process under which erroneous data items are removed from and/or rectified in an existing dataset.

Data collector

The party appointed by an electricity supplier to retrieve and process meter readings to meet the requirements set out in the Balancing and Settlement Code.

Data and Communications Company (DCC)

DCC is the central communications body licensed to provide the communications, data transfer and management services for smart metering and other functions as specified in the Smart Meter Communication Licences.

Data Enquiry Service (DES)

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

Data improvement

The improvement of the quality of data held by industry to facilitate a switch as part of the Switching Programme.

Data steward

The actor responsible for managing the quality of data. This includes the definition and description of structured-data elements, the specification of data controls and the oversight of the stored data values.

DCC business case

This document sets out DCC's forecast activities and costs and its proposed margin and incentives relating to its role in supporting Ofgem's Switching Programme during the Transitional Phase.

DCC margin and incentives

An amount of allowed revenue that DCC can earn over and above its acceptable costs through its price control (margin), which may be subject to a framework of specific performance measures for DCC's activities in the Switching Programme (incentives).

Debt Assignment Protocol

The industry process used to transfer debts between suppliers when indebted PPM customers switch supplier.

Deemed contract

A deemed contract exists when a supplier supplies gas or electricity, to a premise or a customer, without a contract having been agreed between the parties. The terms are subject to regulation: charges cannot be unduly onerous and customers are free to switch without penalty, unless they meet the debt objection criteria.

Design Authority (DA)

The Design Authority has owned the development of the blueprint for the programme to this point.

Design Baseline 1

A documented description of the proposed switching arrangements published as part of the SOC. The aim is to provide information to help parties respond to a request for information.

Design Baseline 2

A documented description of the proposed switching arrangements. This will be a further iteration of design baseline 1 and will be published as part of the draft OBC

The aim is to provide information to help parties respond to a consultation on the preferred way forward.

Design, Build and Test (DBT) Phase

The fourth programme phase in which the new switching arrangements are physically built and tested across all parties involved.

Detailed Level Specification (DLS) Phase

The second programme phase which will define in detail how the reforms will work in practice, draft modifications to licences and industry codes and will include a consultation, an impact assessment and drafting of code and licence modifications.

Distribution network

The generic term used to refer to the electricity or gas distribution network to which the meter points at premises are connected.

Distribution Network Operator (DNO)

A person authorised by licence to own and operate an electricity distribution network. Independent DNOs (iDNOs) operate electricity networks which are embedded within a distribution network. The term DNO is used generically to cover both DNOs and iDNOs.

DSP services

The data services performed for DCC in relation to smart metering, by the Data Services Provider.

Dual fuel switch

Occurs when a consumer elects to switch both the (import) electricity and gas supplies to their premises to a single energy supplier.

E

Electricity Central Online Enquiry Service (ECOES)

A national database that holds data for each MPAN to support settlement, DUoS billing, meter asset management and retail market (including supplier switching) activities.

Enactment Phase

The third phase of the programme where modifications to industry codes and licences take effect and the procurement of any new systems are completed.

End-to-end switching arrangements

The new switching arrangements and all interfaces with them. This includes all systems, processes and the regulatory framework that are applicable to affect a consumer switching from one energy supplier to another. A new CSS would be one component within the end-to-end switching arrangements.

Energy supplier

A person authorised by licence to supply gas to premises and/or a person authorised by licence to supply electricity to premises.

Enquiry services

The IT systems used to enquire into the data that is associated with meter points, for example the registered supplier, agents and meter type. The existing enquiry services are ECOES (electricity) and DES (gas).

Equivalent terms

In relation to cooling off, the concept of re-instating a consumer to a contract that puts them in a position equivalent to where they would have been had they not switched away.

Erroneous Transfers (ETs)

This is when a consumer has their supplier switched without having given consent to that transfer.

Ex ante

Refers to a value or parameter established upfront within a price control (eg to be used in the price control period ahead).

Ex post

Refers to a value or parameter established after the event within a price control (eg following commencement of the price control period).

Export MPAN

Where a premises has generation capability, an export MPAN may be created and an export meter installed (or the export measuring capability of a smart meter may be used) to record energy flows to the distribution system.

External Design Advisory Group (EDAG)

This group provides input from across the industry on the overall design of the new arrangements, and advises on links and dependencies with other related industry functions and change projects in the Blueprint phase. This group reviews all key policy issues prior to their escalation to the Design Authority.

F

Five Case Model

A methodology recommended by central government, when developing business cases, for delivering public value from spending proposals.

Full business case (FBC)

The third and final iteration of the Switching Programme's business case, produced in line with the HMT's Five Case Model methodology.

Future Retail Regulation

Ofgem-led programme to move towards principles based regulation.

G

Gas confirmation window

In the current gas switching arrangements this is the period between the close of the objection window and the switch becoming effective.

Gas shipper

A Shipper is a company that arranges for the transporter to move the gas from the beach to the consumer. Shippers must have a licence from Ofgem.

Gas Transporter (GT)

A party that holds a Gas Transporter licence and is responsible for the transportation of gas through the gas transmission and distribution network in GB. Independent GTs (iGTs) operate networks which are embedded within a gas network. The term GT is used generically to cover both GTs and iGTs.

Gateway review

An independent review of the programme arrangements involving interviews with a wide range of stakeholders to gauge the extent to which they feel effectively engaged with the programme and have sufficient opportunity to provide input.

H

Half-hourly settlement

The part of the electricity settlement process which uses actual half-hourly meter readings to determine how much a supplier's consumers use in each settlement period.

I

Independent supplier forum

Ofgem and the Department for Business, Energy, and Industrial Strategy (BEIS) hold forums to openly discuss policy areas affecting independent suppliers, what next steps suppliers could be expected to take and how they might engage with us on specific issues.

Index-linked costs

The adjustment of cost variables within a price control so that the variable rises or falls in accordance with a specified economic index.

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.

Infrastructure and Projects Authority

Provides expertise in infrastructure and the financing, delivery and assurance of major projects, to support more effective management and delivery across government.

Instant objection

An objection raised by an Energy Supplier in real-time.

L

Large supply point

A supply point consuming more than 73,200 kWh per annum.

Licence exempt network

A licence exempt network is a local distribution system not covered by the licensing requirements. In May 2008, the European Court of Justice delivered a judgement which determined the right of all consumers to choose their supplier freely, and all suppliers to deliver to their customers freely, regardless of the type of distribution system.

LSP nomination

The process by which gas shippers request a quotation from a GT for shipping gas to a nominated Large Supply Point.

M

Market Intelligence Service (MIS)

The MIS would enable authorised users to access data needed to facilitate a switch. It would replace the ECOES and DES enquiry services under Reform Package 3.

Master Registration Agreement

The agreement that sets out terms for the provision of metering point administration services (MPAS registrations), and procedures in relation to the change of supplier to any electricity metering point.

Measurement class

A classification of metering systems which indicates how electricity consumption is measured.

Meter Asset Manager (MAM)

A party approved under the MAMCoP to undertake installation and management (including maintenance) of gas meters.

Meter Asset Provider (MAP)

A party that owns, provides and/or leases meter assets to energy suppliers or consumers.

Meter Communications Provider (MCP)

A party responsible for communications services to enable the interchange of information between a meter and a supplier or its data collection agent.

Meter Operator (MOP)

A party approved under the BSC responsible for installing and maintaining electricity meters. (In future MOP may be used as a harmonised term covering both gas and electricity).

Meter point address

The address of the premises where a meter point is located. Separate addresses may be recorded to describe (a) the premises served by the energy supply (which will generally be the postal address recognised by the consumer) and (b) the location of the meter as recorded by the network operator.

Meter Point Administration Number (MPAN)

A unique reference code for each Metering Point connected to the electricity network.

Meter Point Administration Service (MPAS)

Each DNO operates the MPAS for its region, utilising MPRS.

Meter Point Registration Number (MPRN)

The unique reference code for each Supply Meter Point connected to the gas network.

Metering Point Registration System (MPRS)

The system employed by each MPAS operator.

Meter points

Generic term used for supply meter points (gas) and metering points (electricity).

Meter serial number

An alpha numeric identifier that is assigned to the meter at manufacture and is typically stamped or indelibly marked onto the meter, but is not a unique identifier.

Meter technical details

Means all technical details (including Outstation channel mapping) of a Metering System required to enable metered data to be collected and correctly interpreted from that Metering System as referred to in BSC subsidiary documents: BSCP20, BSCP502 or (as the case may be) BSCP504.

Meter time-switch code

A code which defines how time of use consumption is allocated in the settlement process.

Metering equipment asset

Gas and electricity meters and other assets utilised for measurement or data storage that over time may be reused at multiple supply meter point / metering points.

Metering equipment installation (MEI)

A meter or number of meters, ancillary equipment and fittings that are installed at a gas supply meter point or electricity metering point for the purpose of metering (which may include services other than measurement, such as load control for a customer Premises).

Metering Point

The point at which an electricity service enters a premises and can be measured.

M-number helpdesk

A customer service point to provide consumers with their MPxN and supplier details.

MPxN

A generic term referring to either an MPAN or MPRN.

Master Registration Agreement Service Company (MRASCo)

The role of MRASCo is to administer the MRA and associated products and provide secretariat functions to MRA Executive Committee (MEC).

N

Network charges

The charges raised by network operators to recover the costs of building, operating and maintaining their networks.

Network operators

A generic term referring to a gas transporter or distribution network operator.

Non-daily metered site

A gas site where the volume of gas consumed is not recorded at fixed, daily intervals. The meter is read periodically (e.g. quarterly) or when a consumer switches supplier or consumption is estimated, based on previous usage and consumption profiles.

O

Objections

An objection may be raised by the incumbent energy supplier to block a registration request from proceeding. Objections can only be raised under the circumstances set out in standard condition 14 of the gas and electricity supply licences.

Outline business case (OBC)

The second iteration of the Switching Programme's business case, produced in line with the HMT's Five Case Model methodology.

P

Pass-through costs

Costs for which companies that are subject to price controls can vary their revenues in line with actual costs within a price control period, eg because these costs are not within the regulated company's control or because they have been subject to other measures of cost regulation.

Plot address

An address given by a developer to a premises before it is allocated a full postal address by a local authority. A plot address usually corresponds to a plot number and development name, without street address and postcode.

Postal address

An address with street name and postcode given to a premises, usually by a local authority.

Programme Board

The Programme Board is chaired by the programme's senior responsible owner (SRO), who has decision-making authority across the Programme. The board is responsible for advising the SRO and approving the programme's progression from one phase to the next.

Premises served

The place for which energy is supplied by the energy supplier and is consumed by the energy consumer. The premises served are identified by a plot address or a postal address.

Prepayment meter

A prepayment meter is a type of meter that allows consumers to pay as they go for their energy. A smart meter may be configured to operate as a prepayment meter.

Price comparison website (PCW)

PCWs are third-party intermediaries (TPIs) in the domestic market that offer consumers a place to view and sign up to tariffs offered by energy suppliers.

Price controls

A method of setting the amount of money (allowed revenue) that can be earned by companies over the length of a price control period for their regulated activities. These are used to regulate natural monopolies.

Priority Services Register

A register of consumers in vulnerable situations to which energy companies provide help in accessing services and information to manage their energy supply, or additional help when there is an interruption to their supply.

Procurement framework

The procurement framework sets out the framework for DCC's role in procuring the new switching arrangements.

Profile class

A classification of profiles which represents an exclusive category of customers whose Consumption can be reasonably approximated to a common profile for Settlement purposes.

Project Nexus

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

R

Reform packages

Each reform package in our shortlist represents a unique combination of the reform options carried forward from our longlist.

Registrable measurement point (RMP)

The entity associated with a supply meter point or metering point which is registered to an energy supplier.

Registration

A record of the energy supplier registered to a supply meter point or metering point for a specified period of time (which may be from one effective date to now).

Registration agent

The operator of the CSS (or in the current arrangements, UKLink or MPRS).

Registration request

A request sent by the gaining supplier to the registration agent to request registration to a registrable measurement point.

Related MPANs

Two or more Metering Points serving the same consumer, located at the same premises, where the charges for electricity supplied through those Metering Points are mutually conditional (e.g. an Economy 10 meter with separate heating and base load registers).

Relative price control

A method of setting the amount of money (allowed revenue) that iDNOs and iGTs can earn by capping the charges to their customers for using their networks at a level broadly consistent with the equivalent DNO and GT charges, respectively.

RIIO ED1

The price control that sets the outputs that the 14 electricity DNOs need to deliver for their consumers and the associated revenues they are allowed to collect for the eight-year period from 1 April 2015 to 31 March 2023.

RIIO GD1

The price control that sets out the outputs that the eight gas distribution networks need to deliver for their consumers and the associated revenues they are allowed to collect for the eight-year period from 1 April 2013 until 31 March 2021.

S

SECAS

The company appointed and contracted to SECCo to carry out the functions of the Code Administrator and the Code Secretariat – Gemserv.

Settlement

Means the determination and settlement of amounts payable in respect of trading charges (including reconciliation charges) in accordance with the relevant industry code requirements.

Settlement arrangement

The regulations, systems and process which prescribe how settlement is performed.

Settlement parameters

Parameters used in settlement to determine the volume of energy to be allocated to a meter point.

Significant code review (SCR)

The mechanism 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.

Smart Energy Code (SEC)

The Smart Energy Code (SEC) came into force on 23 September 2013, when DCC's licence was granted. The SEC is a multiparty contract which sets out the terms for the provision of 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 Communication Licence

The Smart Meter Communication Licences granted pursuant to Sections 7AB(2) and (4) of the Gas Act 1986 and Sections 6(1A) and (1C) of the Electricity Act 1989.

Smart Meter Installation Programme (SMIP)

A programme of work led by the Department of Business, Energy and Industrial Strategy (BEIS) to implement arrangements that support the roll-out of smart meters.

Smart meter inventory

An inventory of devices which comprise smart metering systems which are (or are to be) enrolled with DCC. The smart metering inventory also holds information about devices and their inter-relationships.

Smart meter

A meter which has two-way communications allowing remote retrieval of meter reads and remote configuration of its operational parameters. Smart meters must comply with SMETS 1 or SMETS 2 specifications.

Smart Metering Equipment Technical Specifications: Version 1 (SMETS 1)

The first generation of smart meters installed in homes in GB. At present, SMETS 1 meters are not operated by DCC. This may change as a result of DCC's enrolment and adoption project.

Smart Metering Equipment Technical Specifications: Version 2 (SMETS 2)

The second generation of smart meters installed in homes in GB. SMETS 2 meters are operated by DCC.

Solution architecture

The information and communications technologies deployed to support a set of business processes.

Sourcing Strategies

Sourcing Strategies describe the procurement approach and procurement process for each of the procurement projects that will deliver components of the CRS solution.

Standard variable tariff

This is a tariff that a consumer will be put on if they have not chosen a specific energy plan. The consumer will be on this tariff until they make a choice to take up another offer and it won't expire. It's an energy supplier's basic offer.

Standstill period

A time period following the registering of an RMP during which a new registration request will take effect.

Strategic outline case (SOC)

This document - the first iteration of the Switching Programme's business case, produced in line with the HMT Five Case Model methodology.

Supplier of last resort (SoLR)

A supplier appointed by Ofgem to assume 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 licence

A licence for the supply of electricity or gas granted by Ofgem.

Supply licence conditions

Applies to electricity licencees and gas licencees. They place rules on how holders can operate within their licence.

Supply Meter Point

The point at which a gas service enters a premises and can be measured.

Supply Point Administration Agreement (SPAA)

Industry code which sets out the inter-operational arrangements between gas suppliers and GTs. All domestic gas suppliers and all gas transporters are required by their licences to sign and comply with this multi-party agreement.

Switch confirmation

The state achieved once a registration request has been validated and no objection has been raised by the incumbent supplier.

Switch execution

The fulfilment of the switch once gate closure has passed.

Switch notices

Messages sent to parties impacted by a switch to notify them of a confirmed / executed switch.

Switch read

The meter read which represents the cessation of energy supply by one supplier and the start of supply by another.

Switching arrangements

The business processes, systems and regulations by which a consumer switches from one energy supplier to another.

Switching Programme Delivery Group (SPDG)

The delivery group provides high-level industry support to the Switching Programme, ensures it maintains momentum and addresses any delivery issues.

Switching Programme Steering Group

The steering group brings together senior stakeholder representatives in order to maintain industry support for the programme.

Switching services

The systems that manage the process of switching energy suppliers.

Systems integration function

A function which ensures that different market participants are ready to deliver their parts of the end-to-end solution when necessary and to an appropriate quality. It relates to activity outside construction of the central switching system. It may be performed by a System Integrator.

T

Target Operating Model (TOM)

A document published by Ofgem in February 2015, and updated in November 2015, to act as a reference and a guide for the design and implementation of the programme.

Technical Design Authority

This group will replace the Ofgem Design Authority, and is intended to include a relatively small number of experts from different industry participants. It will own the detailed design baseline to be developed during the DLS phase, and will be responsible for ensuring the DLS products align, both with each other and with the overall programme blueprint.

The Green Book

The Green Book is the guidance produced by HM Treasury for carrying out appraisal and evaluation of government policies, projects or programmes.

Third-party intermediaries (TPIs)

An intermediary between a consumer and an energy supplier, providing advice and assistance to the customer in relation to their energy supply needs (eg a PCW or an energy broker).

Traditional meters

Meters which do not conform to the SMETS specifications for smart meters.

Transitional Change of Supplier (TCOS)

The procedure operated by DCC to allow the security credentials on a smart meter to be exchanged when a consumer switches energy supplier.

Transitional Phase

This refers to the Blueprint, Detailed Level Specification, and Enactment phases of the Switching Programme collectively.

Transmission networks

This includes Britain's electricity transmission network which transmits high-voltage electricity from where it is produced to where it is needed throughout the country. It also includes Britain's high pressure gas network which transports gas from the entry terminals to gas distribution networks, or directly to power stations and other large industrial users.

U

UKLink

System operated by Xoserve for energy settlements, supply point administration and other functions of the GB gas market.

Uniform Network Code

Comprises a legal and contractual framework to supply and transport gas. It governs processes such as the balancing of the gas system, network planning and the allocation of network capacity.

X

Xoserve

Xoserve provides a range of essential services to support the GB gas industry including billing services, managing the booking of capacity, running the gas settlement systems and managing the change of supplier process.