



**ofgem E-Serve**

Promoting choice and value  
for all gas and electricity customers



# Smart Metering Implementation Programme

## Response to Prospectus Consultation

### Supporting Document 2 of 5 Rollout Strategy

March 2011

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## Executive Summary

The Government's vision is for every home and many businesses and public sector users in Great Britain to have smart energy meters, giving people far better information about, and control over, their energy consumption than today. Realising this policy goal will be a major undertaking, which will require the replacement of approximately 53 million meters with new smart meters, involving visits to over 30 million households and businesses.

This document sets out the Government's conclusions on how industry should be obliged to deliver this major rollout programme and the steps to be taken to protect consumers and promote the delivery of benefits. These conclusions are based on analysis of extensive evidence collected through responses to the July 2010 Prospectus consultation and through engagement with a wide range of stakeholders.

### *Obligations on energy suppliers to deliver the rollout*

To deliver the rollout in the domestic and smaller non-domestic sectors, the Government has concluded that energy suppliers should install smart metering equipment meeting defined technical specifications. At a minimum, this will involve a completion target and mandatory reporting of progress by suppliers. The Government's intention is to consult on an obligation on suppliers to effectively complete the rollout in 2019.

It is vital that there is a solid foundation before the mass rollout commences, such that the market is ready. This includes putting in place arrangements to support the technical and commercial interoperability of smart metering equipment, and ensuring other aspects of market and consumer readiness. The Government does not propose at this point to oblige suppliers to install specific volumes of smart meters during this 'foundation' stage. Instead, suppliers will have broad flexibility over the pattern of their installations during the early stages of the rollout. Nevertheless, suppliers and other industry parties may be required to conduct activities and deliver outputs in accordance with the programme's approach to building market readiness to be developed in the next phase.

From the start of the mass rollout, currently envisaged to be in the second quarter of 2014, meters installed in domestic and smaller non-domestic sites, whether new or replacement, should be compliant with the required technical specifications.

### *Obligations on energy suppliers to provide in-home displays*

As part of the rollout, the Government has concluded that suppliers should provide their domestic customers with a compliant in-home display (IHD), unless the minimum information set for their fuel is already accessible to the consumer via an existing compliant IHD. This will be a key element in promoting greater consumer awareness of energy usage. Suppliers will be responsible for maintenance of IHDs for a year from the installation of the associated smart metering system.

### *Consumer engagement and protection*

Protecting the interests of consumers, including promoting positive consumer engagement, will be vital to delivering smart metering benefits in terms of reductions in energy consumption and carbon emissions. The Government welcomes Ofgem's recent "Spring Package" proposals for updating the consumer protections in the gas and electricity supply licences to reflect a smart metering environment. The Government and Ofgem will keep under review the need for further protections.

The Government has concluded that energy suppliers should develop and comply with a new licence-backed code of practice governing the installation of smart metering in the domestic and smaller non-domestic sectors. This will help to ensure consumers receive a good standard of service when their new meters are installed. The code will include restrictions on unwelcome sales activities at the point of installation and on upfront or one-off charging for smart metering equipment.

The programme will develop a consumer engagement strategy. Suppliers will have an important role in promoting engagement among their customers. In addition, the Government considers that there is a strong case for some elements of consumer engagement to be carried out centrally or on a coordinated basis. This will be particularly important in promoting consumer confidence and enabling all consumers to access the potential benefits of smart metering. Further work will be carried out as a priority in the next phase to develop this strategy.

### *Monitoring and reviewing rollout*

Throughout the foundation stage, the programme will monitor the progress of the rollout, including the consumer experience. This will be informed by, among other things, data from suppliers, who will be required to report regularly on their rollout programmes. Drawing on this analysis and evidence, the programme will review progress during the foundation stage. The Government may propose modifications to the rollout strategy where these would address issues identified or provide for enhanced benefits.

Once the Government has put in place the licence obligations on suppliers to deliver the rollout of smart metering, Ofgem will monitor compliance with suppliers' obligations as part of its enforcement work.

### *Operational rollout issues*

In undertaking meter replacements, operational issues will inevitably be uncovered at some consumer premises that require corrective action. While largely understood, these issues could impact on the efficiency and consumer experience of the rollout.

The programme will help ensure that responsibility for resolving these issues is understood, and will seek assurance that parties who are responsible for resolving the issues have appropriate plans and processes in place. To this end, the programme will establish a new stakeholder group to facilitate the identification and discussion of these issues.

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## 1. Introduction

1.1. The Government's vision is for every home in Great Britain to have smart energy meters, with businesses and public sector users also having smart or advanced energy metering suited to their needs. The rollout of smart metering will play an important role in Britain's transition to a low-carbon economy, and help us meet some of the long-term challenges we face in ensuring an affordable, secure and sustainable energy supply.

1.2. To implement this vision, the Government has established a central change programme - the Smart Metering Implementation Programme<sup>1</sup> ("the programme"). The programme is responsible for overseeing the development and implementation of the policy design, including establishing the commercial and regulatory framework to facilitate the rollout. Ofgem E-Serve has worked with the Department of Energy and Climate Change (DECC) during the policy design phase to inform Government conclusions on the policy framework for implementation. Going forward, DECC will be directly responsible for managing the implementation of the programme.

1.3. The Prospectus for the programme, published in July 2010, set out for consultation a range of proposals on the policy design for the implementation of electricity and gas smart metering in the domestic and smaller non-domestic<sup>2</sup> sectors. The installation of advanced meters<sup>3</sup> for larger non-domestic sites<sup>4</sup> has already been mandated for completion by April 2014.

1.4. The Government's conclusions on the policy design for the implementation of smart metering in the light of consultation are set out in the "Response to Prospectus Consultation: Overview Document". The new obligations to deliver the policy design will be introduced principally using powers under the Energy Act 2008, and will be subject to the appropriate consultation processes.

### The purpose of this document

1.5. This document is the second of five supporting documents to the Government's response to consultation. It relates to the strategy for the rollout of smart metering, as set out in "Delivering smart metering to GB consumers" and "Approach to the rollout of smart meters", Chapters 2 and 3 respectively of the Overview document.

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<sup>1</sup> *Smart Metering Implementation Programme: Prospectus*, DECC/Ofgem, July 2010

<sup>2</sup> Electricity customers on profile classes 3 and 4 and non-domestic gas customers with consumption of less than 732 MWh per year.

<sup>3</sup> Advanced meters are defined in supply licence condition 12 as being able to provide measured consumption data for multiple time periods (at least half hourly for electricity and hourly for gas) and to provide the supplier with remote access to the data.

<sup>4</sup> Electricity customers on profile classes 5 to 8 and non-domestic gas customers with consumption of 732 MWh to 58,600 MWh per year.

1.6. Each supporting document complements the Overview document in the following ways. First, by explaining further the evidence and reasoning behind the conclusions set out in the Overview document. Second, by setting out related but more technical or detailed conclusions together with a description of the evidence and reasoning. Third, by explaining how conclusions relate to the proposals set out for consultation in the Prospectus and its supporting documents. Fourth, by providing a structured summary of responses to the consultation.

## **Stakeholder engagement**

1.7. During the course of this policy design phase, the programme's analysis of issues relating to the rollout of smart metering has been informed primarily by stakeholder responses to the Prospectus consultation. We also received responses to an open letter requesting information on the potential for acceleration of the rollout. In addition, we held a number of well-attended workshops and bilateral meetings with individual stakeholders and representative groups.

1.8. We have involved consumer representatives in a variety of ways. This includes via the programme's Consumer Advisory Group, and Ofgem's Disability Advisory Forum and Small and Medium Users Group. We have drawn on research conducted with Ofgem's Consumer First Panel. We have also drawn on lessons from the Energy Demand Research Project (EDRP) to inform programme development.

## **The structure of this document**

1.9. This document is structured as follows:

- Chapter 2 sets out the obligations on suppliers to deliver the rollout of smart metering. This covers both the domestic and smaller non-domestic sectors
- Chapter 3 sets out the obligations on suppliers to provide and maintain IHDs. This covers both the point of installation and after the installation visit
- Chapter 4 sets out the approach to protecting consumers and promoting consumer engagement. It also sets out obligations on suppliers governing the installation of smart metering
- Chapter 5 sets out the arrangements for reviewing the progress of the rollout and monitoring compliance with obligations
- Chapter 6 discusses a range of operational aspects of rollout
- Chapter 7 sets out the proposed next steps for the implementation of the aspects described in the preceding chapters.

1.10. Appendix 1 sets out our analysis of industry and other stakeholder submissions on the scope for accelerating the rollout compared to previously published targets. Appendix 2 sets out analysis of potential interim interoperability arrangements. Appendix 3 provides a summary of responses received to relevant consultation questions. Appendix 4 provides a glossary of terms used in this document.

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## 2. Obligations on suppliers to deliver rollout

This chapter sets out the Government's conclusions on the obligations that should be placed on suppliers to deliver the rollout of smart metering in the domestic and smaller non-domestic sectors. This includes discussion of the target for completion of the rollout and factors that could shape the volume and pattern of installations. This chapter also sets out the approach to building a solid foundation for the mass rollout.

2.1. The Government has decided that suppliers will be responsible for delivering smart metering to domestic and smaller non-domestic consumers in Great Britain. There are a range of ways in which suppliers could be obliged to deliver and complete the rollout of smart meters and associated communications equipment, ie the wide area network (WAN) module and the home area network (HAN). Regulatory obligations will help make sure suppliers do what is necessary to deliver the rollout in a way that meets the programme's objectives. This includes the important period before the market is ready for the mass rollout to commence.

2.2. The obligations relating to provision of an in-home display (IHD) are set out in the next chapter.

### Targeting framework

2.3. To deliver the rollout, suppliers will be required to install smart meters for their customers. This section discusses the obligations to be placed on suppliers to drive the completion of the rollout and the process by which these will be set. We refer to these obligations as the targeting framework. We first consider the approach for the domestic sector and then look at where a different approach might be appropriate for the smaller non-domestic sector.

### Approach for the domestic sector

#### *Prospectus proposals*

2.4. The Prospectus set out the Government's desire to accelerate completion of the rollout compared to the previously published target of the end of 2020. The aim was to secure early delivery of benefits, subject to supporting the delivery of the overall programme business case and protecting the interests of consumers.

2.5. The Prospectus challenged industry to examine the opportunities for realising more ambitious but achievable targets for the rate at which suppliers must install smart meters. It also requested views on how the rollout timeline could be brought forward and on the impact this would have. We also published an open letter<sup>5</sup> alongside the consultation inviting views on a number of rollout scenarios.

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<sup>5</sup> *Rollout information request*, Ofgem, September 2010



2.6. To achieve the goal of rolling out smart meters, the Prospectus proposed to require suppliers to meet appropriate target profiles. As a minimum, we proposed to obligate suppliers to take all reasonable steps to install smart meters and associated communications equipment to their domestic customers by a target date.

2.7. The Prospectus sought views on two broad approaches to providing additional certainty to the Government about progress during the rollout. Under the first approach, suppliers would report on their progress towards a target for the completion of the rollout. The alternative involved an obligation on suppliers to achieve interim targets in addition to the completion date.

### *Evidence*

2.8. Industry and other stakeholders provided a large amount of data and analysis to the programme in response to both the Prospectus consultation and the open letter request for information. This has helped inform our analysis of rollout profiles.

2.9. Respondents to consultation expressed broad support for our proposal to require suppliers to take all reasonable steps to install smart meters for their domestic customers by a specified target. This included the majority of suppliers, consumer groups, communications service providers, telecommunications companies, network operators and metering companies. A small majority of suppliers requested that the programme define what is meant by 'all reasonable steps'. They felt that this would provide clarity on the precise nature of the obligation that the programme proposed to place on suppliers. Around half of consumer groups also advocated the publication of guidance. It was suggested that this would enable the programme to set a high threshold for what constitutes 'all reasonable steps'.

2.10. Respondents also suggested a range of options for defining a completed installation. One key theme was that the definition should include testing as well as installation of smart meters and associated communications equipment. A second point, raised in particular by the majority of consumer groups, telecommunications companies, metering companies and communications services providers, was that the consumer should be provided with appropriate information, advice and support at point of installation.

2.11. A majority of respondents to consultation expressed support for establishing interim targets. These respondents included most consumer groups, telecommunications companies, meter operators and installers as well as service providers. It was felt that interim targets would provide the central data and communications body - "DataCommsCo" (DCC) - with expected volumes of meters to serve and would prevent suppliers from delaying installations until the end of the rollout period. Most suppliers as well as a small number of service providers and meter manufacturers opposed interim targets. They argued that such targets would reduce supplier flexibility and increase the costs of the programme. One consumer group also expressed reservations, particularly for the early stages of rollout when aggressive targets might harm the consumer experience.

*Government conclusions*

2.12. The Government has concluded that there should be a set of obligations placed on suppliers in the domestic sector to complete the rollout of compliant smart metering equipment (ie equipment meeting the relevant technical specifications). One key element of the targeting framework will be a completion date. Evidence provided to date by industry and from international deployments indicates that a range of timescales are possible for the effective completion of the rollout. This shows that acceleration is possible such that the rollout could be effectively completed in 2019, a full year or more ahead of previously published targets. Our analysis of the evidence can be found in Appendix 1.

2.13. The Government will bring forward a proposal to require suppliers to take all reasonable steps to complete the rollout for their domestic customers in 2019. Such an obligation would provide a strong incentive on suppliers to deliver the rollout. A supplier that failed to take all reasonable steps to roll out smart meters to their domestic customers by the target date would be in breach of their licence conditions. Consequently, Ofgem could, among other potential enforcement actions, impose a penalty of up to ten per cent of the turnover of the licence holder. The programme will consider the need for other incentives in support of obligations on suppliers.

2.14. In line with decisions the Government has taken previously<sup>6</sup>, its approach is based on retaining a competitive market for metering, with the suppliers having responsibility under their licences for the rollout of smart metering. As in previous consultations, a number of respondents favoured including smart meters within the regulated asset bases of network operators. However, no new arguments or evidence were presented such as to significantly strengthen the case for re-regulating the metering market.

2.15. The Government has also concluded that larger suppliers should be required to have in place a plan realistically capable of fulfilling their obligation to complete the rollout. Suppliers will be required to submit these plans to Ofgem, to report on progress against them on a regular basis and to submit updated plans annually. The Government has concluded that smaller suppliers are, for these purposes, in a relevant different category. They should therefore be exempted from this obligation on the basis that it would represent a disproportionate burden relative to these suppliers' potential impact on the achievement of the programme's goals. Reporting obligations on suppliers are discussed further in Chapter 4.

2.16. During the rollout, the programme will want reassurance that suppliers are making progress towards the completion target. The Government has concluded that by the start of the mass rollout, there should be an obligation that any meter installed in domestic and non-domestic sites, whether new or replacement, must comply with the relevant technical specifications. It is currently envisaged that the market will be ready for the mass rollout from the start of the second quarter of 2014. The timing of introduction of the new and replacement obligation will be kept

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<sup>6</sup> *Towards a smarter future: Government response to the consultation on electricity and gas smart metering*, DECC, December 2009

under review. As with the obligation to complete the rollout by a target date, the new and replacement obligation would also be subject to an 'all reasonable steps' test.

2.17. At this stage, the Government is not proposing to introduce interim targets, but will keep the case for that under review. Such targets would impose more constraints on how suppliers plan their rollout programmes, which could reduce the efficiency of the rollout and increase costs to consumers. On the other hand, interim targets could drive suppliers to bring forward investment decisions, mitigating the risk of unacceptable delays to deployment.

2.18. The targeting framework for the domestic sector does not provide exceptions for particular consumer groups or installation types. The 'all reasonable steps' test will enable account to be taken of cases where installation may be difficult. At this stage, the programme does not propose to issue guidance on the minimum steps suppliers would need to follow to fulfil the 'all reasonable steps' test.

2.19. Under existing legislation, suppliers can apply for a warrant where they need to access a property for the purposes of replacing a meter. We would expect suppliers to only seek warrants where currently it is necessary for reasons other than installing smart meters. For example, these could include situations where the supplier has reason to suspect meter tampering.

#### *Next steps*

2.20. The Government's intention is to bring forward proposed licence changes for consultation later this year. The targeting framework can then be introduced into suppliers' licences in the first half of 2012.

2.21. Compliance with these obligations will be monitored by Ofgem as part of its enforcement work. A key input to this compliance regime will be the definition of what constitutes a "completed installation". In the next phase, the programme will develop such a definition, taking into account relevant evidence from stakeholders.

2.22. In developing the detail of the new obligations to be placed on suppliers, the Government will aim to establish the right balance of obligations and incentives such that all suppliers play their part. In doing so, the Government and Ofgem will monitor the effects that the rollout is having on the effectiveness of the retail energy market and, if necessary, adjust supplier obligations to protect consumer interests.

2.23. In the next phase, the programme will undertake further work to develop the details of the obligation on larger suppliers to maintain, submit and report on their rollout plans. This will include work to determine an appropriate threshold defining a smaller supplier in the context of their exemption from the obligations around maintaining and submitting a rollout plan.

2.24. The obligations to install smart meters will be placed on suppliers. We recognise that there are circumstances where suppliers and metering businesses

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encounter technical and commercial challenges when seeking to replace meters operated by independent gas transporters (iGTs) and independent distribution network operators (iDNOs). The programme will undertake further work in the next phase to ensure that all consumers can access the benefits of smart metering, including those connected to independent networks.

### **Approach for the smaller non-domestic sector**

2.25. The smaller non-domestic sector has a number of characteristics that distinguish it from the domestic sector. This includes existing deployments of advanced metering. The rollout of smart metering to smaller non-domestic sites therefore warrants a slightly different approach to that for the domestic sector.

#### *Prospectus proposals*

2.26. In recognition that some smaller non-domestic sites already have meters with advanced rather than full smart functionality, the Prospectus set out the Government's decision that advanced meters can remain, or continue to be installed under two sets of circumstances:

- Where an advanced meter is installed before April 2014 and the customer wishes to retain it, or
- Where an advanced meter is installed after April 2014 under pre-existing contractual arrangements.

2.27. The Prospectus proposed that there should be no additional exceptions to the obligation on suppliers to install compliant smart meters in the smaller non-domestic sector, other than those for advanced metering. Subject to those exceptions, we proposed that suppliers should be required to take all reasonable steps to install smart meters for their smaller non-domestic customers. We requested views on whether any other differences of approach were appropriate for the smaller non-domestic sector.

#### *Evidence*

2.28. Among respondents to the consultation, there was strong support for the proposal that there should be no additional exceptions to those previously proposed for the smaller non-domestic sector. This included a majority of larger suppliers, telecommunications companies and network operators. Around half of smaller suppliers also supported our proposal. These respondents felt that our proposal offered appropriate flexibility to suppliers and consumers.

2.29. Among those respondents who opposed our approach, the majority felt that there should be no exceptions in the smaller non-domestic sector. These respondents included some smaller suppliers and a small minority of telecommunications companies and metering providers. They argued that exceptions would increase

complexity and prevent some smaller non-domestic customers from accessing the benefits of smart metering. A small number of respondents felt that the rollout of advanced metering should be allowed to continue after April 2014.

2.30. As in the domestic sector, nearly all non-domestic suppliers opposed the introduction of interim targets. Suppliers felt that they should have flexibility to deliver the rollout in the most efficient and cost effective way possible and that the imposition of interim targets may be counterproductive to this. In particular, it was suggested that smaller suppliers may be unable to meet mandatory interim targets as they rely on metering providers whose resources may be stretched. Smaller suppliers in the smaller non-domestic sector argued that they could be particularly exposed if interim targets were to be set as a percentage of their customer base as they are more affected by customer churn. There was strong support from the other respondents who commented for the introduction of interim targets in order to encourage and monitor the progress of the rollout.

#### *Government conclusions*

2.31. The Government is not persuaded that further exceptions should be introduced for smaller non-domestic sites, beyond those already identified around advanced metering. The Programme has considered the technical issues raised in relation to installing smart meters at certain smaller non-domestic sites. These are discussed further in the "Design Requirements" supporting document.

2.32. The Government has concluded that suppliers should have an obligation to take all reasonable steps to install smart metering equipment to their smaller non-domestic customers on the same timescales as for the domestic sector, subject to the following exceptions:

- The first exception is where advanced metering is installed before April 2014 and the consumer wishes to retain it. This means that where a customer is happy with their advanced meter, the supplier is not obliged to replace this meter until the end of the rollout. Suppliers will not be obliged to exchange on request an advanced meter for a smart meter from April 2014. Rather, suppliers would have until the end of the rollout to meet such a request. This should reduce the risk of investment in advanced metering before April 2014 being stranded. It will also allow suppliers to focus on replacing dumb meters, thereby delivering earlier benefits. Nevertheless, subject to their contractual obligations, customers may be able to seek a smart meter from another supplier or meter provider.
- The second exception applies where advanced metering is installed after April 2014 under pre-existing contractual arrangements. This recognises that customers may wish to have a consistent metering solution across their smaller non-domestic sites. In these circumstances, complexities could be introduced if some sites are required to have smart meters while others have advanced meters. This exception allows for a managed transition within these groups. For these purposes, a "pre-existing contractual arrangement" means a legally-binding contractual arrangement between two or more parties for the provision of an advanced meter to an existing or future site, which was entered into on or before

April 2014. The definition of an advanced meter is the same as that which is currently set out in gas and electricity supply standard licence condition 12.

2.33. These exceptions will allow the market to continue to deliver advanced metering and the related early carbon savings in the short to medium term.

2.34. In line with the domestic sector, the Government's current plan is that from the start of the mass rollout, envisaged to be in the second quarter of 2014, any new or replacement meter installed in smaller non-domestic premises must comply with the smart metering technical specifications. Suppliers would be required to take all reasonable steps to meet this obligation, except where an advanced meter is installed after April 2014 under pre-existing contractual arrangements.

2.35. As for the domestic sector, larger suppliers should have in place a plan realistically capable of fulfilling their obligation to complete the rollout to their smaller non-domestic customers. These suppliers would be required to submit their plans to Ofgem, report on progress against them on a regular basis and update them annually. The Government has concluded that smaller suppliers are, for these purposes, in a relevant different category. They should therefore be exempted from this obligation on the basis that it would represent a disproportionate burden relative to these suppliers' potential impact on the achievement of the programme's goals.

#### *Next steps*

2.36. As for the domestic sector, the Government's intention is to bring forward proposed licence changes for consultation later this year, with a view to the targeting framework being introduced into suppliers' licences in the first half of 2012.

### **Building a solid foundation for the rollout**

2.37. Suppliers will need time to prepare their individual rollout programmes and then to ramp up their operations to the installation volumes that will characterise the mass rollout of smart meters. During this period, it is important that consumers continue to be protected and the competitive supply market functions smoothly. In particular, consumers should be able to continue to switch supplier in a straightforward way. Fundamental to achieving this is that, on change of supplier, the incoming supplier can use the smart meter including all of its smart functionality and can agree reasonable commercial terms with the meter owner for the use of their asset. Taken together, these technical and commercial aspects are referred to as 'interoperability'.

#### *Prospectus proposals*

2.38. To advance the start of rollout, the Prospectus proposed a staged approach to implementation. Under this approach, suppliers would be required to start rolling out smart meters to their customers from the summer of 2012, before DCC begins providing services.

2.39. The Prospectus noted that interoperability would become more important in a smart metering environment than at present; and would be important to facilitate customer switching, protecting consumers and promoting competition. Once available, DCC services would provide a high level of interoperability, but prior to this, suitable interim interoperability arrangements would be needed for the domestic sector. We identified possible mechanisms for supporting interoperability and areas for further consideration. We also asked how interoperability could be supported in the smaller non-domestic sector.

#### *Evidence*

2.40. We have undertaken detailed analysis of responses to consultation as well as engagement with stakeholders through expert groups and workshops. In addition, we received responses from industry parties and potential service providers to information requests covering the costs, benefits and timescales associated with a set of options for supporting interim interoperability.

2.41. Most of the larger suppliers expressed concerns about the prospect of a large-scale rollout being mandated before the end-to-end smart metering system is in place and DCC begins providing services. A key concern was the uncertainty of pre-DCC arrangements, in particular the absence of the requisite technical and commercial frameworks and the risks that this could pose to suppliers. Furthermore, consumer groups and others expressed concern that the rollout of high volumes of smart meters in the period before DCC is operational without these arrangements being in place could result in a negative customer experience, especially if a meter change is required on change of supplier. Suppliers also called for sufficient time to be allowed for industry to prepare end-to-end systems and processes for mass rollout. Several respondents suggested that the period before DCC could best be used to build industry and consumer confidence in smart metering, with limited volumes of smart meters being deployed. This was viewed as very important to preserve the consumer experience.

2.42. Some larger suppliers argued that a two-stage approach could increase the overall costs of the programme and slow it down due to the need to switch over communications to DCC, and potentially carry out second visits as a result of technical issues with either the smart meter or communications. There was also some concern that disproportionate attention and resources would be given to the interim solution and distract attention from the development of the enduring solution.

2.43. Respondents suggested a number of areas as being important for supporting interoperability. A large minority of respondents advocated the need for agreed technical standards to be put in place in order to provide a base level of technical interoperability. Technical interoperability was viewed as an essential pre-condition for commercial interoperability to function. A number of key areas were also identified that would promote commercial interoperability, including the standard treatment of metering system capital and installation costs, and common or consistent contract terms.

2.44. A small majority of respondents, including the majority of the larger suppliers, advocated that interoperability can best be secured in the smaller non-domestic sector by mandating the use of DCC where a compliant smart metering system is installed. It was advocated that standard approaches across all customers with compliant smart metering would remove cost and reduce complexity. A small number of respondents felt that there was already sufficient provision for interoperability in the smaller non-domestic sector.

#### *Government conclusions*

2.45. The next phase of the programme will set the foundation for the mass rollout of smart metering. This must be a solid foundation. The deployments and preparations that take place in this period will be vital to build industry readiness and deliver a positive consumer experience.

2.46. The Government has concluded that a number of specific steps should be taken to create the right environment to build a solid foundation for the rollout. Firstly, putting in place arrangements to support the technical and commercial interoperability of smart metering equipment. This will help ensure that consumers are able to switch supplier during the foundation stage. Secondly, facilitating the transition of communications contracts to DCC when it begins providing services. Finally, testing of equipment, systems, processes and consumer engagement strategies, and for lessons to be learned before the mass rollout. These steps are outlined in more detail below.

2.47. With these steps in place, the Government has concluded not to mandate a staged approach to implementation. As such, it does not currently propose to oblige suppliers to install specific volumes of smart meters during the foundation stage. Suppliers will therefore have broad flexibility over the volume and pattern of their installations before the mass rollout begins. Nevertheless, the Government and Ofgem are keen to see early smart meter deployments to the extent that they improve consumer choice and levels of service, and facilitate effective competition.

2.48. The detail of the steps that the Government takes will depend on how the current regulatory framework evolves over time. In this regard, Ofgem is currently consulting through its "Spring Package" on measures to improve consumer protections in respect of smart metering.<sup>7</sup> This includes new obligations to support commercial interoperability.

#### - Supporting interoperability

2.49. To support interoperability for compliant smart meters in the period before DCC services become available, the Government proposes to include a definition of standardised messaging services within the smart metering technical specifications. This step would help ensure that compliant smart meters are technically

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<sup>7</sup> *Smart Metering Spring Package - Addressing Consumer Protection Issues*, Ofgem, February 2011



interoperable, including by speaking the same 'language' regardless of what brand of meter is installed. It would also reduce cost and complexity for suppliers and for DCC as it would avoid the need for multiple translation services to be developed. The development of the technical specifications, which are due to be finalised in early 2012, is discussed in the "Design Requirements" supporting document.

2.50. Ofgem's "Spring Package" proposals include requirements relating to the charges for smart meters and also potentially for the communications and associated equipment. Subject to Ofgem's consultation on the Spring Package, this will require suppliers installing compliant smart meters to offer reasonable and non-discriminatory terms to an incoming supplier for the provision of data and communications services. The Government has also concluded that installing suppliers should be required to provide meter technical details and to novate existing communications contracts, so that incoming suppliers may operate meters directly if they so wish.

2.51. The intended effect of these combined proposals is as follows. Prior to confirmation of the smart metering technical specifications, we envisage rents paid by suppliers for meters with smart functionality being charged at 'dumb' rates as most suppliers would not have developed systems that can implement any smart functionality. Once the technical specifications are finalised, there is bulk availability of compliant meters and there has been sufficient time to make necessary changes to supplier and industry systems and processes – envisaged to be in late 2012 – the costs and risks attached to smart meters would be passed from the installing supplier to the incoming supplier. In this way, the incoming supplier would have to bear the 'smart' rent for that meter.

2.52. This approach to interoperability would allow incoming suppliers to choose the best way of operating meters. The various elements would enable 'smart-to-smart' change of supplier, such that an incoming supplier could retain smart functionality where a compliant smart meter has been installed. This would therefore reduce the risk of investment in compliant meters being stranded. In turn, this would help maximise the scope for competition and innovation, while protecting the interests of consumers. Subject to the conclusions of Ofgem's "Spring Package" consultation, the Government will consider whether further licence changes are needed.

2.53. In recognition that smart meters operating in prepayment mode cannot necessarily revert to dumb prepayment mode, Ofgem's proposals also include a requirement that suppliers should not install smart meters for use in prepayment mode unless they can be used in that mode by an incoming supplier.

2.54. The overall approach to interoperability takes into account the concerns that the costs of some interim arrangements may outweigh their benefits and that they could distract suppliers from the work needed on the enduring solution. The greater commercial certainty provided by these measures should encourage investment during the foundation stage. It is up to suppliers to determine their commercial strategy within this framework.

2.55. The Government does not propose to pursue options involving a pre-DCC central body and central services. Delivering these options in sufficient time before DCC services would have been difficult and could also have given an unfair advantage to certain parties in the DCC licence application process or in the competitive procurement of DCC services. Nevertheless, interim services could still be offered on a commercial basis. An assessment of the options considered for interim interoperability arrangements is set out in Appendix 2.

2.56. The Government has concluded that the measures outlined above for the domestic market should also apply to suppliers using compliant smart meters in the smaller non-domestic market. As noted earlier, similar issues were raised by stakeholders in relation to interoperability in the smaller non-domestic sector. The proposed approach will enable process alignment between the domestic and smaller non-domestic sectors during the foundation stage, and provide greater consistency and certainty within the smaller non-domestic sector around the change of supplier process.

- Transitional arrangements

2.57. To provide certainty for suppliers that have installed compliant smart meters early, it is planned that DCC will be required to adopt communications contracts associated with compliant meters installed before its services were available, subject to these contracts meeting pre-defined criteria. There is likely to be a need to put a limit on the number of communications contracts that DCC would guarantee to accept, subject to the adoption criteria being met. This is discussed in the "Central Communications and Data Management" supporting document.

- Promoting market readiness

2.58. Given that smart metering will involve substantial changes, it is important that proper readiness for these changes is achieved across a number of areas to provide a platform for mass rollout. These areas include: consumer readiness; changes to regulatory and commercial arrangements; and the completion of testing and trialling of new processes and systems. The programme will develop its approach to market readiness, with the Government bringing forward any necessary proposals in the domestic and smaller non-domestic sectors in the next phase.

2.59. The new and replacement obligation outlined earlier, which will come into force from the start of the mass rollout, will also focus suppliers on preparing their internal systems and processes in a timely manner. The Government will consider introducing additional requirements if adequate progress is not being made during the foundation stage.

2.60. It is important that consumers, as well as industry, are ready before the mass rollout begins. Steps will be taken by the Government and Ofgem throughout the foundation stage to safeguard consumers' interests for example in relation to data privacy and the installation process. These issues are discussed in Chapter 4.

*Next steps*

2.61. The programme will develop its approach to market readiness with the Government bringing forward any necessary proposals in the domestic and smaller non-domestic sectors in the next phase. In the light of the outcome of Ofgem's "Spring Package" consultation, the programme will also keep under review any further steps to support commercial interoperability.

2.62. Industry is already working, under the auspices of the programme's Smart Metering Design Expert Group, to develop a single smart metering 'language' for inclusion in the technical specifications for the smart metering system. The programme will also work with stakeholders to consider how to enable consumers with compliant smart meters to retain prepayment functionality on a change of supplier prior to DCC service availability.

2.63. The programme's plans for monitoring and reviewing the progress of the rollout during the foundation stage are discussed in Chapter 5.

**Planning, coordination and customer prioritisation**

2.64. There are various forms of obligations that could be placed on suppliers in order to shape how the rollout of smart meters is delivered to domestic and smaller non-domestic consumers. This includes the degree to which suppliers need to coordinate their rollout plans or to prioritise particular groups of customers.

*Prospectus proposals*

2.65. The Prospectus considered three broad approaches in relation to planning and coordination of the rollout. These were common to both the domestic and smaller non-domestic sectors. Under all three options, we assumed that normal metering activities such as meter replacements and installation of meters in new premises would continue across Great Britain during the course of rollout. The three approaches considered were as follows:

- Market-led – suppliers have flexibility to develop their rollout plans
- Local project-based – suppliers have flexibility to develop their rollout plans but have obligations to support local initiatives within defined parameters
- Area-based – suppliers are required to deliver focused rollout activities within areas specified by a common plan.

2.66. The Prospectus also assessed the merits of prioritising three categories of consumer for whom early delivery of smart meters might help to promote early delivery of programme benefits. These were prepayment customers, smaller non-domestic consumers and consumers in fuel poverty.

2.67. In terms of planning and coordination, we proposed to follow a market-led approach in the early stages of the rollout, which would give suppliers broad flexibility over the pattern of their installations. We also proposed not to require suppliers to prioritise any groups, at least initially. In both cases, we proposed to keep the need for such measures under review as the rollout progresses.

#### *Evidence*

2.68. There were mixed views on our proposed approach to planning and coordination of the rollout. A small majority of respondents who commented supported our proposal. This included nearly all suppliers who expressed a view, a large majority of meter manufacturers and meter operators, around half of consumers groups and a small majority of telecommunications providers. These respondents argued that a market-led approach would give suppliers flexibility to manage their rollout costs efficiently. It was also felt that our proposal would allow suppliers to respond to customer requests for smart meters. These consumers are likely to be the most engaged and hence might be better placed to overcome issues that might arise in the early stages of rollout. It was also suggested that they would be more likely to take action to reduce their energy usage and hence support early delivery of the benefits of smart metering.

2.69. A minority of respondents, including some consumer groups, a large minority of telecommunications companies and service providers and a small number of trade associations and meter manufacturers, advocated an area-based rollout. These respondents felt that this approach would help to promote consumer engagement by facilitating the involvement of local third parties. It was also suggested that an area-based approach would improve efficiency, for example by allowing suppliers to coordinate their marketing activities in a focused geographical area. A small number of respondents argued that the rollout should be designed to allow the involvement of local projects and initiatives.

2.70. A small number of respondents identified the need for other forms of coordination. For example, network operators stressed the importance of suppliers coordinating with them to support the development of smart grids and to overcome issues that might arise at the point of installation. Respondents including a minority of telecommunications companies, a small number of meter manufacturers and one consumer group argued that there should be coordination between suppliers to deliver a single installation visit for consumers who take their gas and electricity from different suppliers.

2.71. The majority of respondents who commented, including most suppliers and consumer groups, did not advocate prioritisation of specific groups of consumers or meter types. These respondents felt that the prioritisation would reduce suppliers' flexibility to manage rollout costs by imposing constraints on how suppliers organise deployment. It was also suggested that prioritisation of particular groups could give rise to a stigma associated with smart metering. The majority of consumer groups stressed that vulnerable consumers in particular may not have the support they require in the early stages of rollout.

2.72. Among those respondents who advocated some form of prioritisation, the majority argued that prepayment customers would benefit from early installation of smart meters. These respondents included a small number of metering companies and, subject to certain conditions being met, one consumer group. It was felt that prepayment customers would particularly benefit from a greater choice of payment methods and reduced costs to serve. However, other respondents, including one consumer group and all larger suppliers who commented, put forward a range of reasons for not prioritising prepayment customers. These respondents argued that the end-to-end system must be operating correctly before prepayment customers receive smart meters. Furthermore, it was suggested that prepayment customers are already very aware of their energy usage and hence may benefit less from the information that smart metering can provide.

2.73. One consumer group and one larger supplier also suggested there might be a case for prioritising metering systems reliant on the Radio Teleswitch System (RTS) signal. This is because the existing system may be decommissioned before the completion of the rollout.

#### *Government conclusions*

2.74. The Government has concluded that a market-led approach should be followed during the early stages of the rollout. During this period, constraints will not be imposed on suppliers in relation to planning, coordination or customer prioritisation.

2.75. This flexibility will enable suppliers to plan their rollout programmes efficiently, to respond to or actively generate consumer demand for smart meters and to develop their plans in the light of experience and feedback. Customers who request smart meters early may be more likely to engage with the information provided by smart metering and would therefore support delivery of the benefits sooner. They may also act as role models in their local communities, providing reassurance and encouragement to others. This approach would allow suppliers to choose how they involve third parties in order to differentiate the service they offer to their customers. This would also allow suppliers to coordinate where appropriate with network operators in relation to the development of smart grids.

2.76. The other approaches considered in the Prospectus would impose limitations on suppliers' rollout plans and could reduce the efficiency of the rollout. An area-based approach in particular would not be appropriate during the foundation stage given the volume of installations envisaged. Nevertheless, the involvement of trusted third parties, such as local authorities, housing associations and voluntary organisations, is likely to help give consumers confidence about smart metering and promote behaviour change. The programme's consumer engagement strategy will consider how best to support this involvement. More detail is provided in Chapter 4.

2.77. As noted earlier, a small number of respondents advocated other forms of coordination. This included coordination between suppliers to ensure a single installation visit for consumers with separate gas and electricity suppliers. On the basis that the majority of consumers have the same supplier for both fuels, most

consumers are likely to experience a single installation visit. Only around one third of consumers with electricity and gas supplies are not on dual fuel tariffs. These consumers may be able to organise with their suppliers for both meters to be installed on the same day if they wish. However, imposing obligations to coordinate single visits may impact on rollout timescales and delay installation of smart meters to non dual-fuel consumers.

2.78. During the early stages of the rollout, we expect suppliers to focus on replacing dumb meters, which are not delivering any of the benefits of meters with smart functionality. There will be no specific requirement for non-compliant meters with smart functionality to be replaced as a priority during this early period.

#### *Next steps*

2.79. In the next phase, the programme will keep under review whether any obligations around planning, coordination or customer prioritisation might be appropriate for the mass rollout. Further details on the programme's plans to review progress with the rollout are set out in Chapter 5. Issues relating to the role of network operators in resolving installation issues and the potential decommissioning of the RTS signal are considered further in Chapter 6.

### 3. Obligations on suppliers to provide an in-home display

This chapter sets out the obligations to be introduced on suppliers to provide, repair and replace in-home displays (IHDs). It first considers the obligations when suppliers install smart meters. It then describes the different roles and responsibilities after the installation visit.

3.1. As part of the rollout of smart meters, the Government has previously decided that all domestic consumers should be provided with an IHD, capable of displaying near real-time information on their energy consumption in a readily accessible form. The IHD will be the most visible part of the smart metering system for consumers. It will play an important role in promoting greater consumer awareness of energy usage and helping consumers to reduce their consumption.

3.2. The Government has previously decided that suppliers will not be required to provide an IHD to their smaller non-domestic customers. Nevertheless, it is essential that these consumers are able to access their data easily. Further information on data access can be found in the "Data Access and Privacy" supporting document.

3.3. This chapter describes the obligations on suppliers to provide, repair and replace compliant IHDs (ie IHDs that meet the required technical specifications). Further information on the technical specifications can be found in the "Design Requirements" supporting document. Roles and responsibilities for other smart metering equipment at consumer premises, including the WAN module, are described in the "Central Communications and Data Management" supporting document.

#### **At the meter installation visit**

3.4. The provision of an IHD at the same time as installation of a smart meter will allow domestic consumers to engage easily and immediately with the information available from smart metering. This section sets out the obligations on suppliers to provide an IHD when a compliant smart meter (ie one that meets the relevant technical specifications) is installed.

3.5. The Government has concluded that suppliers should be prohibited from levying a one-off or upfront charge to their domestic customers for the smart metering equipment they are required to provide, including the compliant IHD. Further details are provided in Chapter 4.

#### *Prospectus proposals*

3.6. The Prospectus proposed that as part of the rollout suppliers would be responsible for providing their customers with a compliant IHD. For households with two energy suppliers, we proposed that the supplier who installs the second meter would also be required to provide an IHD, except where they could satisfy themselves that the minimum information set for their fuel was already accessible to

the consumer on an existing compliant IHD. In these circumstances, the supplier could still choose to offer a second IHD to the customer.

#### *Evidence*

3.7. There was strong support from respondents to consultation for the proposal that suppliers be responsible for provision of an IHD at the point of installation. This included the majority of service providers, trade associations and consumer groups and a small majority of suppliers. These respondents argued that placing the obligation on suppliers was consistent with a supplier-led rollout. Respondents also felt that our proposal would allow suppliers to differentiate the service they offer to customers through provision of an IHD.

3.8. There were a range of views on the nature of the mandate on suppliers to provide an IHD. One consumer group and a number of industry bodies advocated a strong mandate because it would be difficult to find an alternative means of providing real-time information on consumption. The consumer group also stressed that the meter installer should explain how the IHD works and the benefits it can bring to the consumer. A small number of suppliers and service providers suggested the obligation should not be overly prescriptive. One larger supplier also argued that it would only be appropriate to provide an IHD where the consumer has positively requested a device as part of their smart meter installation. One smaller supplier noted that consumption information could be provided to consumers in alternative ways to an IHD and suggested that providing an IHD should not be mandated.

#### *Government conclusions*

3.9. The Government has concluded that it will be suppliers who should be responsible for providing compliant IHDs to their domestic consumers. Given the competitive energy supply market, this approach would help encourage innovation and promote greater choice for consumers.

3.10. This obligation would require suppliers to provide an IHD that meets the relevant technical specifications at the point of installation of a compliant smart meter. This is unless the supplier can satisfy themselves that the minimum information set for their fuel is already accessible to the consumer on an existing compliant IHD. Where a household receives their electricity and gas from different suppliers, this approach will help to avoid waste (eg consumers being provided with a second IHD unnecessarily).

3.11. As set out in Chapter 2, from the start of the mass rollout any new or replacement meter installed should comply with the relevant technical specifications. Where a supplier installs a compliant smart meter before this point, a compliant IHD should be provided alongside. It is envisaged that this obligation would take effect during the foundation stage, when bulk supply of compliant smart metering equipment becomes available. This approach minimises the number of consumers who do not receive a compliant IHD at point of installation of a compliant smart meter. Arrangements for these consumers are discussed in the next section.



3.12. It is important that when consumers receive an IHD, they are provided with information and advice on how to use it, to help them to better understand their energy consumption. This issue is discussed further in Chapter 4.

### **After the meter installation visit**

3.13. In the days, weeks and months following the installation, it will be important for consumers to build an understanding of the information provided by their compliant IHD. This includes an appreciation of how appliance use and household activity corresponds to energy consumption. This will not be possible if the IHD is faulty or the consumer is unable to access one. It is important that consumers are made aware of their rights in these scenarios.

#### *Prospectus proposals*

3.14. The Prospectus considered the issues that arise when a consumer receives a compliant smart meter before the start of the mandated rollout but not a compliant IHD. In such circumstances, we proposed that suppliers should be required to provide these customers on request with a compliant IHD for no upfront or one-off charge. This obligation would last for one year following the start of the mandated rollout defined in the Prospectus as the summer of 2012 and suppliers would be required to notify customers of their rights in this respect.

3.15. The Prospectus also considered the obligations on suppliers to repair or replace an IHD (eg if faulty) after the installation visit. We proposed that suppliers should not be subject to an enduring obligation in this regard, but should be responsible for repairing and replacing IHDs for one year after installation of the associated smart meter.

3.16. In the event a consumer declines an IHD at the point of installation, we proposed that if the consumer changes their mind within one year of the installation visit, they would be entitled to receive one from their supplier for no upfront or one-off charge. We proposed that suppliers would be required to notify consumers of their rights in this respect. Where a customer makes it clear that they do not wish to have an IHD, we also proposed that suppliers should make alternative arrangements for providing consumption information, for example via customer bills.

#### *Evidence*

3.17. There were mixed views among consultation respondents on our proposals relating to the IHD obligations after the installation visit. A small majority of respondents felt it was inappropriate to place suppliers under an enduring obligation to repair and replace IHDs, citing that the IHD was a consumable item and consumer preferences were likely to change as new technologies are developed. These respondents broadly supported our proposal to time limit the obligations to one year from the installation of the meter.

3.18. One consumer group opposed limiting the requirement to repair and replace the IHD to one year after the meter installation. It was felt that this would not provide a sufficient incentive to offer durable IHDs. A small number of respondents including suppliers, service providers and one consumer group suggested there may be a need to extend the obligations to repair and replace an IHD where this is the primary interface with the prepayment meters.

3.19. In relation to the scenario where a consumer initially refuses an IHD, a small number of respondents including one consumer group and one meter manufacturer suggested that the obligation to provide one on request should be enduring. This is because consumers will be indirectly paying for their IHD through higher energy bills.

3.20. Several responses including suppliers and service providers requested further details on how the obligations would work in the event of customer churn or change of tenancy. This included how obligations to provide an IHD following the meter installation visit would be tracked and what information would be provided to consumers on their rights to request an IHD in specific circumstances.

3.21. Some respondents commented on how suppliers should discharge their obligations in the event that a minimum specification IHD is not provided when a compliant meter is installed. One consumer group felt that suppliers should be required to visit the customer premises to provide an IHD. In contrast, one service provider felt that it should be permissible for IHDs to be posted. A small number of suppliers and trade associations also felt that the proposals in the Prospectus were generally too prescriptive. It was suggested consumers and suppliers should be provided with greater flexibility to request and provide basic or enhanced IHDs following the installation visit.

3.22. The programme's Data and Communications Expert Group discussed issues around the provision, repair and replacement of IHDs. Members of the Group suggested that any obligations in relation to IHDs should not necessitate the creation of a database to track responsibility for provision and maintenance over time.

#### *Government conclusions*

3.23. The Government has concluded that there are two scenarios where suppliers should be required to provide a compliant IHD to a customer after the installation of a compliant smart meter.

3.24. The first scenario arises where consumers receive smart meters early, based on voluntary deployments by early mover suppliers. As set out earlier, from a specified time during the foundation stage, suppliers should be required to provide a compliant IHD at the point of installation of a compliant smart meter. Where a supplier installs a compliant smart meter before this time but does not provide a compliant IHD at the same time, the supplier would be required to provide on request a compliant IHD for no upfront or one-off charge. This obligation would last for a year from the time specified above. This approach would enable consumers who want a compliant IHD not to miss out on the benefits of one.

3.25. The second scenario arises where a consumer declines an IHD when a compliant smart meter is installed. In such cases, the supplier should be required to provide one for no upfront or one-off charge if the customer changes their mind and requests one after the installation visit. This obligation would apply for one year after the original installation visit. We envisage that there will be an active market for IHDs among suppliers and other providers, through which consumers will be able to get hold of one if they so wish. Where a domestic customer makes it clear that they do not wish to have an IHD, suppliers will be expected to make alternative arrangements for providing consumption information, for example via customer bills. The Government and Ofgem will consider whether additional obligations are needed for this purpose.

3.26. In relation to responsibilities for maintenance of IHDs, the Government has concluded that, if the IHD is faulty, the supplier should be required to either repair the IHD or replace it with a new one that meets the minimum technical specifications. In discharging this obligation, suppliers should have a choice between these two options but should not be permitted to levy a one-off or upfront charge on their domestic consumers. This obligation would apply for one year from installation of the associated meter. In providing IHDs, suppliers will need to ensure that they comply with their responsibilities under existing applicable legal provisions.

3.27. These obligations to provide, repair or replace an IHD after the installation visit would be activated on customer request. Suppliers should therefore be required to notify their customer of their rights. Suppliers would be able to choose how to fulfil their obligations to provide or replace an IHD after the installation visit. The Government is not persuaded that it would be appropriate to require suppliers to visit the customer premises in these circumstances. Doing so would increase the costs of the rollout. While a site visit would not be required, there may be instances where this is unavoidable, for example where the supplier provides a wired solution. Further information on wired solutions can be found in the "Design Requirements" supporting document.

#### *Next steps*

3.28. As set out earlier, the obligation to repair or replace an IHD after the installation visit would be linked to installation of the metering system. As such, these obligations would fall on the current supplier when a customer exercises their right to be provided with an IHD or have one repaired or replaced. This may not necessarily be the same supplier who installed the smart meter if the customer has switched supplier or moved house. Linking the obligations to the smart metering system will make it easier for the consumer to understand who to contact in the event that the IHD is faulty. It also avoids the need to create a cost recovery mechanism that allows an incumbent supplier to charge the costs of repairing or replacing the IHD to the supplier who first provided it.

3.29. The programme will undertake further work in the next phase to consider how suppliers will be able to access information on the date of installation of a given smart meter and whether an IHD was provided. The programme will also need to consider how consumers should be notified of their rights as set out in this chapter.

3.30. Meters are sometimes installed in locations that are inaccessible to consumers due to technical or building constraints. The Prospectus noted that these consumers were potentially being disadvantaged as prepay options were not being offered in those circumstances. Government has concluded that work will be taken forward in the next phase on how best to make PPM functionality available to customers with inaccessible meters. In particular, the development of a robust remote PPM interface directly linked to the smart meter will be considered further as part of the technical specification work. In parallel, the programme will consider the need for an enduring obligation on suppliers to maintain this equipment. Further information can be found in the "Design Requirements" supporting document.

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## 4. Consumer experience of the rollout

This chapter considers the consumer experience of the smart metering rollout. It sets out the steps being taken to ensure the continued safeguarding of consumers' interests. It also sets out progress with developing a strategy to promote consumer engagement with smart metering. Finally, it sets out the requirements that will be placed on suppliers when installing smart meters at customers' premises.

4.1. It is important to ensure the continued safeguarding of consumer interests as smart meters are rolled out across Great Britain. It will also be important to promote consumer engagement with smart metering. An element of this will be providing consumers with a positive experience of rollout, including of the installation process itself.

4.2. Consumer take-up of the opportunities facilitated by smart metering and consumers' ability to use the information that meters provide will be vital to a successful rollout. It is important that all consumers are able to take advantage of the benefits of smart metering and that the rollout is delivered in an efficient and effective manner.

### Protecting consumers

4.3. It will be important to continue to safeguard consumers' interests in a smart metering environment, in addition to enabling consumers to take advantage of the benefits of smart metering. In this respect, both the Government and Ofgem have a statutory duty to protect the interests of existing and future energy consumers, with a requirement to have regard to the interests of vulnerable consumers.

4.4. There are already significant measures in place, both in suppliers' licences and in general consumer law, to provide protection and enable energy consumers to exercise choice in relation to their energy supply. As the regulator, Ofgem expects suppliers to meet these obligations in full. Nevertheless, smart metering does present new issues that it will be important to address.

### General protections

#### *Prospectus proposals*

4.5. The Prospectus proposed that Ofgem would take forward certain actions to ensure that consumer protections are fit-for-purpose as smart meters are rolled out across Great Britain, particularly in the period before any new obligations are put in place by the Government in relation to the smart metering rollout. This is in line with Ofgem's principal objective to protect the interests of existing and future consumers. These actions included consulting on whether early changes to supply licence conditions are required in the light of the possibility of suppliers using smart meters to remotely disconnect consumers and remotely switch them to prepayment mode.

4.6. Based on responses to consultation and other relevant evidence, Ofgem set out its intention to introduce a package of measures to strengthen and update existing consumer protections (the "Spring Package"). Ofgem also committed to monitoring the suitability of existing obligations and standards of conduct relating to marketing and the quality and accessibility of information provided to consumers.

4.7. The Prospectus sought views on a range of issues where protections might need reinforcing to safeguard consumer interests. These included:

- What steps can be taken in an environment of time-of-use tariffs to safeguard consumers from being confused while maintaining the benefit of tariff choices
- Whether further protections are needed when consumers are disconnected including the idea of requiring suppliers to conduct a site visit prior to disconnection
- Whether existing licence protections are sufficient to protect consumers from being inappropriately remotely switched to prepayment mode
- What notifications suppliers should provide to customers before disconnecting them or switching them to prepayment mode
- Whether suppliers should be required to provide emergency and friendly credit periods to prepayment customers or whether this could be left to suppliers.

4.8. The Prospectus also proposed that the Government would seek to prevent the IHD provided during the rollout from being used to transmit unwelcome marketing messages. We proposed looking at the coverage provided by existing protections to assess what further action could be taken. We also sought views on what would be considered as "unwelcome" in this context.

#### *Evidence*

4.9. Evidence was received primarily from responses to the Prospectus consultation, from a number of workshops held specifically to consider aspects of consumer protection and from discussions with the Consumer Advisory Group.

4.10. Some respondents to the consultation argued that suppliers should be required to undertake a site visit before switching a customer to prepayment mode, even if it were technically possible to perform this action remotely. These respondents felt that a site visit represented the most effective method of assessing vulnerability prior to switching. However, a number of other respondents argued against such a requirement where the supplier had already spoken to the customer and identified through other means their suitability for being switched to prepayment mode.

4.11. Most respondents considered the current statutory seven day notice period sufficient for suppliers to notify customers of the intention to switch them to prepayment mode. However, some respondents felt that this was only sufficient where suppliers continued to take a number of steps to engage with the customer about their debt before formal notification. This included holding early discussions with a customer about repayment methods and amounts, and making multiple attempts to contact the customer by various methods.

4.12. In relation to the provision of emergency credit and friendly credit<sup>8</sup>, consumer groups considered that suppliers should have obligations in relation to customers who regularly self disconnect. Suppliers generally did not consider it necessary to require such measures because many of them already offer such measures on a voluntary basis, particularly where the technology allowed them to do so.

4.13. In relation to the notification that suppliers should provide to consumers prior to disconnection and the identification of vulnerable customers, a number of consumer groups stated that there should be a site visit by suppliers if no contact had been made with a customer. Some recommended that suppliers should also contact the customer at the time of disconnection.

4.14. A small number of respondents stated that a site visit should be made mandatory in order to increase the likelihood of identifying a vulnerable customer prior to disconnection. Some consumer groups also considered that Ofgem's guidance on what constitutes reasonable steps in checking the status of customers and occupants prior to disconnection should be made mandatory. Suppliers considered that no changes were required to the relevant licence conditions and have committed to continue to carry out site visits prior to disconnection where they have not already spoken to a customer.

4.15. Most respondents saw value in new approaches to partial disconnection (such as load limiting) but were cautious in their support. This view was reflected by consumer groups advocating the need for research into the application of load limiting in practice. These respondents considered it essential that any new approaches to partial disconnection (such as load limiting) were covered by the protections regarding (full) disconnection. Many respondents also felt that vulnerable customers should continue to be protected from these approaches. Several suppliers expressed concerns that load limiting might act as a disincentive to pay as the customer would continue to obtain the minimum gas and electricity they needed.

4.16. Many respondents commenting on the issue of potential tariff confusion felt that more needed to be done to manage this issue. A broad range of possible measures was suggested. In particular, several consumer groups advocated the provision of clearer and more useful information by suppliers to their customers. However, suppliers generally felt that existing measures are adequate.

4.17. Respondents commenting on the evolution of innovative time-of-use tariffs expressed a broad range of views. Some suppliers for example thought that the market for time-of-use tariffs would emerge imminently while other suppliers believed that the market for these tariffs would not emerge for a further decade. Respondents also expressed a range of views on the barriers to the introduction of time-of-use tariffs. Suppliers in particular felt that the current industry settlement

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<sup>8</sup> Emergency credit refers to credit applied by a supplier when a prepayment meter is out of credit to help the customer avoid interruption. Friendly credit refers to the facility on a prepayment meter to prevent disconnection if credit runs out during defined time periods, such as overnight.

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and half hourly processes would need to change, while consumer awareness and tariff complexity issues were also cited.

4.18. Most respondents supported, in principle, the proposal to prevent IHDs being used to transmit unwelcome marketing messages. However, respondents had mixed views on how this principle should be applied in practice. Of those who made specific recommendations, most focused on allowing the customer to opt in or out of receiving messages in this way. A few respondents suggested that such messages should be limited to energy or maintenance issues.

4.19. A workshop was held in September 2010 to discuss whether the existing protections concerning disconnection and the use of prepayment meters might need to be amended given the remote capability of smart meters. Most attendees felt that the existing obligations to provide the consumer with seven days notice before disconnecting supply or installing a prepayment meter would be sufficient. However, consumer groups felt that new obligations would be required to ensure consumers are provided with information on how to operate the meter in prepayment mode. They also considered that suppliers should undertake a site visit to check if it is safe and reasonably practicable for the customer to use a meter in prepayment mode. There were mixed views on the need to mandate a site visit to verify the status of a customer and the occupants of any affected domestic.

4.20. A follow-up workshop was held in December 2010 to seek views on Ofgem's initial proposals for amending the existing protections. This included the proposal to require suppliers to have regard to guidance issued by Ofgem when considering whether it is safe and reasonably practicable for a customer to be offered prepayment and when identifying if the customer is vulnerable prior to disconnection. Suppliers and consumer groups generally supported Ofgem's proposals. However, one consumer group was concerned that there was no proposal to require site visits prior to switching customers to prepayment mode. Consumer groups expressed concern that suppliers may use alternative forms of disconnection, such as load limiting, as a debt management tool.

#### *Government conclusions*

4.21. Ofgem is currently consulting in its Spring Package on a range of licence changes that will update the consumer protections in the gas and electricity supply licences to reflect a smart metering environment. These include clear rules around remote switching from credit to prepayment mode and remote disconnection, and measures to enable customers to continue to change supplier during the transition to smart metering. Ofgem's proposals aim primarily to address the consumer protection issues that arise in the context of "early movers" who are already installing meters with smart functionality.

4.22. The Government welcomes Ofgem's proposals in this area. Subject to the satisfactory conclusion of Ofgem's consultation, the Government is satisfied that no additional steps are necessary at this stage. Other consumer protection issues that arise will either be considered by the programme in its next phase of work or by



Ofgem as part of its ongoing duties. This includes the issue of consumers being confused by tariffs due to their complexity, for example resulting from time-of-use tariffs. This is not an immediate issue but will be kept under review. The wider issues of tariff complexity have been considered as part of Ofgem's Retail Market Review.<sup>9</sup>

4.23. The Government has concluded that, in principle, IHDs should not be used to transmit unwelcome marketing messages. The programme will undertake further work in the next phase as to how best to implement this principle.

### **Sales and marketing during the installation visit**

4.24. The roll out of smart metering will involve visits to all homes in Great Britain. The installation visit represents an opportunity to raise consumer awareness of actions that they can take to manage their energy usage. However, concerns have been expressed by consumer groups about the potential for inappropriate sales and marketing activities to occur as part of the installation process.

#### *Prospectus proposals*

4.25. The Prospectus proposed to prohibit unwelcome sales activities during installation visits in the domestic sector. This proposal was predicated on the view that it would be inappropriate for suppliers to gain entry to a customer's home and then – once inside – use that opportunity to conclude a sale. The Prospectus also requested views on what might be considered acceptable and unacceptable activities during the installation visit.

#### *Evidence*

4.26. Among respondents to consultation, there was strong support for imposing some form of restrictions on the conclusion of sales contracts and/or marketing activities at the point of installation. It was felt that this would help ensure consumers have a positive experience of smart meter rollout. However, there were mixed views on what form these restrictions should take.

4.27. A small majority of respondents supported our proposal to prohibit unwelcome sales activities. This included consumer groups and the majority of suppliers. It was felt that a ban on unwelcome sales activities would provide appropriate protection to consumers. Respondents also argued that our proposal would reduce the risk that actual or perceived negative experiences resulting from inappropriate sales activities during the installation visit undermine the rollout.

4.28. A wide range of respondents commented on how a ban on unwelcome sales activities could be implemented. The most common suggestion was to obtain the customer's consent. This was suggested by a range of respondents, including around half of larger suppliers and consumer groups. Among other comments made in

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<sup>9</sup> *The Retail Market Review - Findings and initial proposals*, Ofgem, March 2011

relation to sales and marketing, there was a request that consumers be referred to independent sources of information about energy efficiency products and services.

4.29. Of those respondents who did not support our proposed approach, most advocated a full ban on sales at the point of installation, including most consumer groups and smaller suppliers as well as one larger supplier. Respondents felt that an outright ban would minimise the length of visits, to the benefit of the consumer and the efficiency of rollout. Some respondents were concerned that anything less than a full ban would be ineffective. For example, one respondent suggested that not all consumers (and in particular the vulnerable), would be aware of the implications of consenting to sales and marketing, or would feel able to withhold consent. Some respondents also objected to what they saw as the competitive advantage that selling during the installation would allow for larger suppliers.

4.30. Among those that supported a full ban on sales, around half also felt marketing to be inappropriate, including a smaller supplier and a number of consumer groups. The reasons given for this were broadly the same as those put forward for banning sales. Some felt that even with a ban on sales, larger suppliers would gain a competitive advantage from being allowed to market during the installation visit.

4.31. There were mixed views on what might be considered acceptable and unacceptable activities during the installation visit. The activity most commonly seen as unacceptable during the visit was cross selling of tariffs, with a number of suppliers and a consumer group objecting to this among others. Reasons given included the risk that consumers would be provided with too much information during the visit and concerns that it would lead to a negative public perception of smart meters. Activities which respondents tended to support included updating the Priority Services Register, informing consumers of energy efficiency schemes and grants, and providing some energy efficiency information during the visit.

4.32. We hosted a workshop to seek views from a wide range of interested parties on our proposals. There was broad agreement among attendees that the primary purpose of the visit should be to install a smart meter. Attendees also generally agreed that there is a need for provision of a minimum level of generic information. This included instructions on how to use the smart meter and IHD as well as tips on energy management. There was no consensus about whether suppliers or some other body should develop these generic materials.

4.33. Attendees broadly agreed that there should be no conclusion of contracts at the point of installation, including contracts for energy efficiency products and services as well as tariffs. However, a small number of attendees noted that some consumers might welcome the opportunity to hear about a supplier's products and services. In these circumstances, they considered that it would be acceptable for a sale to be concluded if the consumer had given explicit prior consent. On this point, attendees discussed when consent should be obtained and from whom. There were a range of views put forward, though broadly it was felt that consent should be obtained in advance from the person who would be present at installation.

4.34. There were mixed views on other aspects of sales and marketing during the visit. Some attendees felt that selling of higher specification IHDs might be an exception to any ban on sales activities. Others were concerned about misselling of the IHD, particularly to vulnerable groups, and felt that it would be more appropriate to conclude any selling of these models at a different time to the visit.

4.35. The large majority of participants in Ofgem's consumer research objected to the idea of the installation visit being used by suppliers as a selling opportunity.<sup>10</sup> Most participants expressed a preference not even to be left with materials or information relating to products other than the smart meter and IHD.

#### *Government conclusions*

4.36. The programme has reviewed existing legislation and supply licence conditions protecting consumers against misleading, inappropriate, unprofessional or aggressive sales and marketing practices. The Government is not persuaded that these existing protections adequately address the concerns that consumers may have in relation to a supplier representative engaging in sales and marketing activity, having entered their premises to install a smart meter. This might cause particular anxiety among consumers, particularly vulnerable consumers, because the installer is already within the premises, rather than on the doorstep when the customer can more easily close the door.

4.37. The Government confirms its proposal that suppliers should not conclude any sales at the time that smart meters are installed in the domestic sector, without the customer's express prior consent. Where customers have given consent, any sales activities should be conducted in a fair, transparent, appropriate and professional manner. The programme will consider further with stakeholders whether and how restrictions should be applied to face-to-face marketing activities carried out during the installation visit, given the broader scope of the term marketing. The Government considers that such rules should not apply in the case of leaving marketing materials behind.

4.38. This approach aims to address the concerns of many consumers, while recognising that there will be consumers with an interest in additional services or products that the supplier can provide. The intention is to implement this obligation on suppliers not to engage in unwelcome sales and marketing activities through an installation code of practice, which is discussed later in this chapter.

#### *Next steps*

4.39. In the next phase, the programme will work closely with suppliers, consumer groups and other stakeholders on the definitions of sales and marketing activities, on how suppliers should go about obtaining explicit prior consent from their customers, and on the provision of written marketing material during the installation visit.

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<sup>10</sup> *Ofgem Consumer First Panel Year 3 - 2010/2011, Findings from first workshops*, Opinion Leader, March 2011

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## **Upfront charging**

4.40. The rollout of smart metering will involve a significant investment by industry. The initial costs and subsequent benefits are expected to come through consumers' energy bills. These costs will be no different to other supply costs, in as much as we would expect an efficient level of costs to be passed on to consumers. The competitive energy supply market acts as a price restraint on suppliers and creates incentives to deliver, and charge for, smart meters in a way that minimises costs to consumers and offers them value for money. Suppliers who do not minimise costs risk losing customers.

### *Prospectus proposals*

4.41. The Prospectus proposed to prohibit suppliers from imposing upfront or one-off charges on customers for the smart metering equipment, including IHDs, which they are required to provide. However, we stated that suppliers would still be able to offer their customers value-added products and services, such as an enhanced IHD, for an upfront charge or as part of a new tariff package. The basis of our proposal was that the levying of a one-off or upfront charge by suppliers might amount to an unfair financial burden on consumers.

### *Evidence*

4.42. Respondents to consultation expressed strong support for our proposal to prohibit upfront charging. This included the majority of consumer groups, suppliers, meter manufacturers and operators and network operators. It was felt that levying an upfront charge could deter take up of smart metering and therefore undermine the rollout.

4.43. There were a small number of respondents who objected to a ban on upfront charging, including a number of suppliers. One reason given for allowing upfront charging was the belief that consumers would benefit from a choice over whether to pay upfront and subsequently benefit from a cheaper tariff. Other reasons offered were a concern over financing issues for companies providing IHDs, and a belief that the market would disincentivise participants from upfront charging, without the need for a formal ban.

4.44. A small number of respondents also discussed our expectation that suppliers would recover costs from across their customer base from the start of rollout. Most respondents agreed that suppliers should recover costs from all their customers, although one argued that this might mean those who receive smart meters later would be disadvantaged. One respondent felt that only householders with smart meters should have higher tariffs.

*Government conclusions*

4.45. The Government has concluded that suppliers should not levy a one-off or upfront charge on their domestic customers for the smart metering equipment, including IHDs, which they are required to provide. Beyond this, no additional constraints would be imposed on suppliers as to how they recover their costs in the context of the competitive energy market.

4.46. Suppliers have a strong incentive not to recover their net costs by levying an upfront or one-off charge. Such charges may reduce consumer support for smart metering, for example because consumers will associate installation of smart metering with an explicit cost to them. As such, a supplier risks losing market share because their customers will switch to a different supplier who is not charging upfront. For the programme as a whole, however, this could increase the overall costs of the rollout and hinder the realisation of benefits.

4.47. A consistent message that no supplier will charge upfront or one-off for smart meters or IHDs that meet only the minimum regulatory requirements may be important in helping to reassure consumers. Furthermore, even isolated instances of one-off or upfront charging could undermine the rollout by deterring uptake of smart metering if they were to lead to significant adverse media coverage.

4.48. As with the prohibition on unwelcome sales and marketing activities, the intention is for this obligation to be implemented through the installation code of practice that suppliers will be required by their licences to develop and comply with.

*Next steps*

4.49. The programme will undertake further work in the next phase to develop the precise wording of the principle around upfront or one-off charging that will form part of the licence obligations on suppliers in relation to the installation code of practice.

**Promoting consumer engagement**

4.50. It will be important to help consumers understand how they can use the information provided by smart metering to manage their energy consumption effectively and to save energy. This is a significant part of the overall business case for the smart metering rollout. The programme will therefore need to consider how best to promote consumer engagement over time, recognising the diversity of consumers.

*Prospectus proposals*

4.51. The Prospectus described two possible approaches for promoting general consumer engagement with smart metering:

- The first was a coordinated model, whereby suppliers would establish a code of practice for marketing activities and an associated smart metering 'brand'
- The second was a national awareness campaign. Such a campaign would have the potential to develop an integrated approach to communicating with consumers, building their awareness of, and confidence in, smart metering.

4.52. As recognised in the Prospectus, these two approaches are not the only ways to promote consumer engagement. Nor are they mutually exclusive. We asked for views on these approaches and, more broadly, on the best ways to promote consumer engagement with smart metering.

4.53. The Prospectus recognised that engagement among local communities could be particularly powerful in generating awareness and enthusiasm among consumers, and that trusted third parties (eg local authorities and housing associations) could play a role in this. We acknowledged that the way in which meters are rolled out would be likely to impact on the involvement of such parties. The approach to the rollout was discussed in Chapter 2.

4.54. The Prospectus also recognised the importance of addressing the needs of vulnerable consumers resulting from the rollout of smart metering. We proposed to consider the case for establishing a dedicated help scheme for vulnerable consumers. We also requested views on the information, advice and support that might be provided for vulnerable consumers.

### *Evidence*

4.55. Our analysis of the different approaches to promoting consumer engagement has been informed by input from a wide range of stakeholders. Through our consultation and workshops we have gathered evidence and views from suppliers, consumer groups, meter operators and local government bodies among others. Consumer research conducted by Ofgem has also gathered views from a range of individual consumers. Our analysis has been supported by the Central Office of Information in their capacity as specialists within government in engagement, communication and behaviour change.<sup>11</sup>

4.56. A wide range of consultation respondents commented on consumer engagement, including consumer groups, suppliers, meter manufacturers, installers and operators, and network operators. Respondents felt that successful consumer engagement was important to manage customer expectations of the rollout, and to ensure that customers would be able to realise the benefits of smart metering.

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<sup>11</sup> The Central Office of Information (COI) is the Government's centre of excellence for marketing and communications. COI works in partnership with government departments and the public sector to drive best practice and cost effectiveness in the way citizens are informed, engaged and influenced about issues that affect their lives.

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4.57. Among the respondents who commented on the framework for promoting consumer engagement, there was very strong support for some form of national awareness campaign. In particular, a campaign was considered important to gain support for smart meters among consumers, to assist them on the effective use of their smart meters and IHDs, and to publicise consumer rights in relation to any new installation code of practice. A number of respondents emphasised the importance of involving other bodies such as local authorities, advice agencies and community-based groups to deliver information and support.

4.58. There was also strong support among respondents for either information provisions in an installation code of practice, or for an individual information code of practice. Of those who discussed an information code of practice, the majority suggested that it be developed collaboratively or led by a group other than suppliers such as a central body, a consumer group, or Ofgem. These respondents felt that it would be important for a wide range of stakeholders to be able to have sufficient input into the code.

4.59. There was strong support for additional help for vulnerable customers among consumer groups, suppliers and others. A majority of these respondents also described the particular information requirements of vulnerable consumers, including the need to ensure that appropriate information is provided in accessible formats. A large minority, including most consumer groups, supported some form of help scheme for vulnerable customers. Most of these respondents asked that it be centralised rather than having a range of help schemes provided by individual suppliers.

4.60. Some respondents noted the benefits provided by the help scheme during the digital switchover and asked that a similar scheme be developed for smart metering. Others felt that a help scheme would be important to promote understanding among vulnerable consumers and to deal with any concerns and issues. A large minority also argued for local coordination around the rollout in order to effectively meet the needs of vulnerable consumers.

4.61. We held two workshops on the subject of consumer engagement: one to explore the issues in their broadest sense and one specifically on issues to do with vulnerable consumers. Issues arising from these workshops are discussed below.<sup>12</sup>

4.62. Almost all attendees at the first workshop advocated the importance of some consistency of information and advice, such that messages are clear and understandable for consumers. Nevertheless, there was also recognition of the need for suppliers to be able to differentiate themselves in terms of their products and services in the context of the competitive market. It was also argued that retailers and manufacturers would have a leading role in developing and selling innovative products, such as smart appliances, which would help consumers reduce their energy consumption. This could, over time, be an important part of how consumers engage with smart metering.

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<sup>12</sup> Summaries of these discussions can be found on the Ofgem website.

4.63. There was support for the effective engagement of local groups and organisations, to facilitate communication on a local level. Most attendees also supported the facilitation of other activities, such as the provision of help and advice services. Attendees broadly supported some form of central function, to either carry out certain activities or to coordinate the activities of others. Such activities included acting as a point of contact for the various parties involved in the rollout. There was no consensus on the precise objectives or scope of any central function.

4.64. Many attendees at the workshop on vulnerable consumers stressed the importance of providing simple and clear information that is accessible to all. This was felt to be the best way to reach as many vulnerable consumers as possible and to minimise the number of individuals requiring extra assistance.

4.65. Drawing on experiences from other sectors such as water and broadcasting, attendees identified a range of parties that could play a positive role in supporting vulnerable consumers. These included government, suppliers, local bodies (eg housing associations and local authorities), the voluntary sector and the media. A number of attendees were also strongly supportive of some form of central facilitation of interactions between these parties, to make the process more efficient and effective. Finally, attendees noted the potential opportunities offered by the smart metering rollout to more effectively deliver existing schemes, such as the Community Energy Saving Programme (CESP).

4.66. Consumer research conducted by Ofgem highlighted the importance of making clear information available in a variety of formats, to take into account the needs of a range of consumers. The research also indicated low levels of current engagement with home energy management and little current knowledge of smart metering. Consumers taking part in the research saw a role for suppliers, government and other bodies in providing consumers with information about the rollout and how they can benefit from smart metering. However, consumers placed particular emphasis on government or some form of central function providing overarching messages, as suppliers may not be seen as an impartial or trusted source of information.

#### *Government conclusions*

4.67. The Government is committed to developing a strategy for promoting consumer engagement with smart metering. However, it does not intend to set out a definitive approach or strategy at this stage, since further work will be needed on this in the next phase of the programme. Instead, we set out here the thinking that has been developed in a number of key areas relating to consumer engagement.

4.68. Energy suppliers will be responsible for the rollout of smart metering. As such, they will have an important role to play in promoting positive engagement among their customers. We envisage that suppliers will explore ways of working with local authorities and other organisations to inform consumers about smart metering and what to expect from installation visits. Experience in other areas, such as the Digital Switchover programme, has shown that the involvement of trusted third parties can be very helpful, particularly for vulnerable consumers.



4.69. The evidence gathered so far suggests that, in order to help consumers to achieve the benefits of smart metering, there is a case for engagement and communication activities beyond those likely to be carried out by suppliers on their own initiative. Based on our analysis, the Government considers that there is a strong case for some consumer engagement activities to be carried out centrally or on a coordinated basis.

4.70. An approach involving some centrally-delivered or coordinated activities could be important to promote general consumer awareness and confidence. Furthermore, such an approach could help to enable as wide a range of consumers as possible to access the benefits of smart metering.

4.71. The activities that might benefit from some central coordination include:

- Facilitating consistency among different parties on key messages for consumers about smart metering. In order to help to make sure that consumers have the knowledge necessary to access the benefits smart meters provide, it may be most appropriate to agree key messages among the different parties involved in the rollout. This would help to promote consumer understanding of smart metering and minimise the potential for confusion. Some central coordination could also allow for a more timely and effective response to issues that arise relating to the smart metering programme.
- Facilitating interactions between individual suppliers, local authorities, trusted third parties and others. While we envisage that suppliers will explore ways of working with local partners, some form of central coordination should help to increase the efficiency and effectiveness of local engagement activities by achieving economies of scale and minimising duplication of effort. This may be of particular benefit in helping to ensure that vulnerable consumers are provided with the advice and support that they need.
- Delivering a national awareness campaign. While we envisage that suppliers will run their own marketing campaigns, a national campaign could help to build confidence and understanding among consumers around the introduction of smart metering. This could include making available reliable information on actual levels of benefits achieved.

4.72. As noted earlier, suppliers will have an important role in promoting positive engagement among their customers and in helping them to achieve the benefits. Energy services companies and Green Deal providers will also have a role to play in promoting consumer engagement by offering products and services to help consumers achieve benefits. Government may have a role to play in helping to ensure that consumers receive the information and advice that they need to feel confident with the rollout. This includes coordination between relevant energy efficiency initiatives. Local government and other parties, including local bodies such as charities, could also play a role in promoting awareness and engagement at a local level, especially in engaging with specific groups of consumers.

*Next steps*

4.73. During the next phase, the programme will develop a consumer engagement strategy and a plan for implementing this strategy, working closely with industry, consumer groups and other stakeholders. This work will draw on evidence and insight relating to consumer attitudes and behaviours. The strategy will be adaptable in the light of experience as the rollout progresses. For example, it will need to draw on experience from early mover deployments, and to be responsive to innovation and developments in the field of home energy management.

4.74. As a priority, the programme will continue to work with industry and consumer groups to develop and seek to agree clear and consistent messages about smart metering to inform consumers and other parties (eg frontline advisers).

4.75. As part of the development of a strategy, the programme will also undertake further work to:

- Determine the appropriate objectives, scope, governance and funding arrangements for any consumer engagement activities to be carried out centrally or on a coordinated basis, including when different activities would best be undertaken
- Develop a greater understanding of customer engagement needs before, during and after the rollout and in the longer term, consider how best these needs may be met, and identify and agree appropriate roles and responsibilities of different parties in meeting these needs
- Understand which aspects and benefits of smart metering are of most interest and relevance to different groups of consumers and to determine how particular consumer groups, including vulnerable consumers, could best be supported.

## **The installation process**

4.76. The installation visit will be an important element of the consumer experience of smart metering. A positive experience will help to provide confidence to other consumers about the installation process and may make consumers more likely to engage with smart metering and thereby achieve the benefits. This section considers measures to protect consumers and promote a positive experience.

### **Installation code of practice**

*Prospectus proposals*

4.77. The Prospectus proposed to require industry to develop a code of practice for the installation process in the domestic sector. We proposed that this could cover a range of topics including provision of information and advice on the use of the meter and IHD, validation that the correct meter has been installed in the correct property, additional protection for vulnerable consumers, and accessibility requirements for particular customer groups.

4.78. The Prospectus also recommended that an installation code of practice should be developed for the smaller non-domestic sector. We proposed that both codes of practice should be underpinned by licence obligations and subject to approval by the Ofgem. In terms of ensuring consumers' security during installation, we considered that the current range of protections in place in statute and licence, such as identification to be worn at all times, did not require any further protection in supply licences. However, we did encourage suppliers to consider any additional practical steps which could be included in the code of practice.

#### *Evidence*

4.79. Among respondents to consultation there was very strong support for an installation code of practice. This included consumer groups and the majority of suppliers. Of these respondents, most who commented felt that responsibility for developing the code should lie with suppliers, although a minority argued strongly that it was important to involve other relevant parties, including consumer groups and meter installers. However, several consumer groups expressed concerns about industry leading the development of a code.

4.80. Respondents identified a range of topics that could be included in a code. The most common suggestion was to include requirements on suppliers to provide information in advance on the installation visit, to demonstrate how to use the meter and IHD during the visit and to signpost sources of independent information and advice. Guidelines around resolving any issues arising at installation were also frequently mentioned. Appointment processes and provisions for vulnerable customers were also seen as important elements of the code.

4.81. There were mixed views on governance for any code of practice. The small number of larger suppliers that gave a view on this asked that the code be self-regulated. They suggested that self regulated codes have worked well in the past and that industry has demonstrated the ability to adhere to these codes. Consumer groups and several other respondents asked that a code be governed through licence obligations. These respondents were concerned that past voluntary codes have sometimes been ineffective in delivering protection for consumers and that competitive pressures will not be sufficient to ensure compliance. A minority of those commenting were in support of some form of process for monitoring compliance with the code and for measuring the success of the installation.

4.82. Among the few respondents who opposed a new code of practice, including a small supplier, the most frequent reason given was that any new provisions would be better placed in existing codes or in the Smart Energy Code.

4.83. A majority of respondents felt current protections in relation to onsite security to be inadequate, with bogus callers and distraction burglaries the most common concern. Suggested solutions included information for consumers about the installation and the installer prior to the visit, a robust appointments process and additional security measures such as passwords.

4.84. A minority of respondents felt existing protections in relation to onsite security were adequate. Some noted that care should be taken to ensure that current standards do not become less stringent with the larger volume of installations. One respondent felt that while existing protections were adequate, the biggest risk to consumers would be from criminals impersonating meter installers. Another suggested that a national media campaign and a code of practice may be able to help reassure consumers.

4.85. We held a workshop in September 2010 with a wide range of interested parties to seek views on the proposals set out in the Prospectus. There was broad agreement among attendees that there should be an installation code of practice and that it should aim to deliver a positive experience of installation and ensure that consumers receive good service. However, there was no consensus on the appropriate regulatory framework within which the code should sit. Consumer groups were keen that a code should be underpinned by licence obligations, while suppliers favoured a more self-regulatory framework. There was broad agreement that a code of practice should be put in place as soon as possible.

4.86. We held a follow-up workshop in November 2010 with a similar range of stakeholders to consider the potential content of a code in more detail. There was strong support among attendees for a code to include a process for the scheduling of installation appointments, although it was noted that this area is covered by the existing Guaranteed Standards of Performance.<sup>13</sup> Most attendees also felt that while information provision would vary between suppliers, it would be beneficial to make provisions such that there would be consistency between information that is given to consumers. Some attendees argued that a code should include additional help for vulnerable consumers. There were mixed views on whether the code should cover accreditation of meter installers and operational issues, particularly problems with safety.

4.87. The follow-up workshop also considered the objectives and governance of an installation code of practice. Consumer groups argued that consumers should be made aware of the existence of a code and its broad contents. Some attendees felt that, in addition to Ofgem's statutory role, industry should be responsible for monitoring compliance with a code of practice, for example through an independent code panel that includes consumer groups. This panel might also have a role in proposing and assessing modifications to a code.<sup>14</sup>

4.88. Consultation responses indicated near unanimous support for a code that covers the smaller non-domestic sector. However, only a small number of responses suggested that this code should be distinct from the code for the domestic sector. We also sought views on a non-domestic code from Ofgem's Small and Medium Users Group. Members of this group did not support the development of a separate code of practice for non-domestic consumers. Instead it was felt that the code for the domestic sector could be adapted for the needs of smaller non-domestic consumers.

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<sup>13</sup> As set out in Section 19 of the Electricity (Standards of Performance) Regulations 2010.

<sup>14</sup> Full summaries of discussions at the two workshops can be found on the Ofgem website.

4.89. Consumer research conducted by Ofgem considered a number of aspects of smart metering, including the installation process. Consumers taking part in the research expressed a desire to receive clear and easy-to-understand information on how to use their smart meter and IHD. Participants also asked for information on maintenance and safety of the meter and IHD, how their data would be used, and implications for moving house and switching suppliers. They wanted installation appointments to be flexible to the needs of individuals. Some participants asked that suppliers provide a follow-up service after the installation visit to check that the smart metering equipment is working correctly and that the consumer is confident in using their meter and IHD.

#### *Government conclusions*

4.90. The Government has concluded that suppliers should develop and adhere to a licence-backed code of practice governing the installation of compliant smart metering equipment in the domestic and smaller non-domestic sectors. This would help to protect consumers during the installation process and to facilitate the longer-term behavioural change necessary to deliver programme benefits.

4.91. While the requirements around the installation visit will not be identical for both domestic and smaller non-domestic sites, there are likely to be many similarities. Developing a single code would still allow different requirements to apply in the smaller non-domestic sector where appropriate, for example around minimising business interruptions. It would provide for broad consistency of arrangements across sectors and avoid the need to duplicate governance and monitoring arrangements.

4.92. The code should focus on the consumer experience of the installation process.<sup>15</sup> Suppliers would be required, among other things, to provide consumers with information and advice on how to use their smart meter and IHD, to deliver a good standard of service and to provide additional support to vulnerable consumers as necessary. The code would complement (but not replicate) existing industry codes and consumer protections, such as the Guaranteed Standards of Performance.<sup>16</sup> Suppliers should still be able to differentiate themselves in the competitive market by going beyond the requirements of the code. The code would not cover issues relating to the technical aspects of installing meters. These are already covered by existing industry codes and agreements, such as the Meter Asset Manager's Code of Practice (MAMCoP) in gas and the Meter Operation Code of Practice Agreement (MOCOPA) in electricity.

4.93. The code should set out the process for arranging installation visits as well as the information that suppliers are required to provide to consumers in advance about what to expect on the day. These measures will help to address risks associated with

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<sup>15</sup> The code of practice would not cover issues around change of tenancy as these do not relate to a specific installation event. These issues will be considered in the context of further work on consumer protection and consumer engagement.

<sup>16</sup> As set out in the Electricity (Standards of Performance) Regulations 2010 and the Gas (Standards of Performance) Regulations 2005.

distraction burglaries for example. They will supplement the work that suppliers, police and local authorities already jointly undertake to communicate crime prevention messages to local communities. The requirements of the code of practice will also build on the existing protections in statute and licence that require all installers to be 'fit and proper' people and wear ID at all times.

4.94. The objectives of the code of practice would be specified in suppliers' licences. These are set out in the box below and are expressed in the form of outcomes that suppliers should seek to achieve under the code. The precise wording of these outcomes would be subject to consultation prior to making licence changes.

#### **Objectives of the installation code of practice**

For all consumers

- ➔ Customers understand what to expect from the installation prior to the visit, and have not sustained undue inconvenience during the installation process
- ➔ Customers understand how to use their smart meter and IHD and what actions relating to this equipment may contribute to greater energy efficiency
- ➔ Customers are aware of where to find further advice and information relating to this, and whom they may contact regarding problems
- ➔ Customer feedback on the experience of the installation is gathered and used, in a timely fashion, to improve suppliers' own installation processes.

For domestic consumers only

- ➔ Vulnerable consumers receive a level of service appropriate to their needs
- ➔ Customers are not subjected to unwelcome sales activities on the day of installation
- ➔ Customers are not charged upfront or one-off for the smart metering equipment that suppliers are required to provide.

4.95. The Government considers that suppliers would be best placed to develop the code, drawing on their experience of installing both dumb and smart meters. Having a licence obligation would avoid the risk under a self-regulatory approach that industry fails to develop a code or that only some suppliers are party to it or that there are a number of different codes. In developing the code, suppliers will be required to take into account the views of consumer groups and other stakeholders. This approach would help ensure that the code addresses the needs of consumers and enable Ofgem to consider a code for approval as soon as possible.

4.96. Suppliers would be required to submit the code to Ofgem for approval. This would provide reassurance that the code adequately reflects its objectives and the principles enshrined in supplier licences, and that consumer views have been properly taken into account. Ofgem would then determine whether any proposed code is fit-for-purpose against the objectives set out in licences. The Government and Ofgem will work with suppliers to seek voluntary compliance with an appropriate installation code of practice before any licence requirements come into force.

4.97. Once approved by Ofgem, suppliers would be required to adhere to the code of practice. Ofgem would monitor compliance, having regard to all relevant information, and would be able to take enforcement action if a supplier is not complying with its licence obligations. Suppliers would also be required to put in place procedures for monitoring compliance with the code of practice. Suppliers would be under a licence obligation to inform their customers that they are signatories to the installation code of practice and what, in broad terms, this means. This should support enforcement of the code and help provide reassurance to consumers.

4.98. The code should have appropriate governance arrangements to ensure that it continues to be fit-for-purpose in the light of developments during the rollout. It is important that the code is straightforward to modify, for example to enable experience from the early stages of the rollout to be applied later. Suppliers will be required to establish procedures for regularly reviewing and updating the code. In making any changes, suppliers will be required to consult consumer groups and other relevant parties. Ofgem will have the right to veto any changes to the code. This approach avoids adding an extra stage to the modification process, while helping to ensure that modifications are not made that might, for example, undermine the consumer experience. Ofgem will also be able to initiate changes to the code.

4.99. The intention is that the licence obligation underpinning the code of practice should be time limited. The default would be that the licence obligation falls away once the rollout has been completed. There will be an opportunity to consider the need for similar requirements to be imposed on an enduring basis nearer to the time. Suppliers would be free to continue to apply the code of practice on a voluntary basis in the absence of a licence requirement in respect of ongoing provision of meters.

#### *Next steps*

4.100. In the next phase, the programme will consider further the detailed governance and monitoring arrangements that industry will be required to establish. This will include the potential for establishing a code panel and for it to be required to publish regular reports on the operation of the code.

4.101. The obligations on suppliers relating to the installation code of practice will be implemented through changes to the supply licences. These changes will come into force in the second quarter of 2012. Further details on this process can be found in the "Implementation Strategy" supporting document.

4.102. Since the publication of the Prospectus, the Energy Retail Association (ERA), on behalf of larger suppliers, has been developing, of its own initiative, an installation code of practice. The ERA held an initial consultation on a draft code late last year. Consumer groups have also been working on their own view of what a code should cover. We welcome the progress that is being made in this area and encourage suppliers to take steps that will further the development of the code. This includes engagement with stakeholders in the domestic and smaller non-domestic sectors. The programme will ask suppliers to publish a draft code for consultation alongside its own consultation on the draft licence changes.

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## 5. Monitoring and reviewing the rollout

This chapter sets out the programme's approach to monitoring and reviewing progress with the smart metering rollout in order to inform its ongoing policy development work during the foundation stage. It also sets out Ofgem's role in monitoring and enforcing compliance with the obligations that will be placed on suppliers to deliver the rollout.

5.1. There are many aspects to the successful delivery of the smart metering programme. Having in place robust monitoring and review processes throughout the rollout is a key feature of programme management best practice.

5.2. The Prospectus proposed to put in place reporting arrangements to allow the programme to monitor key indicators of progress. This included requirements on suppliers to report on progress with their installation programmes against a range of criteria.

5.3. The Prospectus also committed the programme to developing a mechanism for monitoring the consumer experience of the rollout. One key aspect of this will be the experience of the installation process. These monitoring arrangements may involve the programme carrying out further consumer research.

### Reviewing rollout progress

#### *Prospectus proposals*

5.4. In the Prospectus, the programme indicated an intention to review the progress of the rollout during its early stages. The aim of the review process was principally to assess the effectiveness of the rollout approach in delivering the benefits identified and to inform decisions on whether further measures could be introduced in order to increase the effectiveness of the rollout. This includes, for example, monitoring the effectiveness of the IHD in helping to facilitate the delivery of consumer benefits.

5.5. The Prospectus noted that, drawing on this analysis and evidence from the early stages of the rollout, the Government may propose modifications to the rollout strategy where these would address any issues identified or would provide for enhanced benefits. To provide for the appropriate range of powers during the course of rollout, the Government has proposed new provisions in the Energy Bill currently before Parliament.

5.6. To ensure transparency around the rollout, we also proposed to oblige suppliers to report and publish each year the number of their customers who have smart meters, and the number of those who still have dumb meters.

5.7. Finally, to assess the overall business case for smart metering effectively, we proposed to gather information on net supplier costs of their rollout activities.



*Evidence*

5.8. Nearly all respondents to consultation who commented expressed support for our proposal to require suppliers to report on the progress of the rollout. This included the majority of suppliers, nearly all consumer groups and network operators. Respondents argued that reporting would allow the programme to track the rollout of smart meters and, if the information were published, increase transparency.

5.9. There were mixed views on what information should be reported and how frequently. The majority of suppliers supported reporting on the number of completed meter installations. Some respondents suggested other areas that suppliers could report on, including the number of requests for energy audits, failed installations and customer complaints. A small number of respondents, including some consumer groups, considered it would be appropriate for suppliers to report on the costs of the rollout and the energy savings made by their customers who have smart meters. This would allow the programme to monitor whether the benefits of smart metering are being realised and identify any modifications to the rollout strategy that may be required. However, those larger suppliers who commented stressed the complexity and cost of reporting on changes in energy consumption.

5.10. Among the small number of respondents who commented, including a consumer group and a network operator, there was broad support for the proposal to review the progress of the rollout during its early stages. However, larger suppliers in particular raised concerns about the uncertainty caused by a potentially broad review not long after the start of the rollout.

*Government conclusions*

5.11. Throughout the foundation stage, the programme will monitor progress and seek to learn from early experience. This will draw on, among other things, lessons from suppliers' trials and pilots. This process will help inform the approach taken to consumer engagement and the detailed implementation approach.

5.12. Drawing on the evidence and analysis from the early stages of the rollout, the programme will review progress during the foundation stage. This will enable the Government to decide ahead of the mass rollout if any significant changes are needed to the broad approach to the rollout that is set out in this document.

5.13. The Government has concluded that all suppliers should be required to report regularly on, among other things, the number of their customers who have smart meters and the number of those who still have dumb meters. The programme will utilise this data as part of the review process. Suppliers will not be obliged to publish this data. However, the programme and Ofgem will consider publishing such data where appropriate.

*Next steps*

5.14. To enable a meaningful evaluation of progress during the foundation stage, the programme aims to put in place a robust framework as soon as possible. On the basis that meters with smart functionality are already being deployed, it is important that the programme is aware of developments in the market. To this end, the programme will work with industry in the next phase to identify and collect relevant information, on a voluntary basis initially. The programme will also develop the information suppliers will be subsequently be required to provide during the rollout.

**Monitoring compliance**

5.15. Once the Government has put in place the licence obligations on suppliers to deliver the rollout of smart metering, Ofgem will monitor compliance with suppliers' obligations as part of its enforcement work. This will be facilitated in part by the proposed requirements outlined in Chapter 2 for larger suppliers to provide their rollout plans to Ofgem, report regularly on progress against them and update them annually.

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## 6. Operational aspects of the rollout

This chapter discusses a range of issues associated with the installation of smart meters that could impact on the rollout. It also sets out the proposed approach of the programme in the next phase in relation to these issues.

6.1. The Prospectus noted that, during current day-to-day meter replacement activities, issues are uncovered at consumer meter points that require corrective action. These include meter backboards that are made of asbestos, damaged or faulty distribution termination equipment, and safety problems with consumers' gas appliances.

6.2. The vast majority of these issues are well understood, with many being dealt with by industry as part of usual business activities today. The rollout of smart meters will however increase the rate at which pre-existing challenges need to be resolved.

6.3. Resolving these issues may require interventions from network operators, energy suppliers, or meter operators, or may require individual consumers to take action. If they cannot be resolved prior to or at the point of installation, these issues may have a significant impact on the consumer experience as well as the efficiency of the rollout (eg where the smart meter cannot be installed until the issue is resolved). Some issues can require temporary disconnection of supply. The programme aims to minimise the impacts on the consumer experience of rollout.

6.4. The Prospectus also highlighted a number of wider operational issues that could impact the practical implementation of smart metering. These include the coordination and planning of field activities; recruitment, training and accreditation of smart meter installers; information collection and sharing between suppliers, network operators and others; and the decommissioning of shared systems.

6.5. The Prospectus did not ask any specific consultation questions in relation to the operational aspects of rollout. Nevertheless, throughout this phase, the programme has worked with a wide range of industry and other stakeholders, including the Health and Safety Executive, to identify the issues that could arise at the point of meter installation and their potential impact on consumers and the rollout. We have also worked collaboratively to identify the most productive approach to resolving operational issues, as well as co-ordination with the wider aspects of the rollout.

### **Operational issues of the rollout**

6.6. Good progress has been made in identifying the potential operational issues that could arise at a customer's meter point. To date, around 80 individual issues, covering both electricity and gas installations, have been identified with over 50 of these potentially meaning that a smart meter cannot be installed until the issue is resolved. As noted earlier, these are generally not new issues.

6.7. The programme considers that industry is best placed to continue to lead on this work. There are already a number of industry activities and processes in place to address many of the issues identified. This includes the work being carried out by existing groups in relation to MOCOPA and MAMCoP to assign responsibility for the resolution of each issue. This approach will allow industry to put plans in place to resolve known issues in advance of the mass rollout, where feasible.

### **Wider operational aspects of the rollout**

6.8. There are also a number of wider operational issues that have the potential to impact on the practical rollout of smart metering. These are described below.

#### *Coordination and planning of field activities*

6.9. The programme has considered the specification of technical solutions to address issues related to communications with meters (for example, in blocks of flats), including through the work of the Smart Meter Design Expert Group. Nevertheless, the physical implementation of the solutions will be a consideration for rollout planning. The implementation of any non-standard technical solutions may require coordination between suppliers, meter installers and network operators in order to minimise consumer disruption and maximise rollout efficiency.

6.10. Coordination and planning among industry parties may be required to resolve operational issues that are identified in advance of an installation visit or at the point of installation. Depending on the nature of the issue, it may be necessary to take action to resolve an immediate problem, or to include it in a planned programme of remedial action.

6.11. The programme welcomes efforts by industry, in conjunction with other relevant stakeholders, to address these issues. One particular area is the implementation of shared technical solutions and the effective and timely resolution of operational issues. It is important in such cases that consumers are kept informed and that the needs of vulnerable consumers in particular are addressed.

#### *Recruitment, training and accreditation*

6.12. The rollout of smart metering is predicted to require around a threefold increase in the number of meter installers. Progress has been made by the National Skills Academy for Power to baseline the current meter installer workforce capacity and its capability level. This provides a solid basis for the industry to carry out the detailed workforce planning that is needed to ensure that sufficient numbers of suitably trained staff will be available to undertake the mass rollout.

6.13. Some stakeholders have argued that the lack of national standards and training for electricity meter installers, similar to those required for the Gas Safe Register, may hamper the efficient and flexible deployment of resources. We welcome the

efforts being made by industry and other bodies in this area. It will be important to maintain standards during the ramp up of the installation workforce.

#### *Collection and sharing of information*

6.14. Early identification of those issues that could mean a smart meter cannot be installed until they are resolved should help to improve the efficiency of the rollout and minimise the disruption to consumers. By providing information on known issues to suppliers, network operators and, where appropriate, consumers, these issues could be addressed in advance of smart meter installation being scheduled, or could be planned for at the time of installation.

6.15. Arrangements for the sharing of information would be required to maintain the availability of an accurate site record, for example, on change of supplier. We encourage industry to consider the costs and benefits associated with undertaking a comprehensive programme of meter point information collection and knowledge management, and the likely changes required to current industry systems and processes. In the next phase, the programme may consider whether obligations are required to support such an exercise.

#### *Decommissioning of shared systems*

6.16. The UK's switchover from analogue to digital broadcasting is currently targeted for completion by 2015. Subject to confirmation of this timeline by the Department of Culture, Media and Sport, this will result in the decommissioning of the existing RTS signal overlapping with the mass rollout of smart meters.<sup>17</sup> The programme estimates that up to 3 million RTS devices are currently used to manage customer tariffs and carry out dynamic load control to support active network management.

6.17. We welcome steps being taken by industry to consider the impact of this issue on the rollout and encourage industry to identify what solutions are available and the related timings.

### **Next Steps**

6.18. The key role of the programme is to ensure that the operational issues discussed in this chapter are understood, and will seek assurance that parties who are responsible for resolving these issues have appropriate plans and processes in place. This might require changes to existing systems, processes or ways of working. It is envisaged that the parties responsible will manage any such changes. The programme proposes to establish a stakeholder group to facilitate the identification and discussion of these issues.

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<sup>17</sup> The Radio Teleswitch System (RTS) is a one-way data communications method used in the electricity supply industry to directly control heating loads and/or switch tariff rates on customers' meters. It utilises the BBC Radio 4 long wave signal.

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## 7. Next steps

7.1. The government response to consultation, of which this supporting document forms a part, sets out a range of decisions and conclusions. Collectively, these provide a robust platform for implementation. The next stage of work will require specific outputs to be delivered to build on this platform

7.2. The following are the main outputs in respect of the strategy for the rollout of smart metering drawn from the material presented in Chapters 2 to 6. In the next phase, the programme will:

- Implement the obligations on suppliers to deliver rollout through changes to the supply licences, including a definition of what constitutes a completed installation
- Implement the obligations on suppliers to report regularly on the number of their customers who have smart meters, and the number of those who still have dumb meters
- Develop the details of the obligation on larger suppliers to submit, report against and update rollout plans; and determine an appropriate threshold defining what constitutes a smaller supplier in the context of the exemption from this obligation
- Develop its readiness strategy, including the associated transitional obligations on industry participants
- Implement the obligations on suppliers to develop and adhere to the installation code of practice
- Develop definitions of sales and marketing activities, and consider further how suppliers should go about obtaining explicit prior consent from their customers
- Develop a consumer engagement strategy and a plan for implementing this strategy
- Develop a framework for assessing rollout progress and undertake a formal review to assess the effectiveness of obligations to deliver rollout
- Establish and chair a stakeholder group to facilitate the identification and discussion of operational aspects of the rollout.

7.3. These outputs form part of a consolidated plan for the programme as a whole. More detail on the timing and sequencing of these outputs and how they relate to other programme outputs can be found in the "Implementation Strategy" supporting document.

## Appendices

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## Appendix 1 - Rollout Profile Analysis

1.1. To secure early delivery of smart metering benefits, the Government committed in the Prospectus to working with industry and other stakeholders to examine opportunities for accelerating the rollout compared to previously published targets. The stated aim was to realise ambitious targets for the rate at which suppliers must install smart meters commensurate with an efficient rollout and a positive consumer experience.

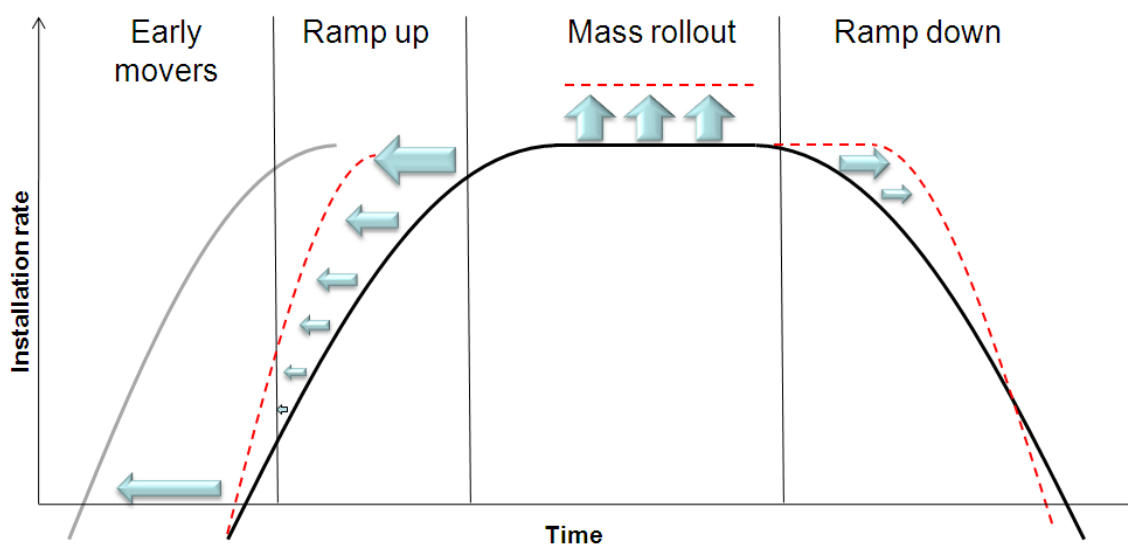
1.2. This appendix describes the approach undertaken by the programme to assess the feasibility, costs and risks associated with accelerating the rollout. It covers both the domestic and smaller non-domestic sectors. This includes a description of the different channels used to engage stakeholders. It then sets out a summary of the results of our analysis to date.

### *Prospectus approach*

1.3. The Prospectus requested views on two broad options for achieving acceleration. These options centred on suppliers either starting their rollout programmes earlier or achieving higher installation rates across the rollout. These options are not mutually exclusive.

1.4. For analytical and modelling purposes, we divided the rollout lifecycle into four stages. Figure 1 illustrates the options for acceleration within these stages.

**Figure 1 – Options for acceleration across the rollout lifecycle**





1.5. The main features of each stage are as follows:

- Early movers - Most suppliers will be carrying out initial deployments or trials of differing scale prior to the finalisation of the technical specifications for smart metering
- Ramp up - technical specifications are finalised, compliant metering systems are available and suppliers are in a position to start installing smart meters
- Mass rollout - suppliers are able to reach maximum deployment rates
- Ramp down - characterised by a higher proportion of hard-to-reach installations (eg long-term vacant premises, repeated inaccessible customers, lack of standard communication coverage and site-specific safety issues).

#### *Evidence*

1.6. To assess the feasibility of acceleration in the four rollout stages and the impact on costs and risks, we requested detailed information from stakeholders through a number of channels. This engagement and evidence gathering process has allowed us to develop a more detailed understanding of the key drivers of rollout volumes during the different stages of the rollout.

1.7. These engagement channels included the Prospectus consultation, requests for information and bilateral meetings. We held meetings with smaller suppliers, smaller non-domestic suppliers and consumer representatives. We have also analysed international evidence from smart metering rollouts in other countries to understand similarities and to compare installation rates.

1.8. In the Prospectus consultation, we asked stakeholders to comment on how the rollout timeline could be brought forward, and the impact this would have on programme costs and risks. Stakeholders made a number of suggestions as to how the rollout could be brought forward. Proposals relating to acceleration of the delivery of the technical specification, and faster establishment of DCC have been considered by the programme. Our analysis suggested that there was no scope to significantly advance any of these key milestones. Indeed, the planning assumption for when DCC will start providing services has moved back from Autumn 2013 to the end of the first quarter of 2014. Further information can be found in the "Central Communications and Data Management" and "Design Requirements" supporting documents.

1.9. A further option for acceleration is for suppliers to increase rollout volumes in the period before the establishment of DCC. To inform our understanding of this ramp-up period, we gathered information from the majority of larger suppliers and some smaller suppliers on their proposed meter procurement processes. This process runs from vendor selection and commercial contracting through product development to the mobilisation of equipment in the field. We used the Prospectus milestone around availability of the technical specifications as a key planning assumption. We also held discussions with representatives of meter manufacturers to understand their likely production and delivery timelines.

1.10. This exercise produced a range of responses, largely depending on the procurement strategy of each individual party. This analysis indicated that bulk supply of compliant metering equipment would be available for all suppliers from around the fourth quarter of 2012 although some may have supply earlier. The planning assumption used in the Prospectus was the third quarter of 2012.

1.11. Larger suppliers expressed concern about the prospect of the Government requiring large-scale rollout before DCC starts providing services. Key concerns included the technical and commercial risks to interoperability of installing large numbers of metering systems before DCC is operational. Moreover, these suppliers emphasised the need for sufficient time to prepare end-to-end systems and processes for mass rollout. This was viewed as important to the consumer experience.

1.12. The remaining option for acceleration is for suppliers to install meters at higher rates following the establishment of DCC. It is difficult to draw many conclusions in this area from international evidence. There are key structural differences between the rollout approaches around the world and in Great Britain. Our rollout is on a larger scale and has a wider scope than international rollouts to date, by providing domestic consumers with both electricity and gas smart meters together with an IHD as part of an integrated smart metering system. Key differences also exist in the objectives and responsibilities for the rollout. Bearing these in mind, a key feature of international deployments is a foundation stage involving large-scale pilots running for a period of two to three years. Many of these rollouts have been or are planned to be completed within five years after the piloting phase.

### **Key assumptions**

1.13. Based on information provided by stakeholders and the current set of programme milestones, we have developed three scenarios in terms of installation rates (low, central and high) with differing installation rates across the rollout stages. These scenarios are solely used for modelling purposes to create profiles to quantify costs and benefits. More information on their impact on costs and benefits can be found in the Government's impact assessment.

1.14. As described above, we have divided the rollout into four stages. In each stage, we have made the following assumptions regarding the rollout strategy of individual suppliers:

#### *Early movers*

1.15. In this period, from present to the first quarter of 2012, we have assumed that 50 percent of the meters installed will be compliant. This is unchanged from the previous impact assessment assumptions.

*Ramp up*

1.16. Ramp up runs from the earliest date from which suppliers have indicated they can start installing compliant metering systems taking into account their individual projections to when DCC starts to provide services (ie the end of the first quarter of 2014).

1.17. In the high scenario, based on when individual suppliers have indicated they can start installing compliant metering systems, we assume that a new and replacement installation rate is reached from these dates (ie smart meters are installed in new build properties and dumb meters are replaced at the end of their functional life). In the central and low scenarios, we assume suppliers roll out according to their own commercial strategies, with some reaching new and replacement levels earlier than others.

1.18. We assume that there are no constraints on the availability of trained field staff for the installation volumes considered in this ramp-up stage.

*Mass rollout*

1.19. We assume that maximum deployment rates are achieved six months after DCC starts providing services and that there should be no constraints on the volumes of communications contracts that DCC can accept. Such peak volumes are assumed to be maintained until individual suppliers reach the final ten percent of installations as a proportion of their customer base.

1.20. We assume average peak installation rates of 23, 19 and 17 percent per year for the high, central and low scenarios respectively.

*Ramp down*

1.21. We assume ramp down is reached when individual suppliers reach the final ten percent of installations as a proportion of their customer base. This period is characterised by a higher proportion of hard-to-reach installations eg long-term vacant premises, repeated inaccessible customers, lack of standard communication coverage and site-specific safety issues.

1.22. Information provided by energy suppliers indicates that it could take up to three years to complete these harder-to-reach installations. For modelling purposes, we assume that the yearly distribution of installations within these last three years is six, three and one percent respectively. This reflects the likely increasing complexity in resolving the most difficult issues.

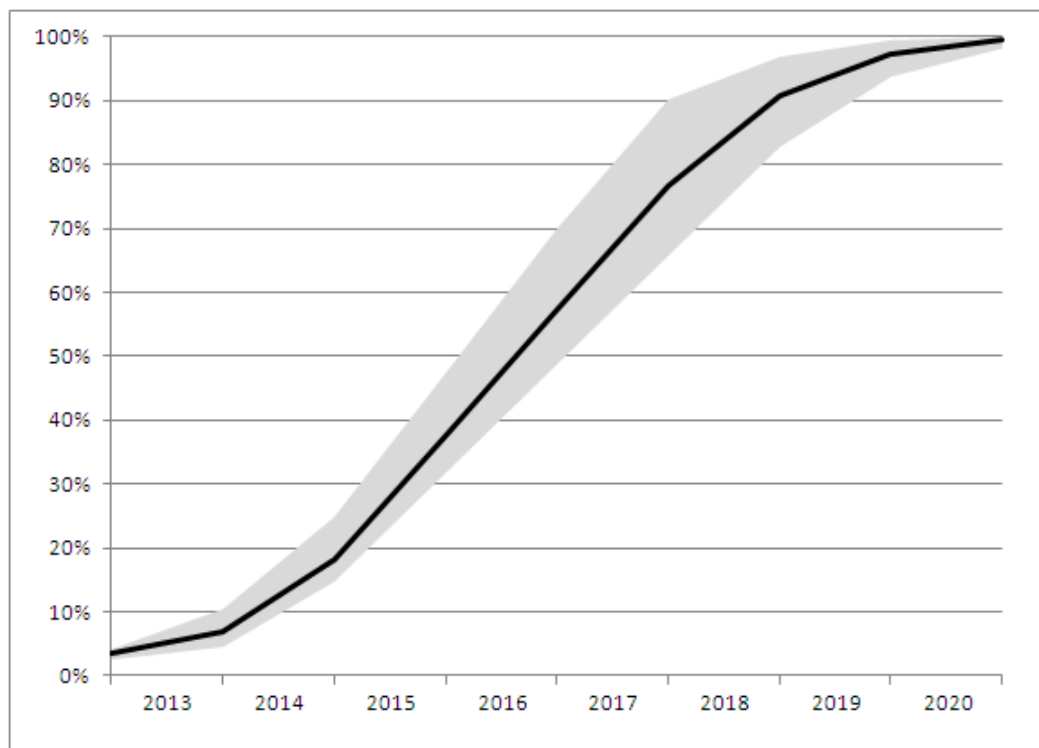
## Results of analysis

1.23. The results of our modelling are set out below. Using the impact assessment published by DECC in December 2009 as a benchmark, effective completion of the rollout occurs at the end of 2018 under the high scenario, at the end of 2019 in the central case and around the end of 2020 under the low scenario.

**Table 1 - Cumulative annual installation volumes**

% Meters Installed	Low	Central	High
End 2016	49%	57%	70%
End 2017	66%	77%	90%
End 2018	83%	91%	97%
End 2019	94%	97%	100%
End 2020	98%	100%	100%

**Figure 2 - Range of cumulative rollout volumes**



1.24. The key message from the vast majority of stakeholders in response to our consultation and open letter was that accelerating the rollout would bring forward benefits, but that this could be outweighed by an increase in costs and risks. Stakeholders generally noted that the higher the peak installation rates, the greater the operational risk. The point at which these risks become unacceptable for

consumers is not easily quantifiable. Concerns were also raised by consumer groups that consumer benefits could be missed in any rush to meet rollout targets.

1.25. Both benefits and savings come on stream sooner the faster the rollout. An accelerated rollout would bring forward energy savings and greater tariff choice to consumers, and allow most cost savings to energy suppliers to be realised earlier. With a shorter rollout period, the need for suppliers to run two "back-office" systems, one to support customers operating in the "dumb world" and one for customers operating in a smart-enabled world, is limited to a shorter period of time and therefore costs are likely to be lower.

1.26. There are however risks and additional costs associated with higher peak installation rates. Uncertainty around the magnitude of these risks increases as we move to the more accelerated scenarios. The rollout of smart meters requires a skilled labour force and the availability of compliant equipment. Acceleration would put pressure on the labour and equipment supply chains as well as capital costs. Setting an accelerated completion date for the rollout would also cause a greater proportion of dumb or non-compliant electricity and gas meters with smart functionality to be removed before the end of their normal economic life. While stranding costs are not accounted for in the programme's business case, this would create costs for either the owner of the asset or suppliers depending on the contractual arrangements in place. These increased costs could subsequently be passed through to consumers.

1.27. Other general risks affecting consumers might include a reduction in installation quality and heightened risk of operational incidents. There may also be social costs associated with a steep ramp down, as large numbers of similarly qualified workers could lose their jobs over a short period of time. Acceleration could also result in a reduction in the time being spent on customer engagement, which is a fundamental driver of the benefits case.

1.28. In summary, our analysis indicates that moving from the low to the high scenario could have a negative impact on the net present value of the rollout of £200 million. However, we have not been able to quantify many of the risks outlined above for the high scenario in particular. We are more confident that the costs and risks associated with the low and central scenarios have been accurately quantified. Further information on the impact of acceleration on costs and benefits can be found in the Government's impact assessment.

## Appendix 2 - Interim Interoperability Arrangements

1.1. This appendix assesses the options for supporting interoperability of compliant smart meters in the period before DCC services become available.

### Options considered

1.2. A number of options for supporting interoperability were identified in conjunction with the relevant subgroup of the Data and Communications Expert Group, namely:

- Four "interim body" options, in which a pre-DCC central service provider is established to facilitate interoperability
- Two "supplier hub" options, in which suppliers provide services to each other.

1.3. Sub-options were then identified based on whether meters used the interoperability mechanism from installation or from change of supplier. Further sub-options were defined based on whether they required multiple head-ends (to work with different makes of smart meter) or a single universal head-end (able to talk to all makes of smart meter that comply with the technical specifications).

1.4. In addition the programme considered various 'do nothing' options, in which no arrangements are put in place to support interoperability. The options considered included meters reverting to dumb mode on change of supplier, meters being replaced on change of supplier, and a combination of these approaches.

### Assessment

1.5. The various options were assessed against the evaluation criteria set out in the Prospectus. These include consumer interests, costs, benefits and risk, timescale and security. The potential impact on the establishment of DCC was also considered.

#### **'Do nothing' options**

1.6. The do-nothing options appear attractive from a cost/benefit perspective. However, there would be a risk of consumer detriment from smart meters losing functionality (reverting to dumb mode) on change of supplier. There could also be stranding risks to suppliers (due to the reduced rent for a smart meter operated as a dumb meter). This risk could reduce suppliers' motivation to roll out smart meters before DCC service availability, adversely affecting the programme's overall rollout timescale.

**Interim body options**

1.7. Options with pre-DCC central services would likely be subject to similar procurement rules and timescales to DCC enduring services, so delivering them in sufficient time before DCC services would be difficult. The central body service providers with these options might also be seen to have an advantage in the DCC licence application process or in the competitive procurement of DCC services. Preventing the central body or its service providers from bidding to provide DCC enduring services could reduce this risk, but might also introduce a new risk that no credible service provider would be willing to provide the pre-DCC central body or services.

**Supplier hub options**

1.8. Two supplier hub options were considered. In one, the installing supplier would provide data and communication services to the gaining supplier after change of supplier. In the other, the installing supplier would provide meter technical details and novate the communications contract to enable the gaining supplier to operate the meter directly. Supplier and service provider responses to our information requests indicated that both of these options could be deliverable within the required timescales and without compromising the procurement of DCC services.

1.9. The first of these options could be more appropriate for a gaining supplier without its own meter management systems. The latter might be more appropriate for a supplier with the infrastructure to manage the meter it had gained. Given that suppliers are starting from different positions, competition could be maximised by allowing the gaining supplier to choose which option to adopt. This implies that the installing supplier should offer both options to the gaining supplier.

1.10. Installing suppliers only fit meters that they can operate. Gaining suppliers can potentially gain any make of meter. The cost to operate a new meter type may be prohibitive if new head end software must be bought and configured. Discussions with the programme's expert groups have indicated that the smart metering technical specifications could include details of the messages used to operate meters. This would remove the need for suppliers to operate multiple head-ends.

## Appendix 3 - Consultation Responses

1.1. The Prospectus consultation document published on 27 July 2010 sought the views of interested parties in relation to a package of proposals. We received 279 responses from 197 different stakeholders. This appendix summarises responses received to consultation questions asked in the Prospectus and its supporting documents on the subject of rollout strategy and consumer protection.

1.2. Consultation responses were provided by a wide variety of stakeholders. A full list of those that responded is provided in the Overview document, which this document is published alongside. The programme has considered each consultation response and the evidence and opinions contained in it. These have informed our analytical work and, in turn, the conclusions reached by the Government.

1.3. In order to provide an accessible overview of the consultation responses received, we have sought to group responses under types of stakeholders. Where the consultation responses of particular respondents or classes of respondents have not been mentioned in the following overview this does not mean that they have not been considered or given due weight and merely reflects the summary nature of this overview.

1.4. Responses received by the programme which were not marked as being confidential have been published on Ofgem's website ([www.ofgem.gov.uk](http://www.ofgem.gov.uk)).

### Obligations on suppliers to deliver rollout

Prospectus question 16: Do you have any comments on the proposals for requiring suppliers to deliver the rollout of smart meters (including the use of targets and potential future obligations on local coordination)?

1.5. There was broad support from respondents on the proposal requiring suppliers to deliver the rollout of smart metering. There were a range of views on the use of targets with larger suppliers broadly opposed to the proposals. Smaller suppliers expressed mixed views while other respondents broadly supported the proposals. The majority of larger suppliers expected local coordination to evolve without the need for any obligations. The smaller suppliers largely opposed the need for local coordination, whereas the majority of other respondents believed that local coordination could offer benefits in terms of improved customer engagement, alignment with other energy efficiency initiatives, minimising costs and the future development of smart grids.

#### *Suppliers*

1.6. The majority of suppliers who commented strongly supported the proposal that suppliers should be responsible for delivering the rollout of smart metering as they would be best placed to understand their customer requirements and maximise their



engagement. They argued that it would be important for suppliers to retain flexibility in the pattern of their installations. In addition, they advocated that there should be no prioritisation of specific customer groups as this would add complexity, increase costs and potentially delay the rollout.

1.7. A minority of larger suppliers advocated that while supportive of a supplier led rollout, it would be more cost effective and involve less commercial and technical risk if the smart metering assets were included in the regulated asset base.

1.8. There was broad opposition to the introduction of interim targets from nearly all the large suppliers who commented. They felt that there would be significant risks and uncertainties associated with the rollout, and that the introduction of interim targets could reduce flexibility, drive inefficiency and add costs. It was suggested that any targets should be indicative only and should not be considered in advance of DCC being in place. One larger supplier suggested that suppliers should be obliged to draw up their own rollout plans and report against these rather than have set targets.

1.9. There were mixed views from the smaller suppliers with respect to interim targets. One supplier advocated that there should be no interim targets due to the commercial dependencies on third parties and the movement in the customer base which could disproportionately affect smaller suppliers. Another opposed interim targets but suggested that suppliers should be obliged to submit their rollout plan. One stated that targets would provide a strong incentive to complete the rollout within the timeframe and suggested that it could be linked to market share. A small number advocated that any targets would need to take into account the specific circumstances of smaller suppliers and would need to be negotiated on a bi-lateral basis.

1.10. The majority of the larger suppliers who commented expected local co-ordination to evolve naturally, and on a voluntary basis. One larger supplier advocated that the flexible approach should be maintained throughout rollout as introducing obligations for local co-ordination later would reduce efficiency, increase costs and delay competition. Another suggested that while it would be prudent to review the rollout, careful consideration would need to be given to introducing constraints later.

1.11. One smaller supplier stated that an obligation on local co-ordination would be inefficient, with another stating that smaller suppliers should not be required to install in specific geographical areas with low customer density. It was recognised by one smaller supplier that there may be scope for cooperation between suppliers in certain circumstances, ie the provision of metering services.

#### *Consumer Group*

1.12. The only consumer group that commented supported the proposals including the market led approach and the use of targets.

*Other Respondents*

1.13. Other respondents who commented included meter manufacturers, meter operators, telecommunications companies, consultants, service providers, trade associations and industry bodies. Among these respondents there was broad support for the proposal that suppliers should be responsible for the rollout as they have the resources for managing the day-to-day process and have a direct relationship with the customer. A minority of respondents advocated that the rollout should be network operator led.

1.14. Respondents expressed broad support for the introduction of interim targets. It was suggested by a small number of respondents that annual targets should be set based on customer numbers or market share in order to focus suppliers to achieve rollout in a timely manner and deliver maximum benefits. It was also suggested that penalties and incentives should be considered for under and over achievement relative to the targets and that targets should be enshrined in supplier licences.

1.15. Very few respondents commented on the need for special arrangements for smaller suppliers and for the non-domestic sector. Those who did advocated that smaller suppliers should be treated in the same way as larger suppliers.

1.16. Among respondents who offered views on local co-ordination, the majority felt that it would be beneficial for customer engagement, alignment with other initiatives eg Green Deal, minimisation of costs and the future development of smart grids. It was also suggested that rollout plans should be made available to water companies to enable them to coordinate activity and potentially minimise disruption to customers.

1.17. Very few respondents commented on the benefits of co-operation between suppliers to address challenges posed by specific types of building (eg blocks of flats) where communications may be more difficult. Those who did broadly agreed that these challenges would need to be planned and co-ordinated separately to deploy industry agreed solutions.

**Targeting framework**

Prospectus question 18: Do you have any other suggestions on how the rollout could be brought forward? If so, do you have any evidence on how such measures would impact on the time, cost and risk associated with the programme?

1.18. Among the respondents who answered this question, three key themes emerged as to how the rollout could be brought forward. First, the early development and approval of technical specifications and common standards, second, the acceleration of the procurement and set up of DCC, and third the need for commercial certainty around metering assets. In addition, the need to build a solid foundation for the rollout was viewed as important by a number of respondents.

### *Suppliers*

1.19. There were mixed views from the larger suppliers on how the rollout could be brought forward. One suggestion was bringing forward the establishment of DCC, with a substantial ramp up of rollout activity being achieved once it is in place. It was also suggested that acceleration could be achieved by the early agreement of technical specifications. Specific reference was made by a minority of respondents for the need to use the time upfront for preparation and planning. It was suggested that this would mitigate the risk of failure, and over time identify further opportunities for acceleration. One larger supplier suggested that the key to acceleration would be earlier certainty over meter specifications. This would allow earlier deployment of compliant meters and mobilisation of the supply chain.

1.20. Around half of the smaller suppliers who commented, raised the need for commercial certainty to allow suppliers to continue to roll out smart meters without risk of stranding assets in advance of functional and technical specifications being finalised. It was also suggested that smart meters installed by early adopters should be exempt from these requirements for a period of ten years, subject to meeting a minimum agreed standard, or that these meters could be replaced at the end of the rollout. Another respondent suggested that the delivery date for DCC could be brought forward by implementing the regulatory framework earlier in conjunction with scoping DCC.

### *Metering, communications and specialist service providers*

1.21. A large minority of this group of respondents suggested that the most effective way to bring rollout forward would be through the early agreement of technical standards. It was suggested that this could be achieved by using existing standards or by taking into account work already done by industry. A small number of respondents suggested that it could be achieved by procuring and establishing DCC as soon as is practicable, in parallel with the development of the regulatory framework. A small number of respondents suggested that large scale trials could be deployed in the interim period as a way of significantly de-risking the programme and accelerating rollout during this period. Commercial arrangements which reduce the risk of asset stranding, and encourage early movers, were suggested by a small number of respondents to be a way to bring forward the rollout. One service provider suggested that a speedier rollout could be achieved by allowing the retro-fit of HAN modules to existing gas meters that have a considerable operational lifetime remaining. Another suggested that it would be important to reduce uncertainty in the communications technology, interim market arrangements and transition arrangements to DCC.

### *Other respondents*

1.22. Responses from the limited number of other parties including trade and industry bodies, technology providers, network operators and individuals followed broadly similar themes. The early agreement of technical specifications and the fast tracking of DCC were suggested by a minority of respondents. The requirement for

pilots was suggested by a small number of respondents, with one respondent suggesting the need for commercial arrangements to protect pre-compliant meters from stranding. One respondent suggested that additional benefits could be achieved by building on aspects of existing best practice governance arrangements. Network operators raised the importance of coordination between suppliers and networks during the rollout to resolve service point issues in an effective and efficient manner.

Rollout Strategy question 9: What rate of installation of smart meters is achievable and what implications would this have?

1.23. Most respondents who commented on this question recognised the significant increase in meter installation staff that would be required to complete an accelerated rollout. The majority of respondents who provided a view estimated that the rate of installation required would be between 2-4 times current volumes dependent on the length of the rollout programme.

#### *Suppliers*

1.24. Among the larger suppliers who provided comments, nearly all highlighted the risk of increased costs. One stated that the shorter term arrangements required would lead to increased costs in recruitment, training and pay rates. A second respondent said that increased costs would arise if suppliers are not given enough flexibility to deliver their business case. Another suggested that costs would rise as a result of capacity constraints in the availability of components, manufacturing assembly and skilled resources.

1.25. One larger supplier commented that the installation rate would be different in the ramp up, mass rollout and tail phases of the programme and that customer experience should take precedence over pace of rollout.

1.26. The smaller suppliers who commented suggested that the biggest challenge for the industry will be achieving a significant uplift in the current numbers of meters installed. They commented that the availability of sufficient numbers of meters and accredited meter installers could be a major constraint, particularly in relation to gas. One respondent suggested that the domestic rollout could act as a drain on meter installer resources in the larger non-domestic sector.

#### *Other respondents*

1.27. There were a wide range of views among other respondents who commented on this question, including meter manufacturers, meter operators, meter installers, specialist service providers and trade and industry bodies. The majority of respondents estimated that the rate of installation required would be between two and four times the current volumes. One meter operator suggested that a doubling of the normal meter replacement volumes would be easily achievable, with a five year deployment being the fastest possible without a serious risk to safety and

quality standards. They also suggested that a five to seven year programme would create sustainable employment for the meter installation workforce in the medium term. This would avoid the problems a faster rollout would entail in terms of mass recruitment followed by mass redundancy.

1.28. A small number of respondents commented that acceleration would have the potential to impact the cost base and slow the programme down as resources become scarce. A small number of trade associations made the point that the only way to ensure that the programme is delivered with full trust and confidence will be to use a directly employed workforce which is competent, fully trained and effectively managed. It was suggested that robust workforce modelling would be a key determinant in ensuring this.

1.29. The only consumer group who specifically commented, made the point that the rate of installation should enable all customers to get the information, advice and support they require during the installation visit to enable a positive customer experience.

Rollout Strategy question 6: Do you agree with the proposed obligation on suppliers to take all reasonable steps to install smart meters for their customers? How should a completed installation be defined?

1.30. There was broad support from the majority of respondents for the proposal that suppliers should be obliged to take all reasonable steps to install smart metering for their domestic customers. Two main themes emerged from the majority of respondents on the definition of a completed installation. Firstly, respondents felt that it should include smart meters that meet the minimum specification, and a requirement that all IHD and communications equipment is safely installed and tested, including registration and set up in DCC. Secondly, respondents discussed the need for customers to receive appropriate information, advice and support on how to maximise the benefits of smart metering at the point of installation.

### *Suppliers*

1.31. Among the suppliers who commented, there was strong support for the proposal to oblige suppliers to take all reasonable steps to install smart meters for their domestic customers. Most respondents commented that further clarity was required on the definition of all reasonable steps.

1.32. The larger suppliers made a number of points regarding the expectation that suppliers would not apply for warrants to install smart meters. The majority acknowledged that the use of warrants would be undesirable; however respondents felt that careful consideration would need to be given to situations where reasonable steps have been taken to exchange the meter without access having been obtained. A majority of larger suppliers cited the significant additional cost of maintaining dumb systems and services for a small number of remaining customers.

1.33. There was a mix of views from the suppliers who commented on the definition of a completed installation. The majority cited the need for a fully functioning smart metering system, installed safely in an appropriate position, with proven communications between each element of the end-to-end smart metering system, ie electricity and gas meters, WAN, HAN, IHD and DCC. One suggested that it should also be a requirement to have the smart metering system registered with DCC. Another suggested that a completed installation should also include prepayment functionality being fully operational and appropriate information provided to the customer.

1.34. It was also suggested that in the case of two single fuel suppliers at the same premises, the lead supplier should take all reasonable steps to ensure that the meter for the second fuel can communicate with the HAN. Another advocated that the definition of a completed installation must recognise the situation where a customer does not want an IHD.

#### *Consumer Groups*

1.35. Nearly all the consumer groups who responded supported the proposal that suppliers should be obliged to take all reasonable steps to install smart meters for their domestic customers. One respondent suggested that very detailed guidance will be needed which should challenge suppliers based on best practice solutions internationally and not be limited by supplier's current capabilities and operating practices. Another suggested that Ofgem should determine what is reasonable.

1.36. A range of suggestions were made as to what constitutes a completed installation. A large minority of respondents advocated that as a minimum, a completed installation should include smart meter, WAN, HAN and a separate IHD that comply with agreed minimum standards and are fully operational. In addition customers must have received appropriate information and support at the point of installation. One respondent suggested that customers must also be able to access all the intended benefits of the minimum smart metering system functionality ie the customer has received their first accurate bill, is able to switch between credit and prepayment functions remotely and can access near real time information on their display.

1.37. It was advocated by one respondent that the definition of a completed installation should also cover post installation information provided by a follow up contact after the physical installation has been completed. Another commented that flexibility in the definition would be required to account for full and partial installations, ie where a customer doesn't want an IHD.

#### *Other Respondents*

1.38. Other respondents to this question included metering manufacturers, meter operators, telecommunications companies, specialist service providers, network operators and trade and industry representatives. These respondents expressed broad support for the proposal that suppliers should take all reasonable steps to

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install smart meters for their domestic customers. A small number advocated the need to have a simple and standardised reasonable steps definition.

1.39. There was strong support for a definition of a completed installation to include a safely installed and functioning smart meter that meets the minimum specification, IHD and communications equipment including registration and set up in DCC. Around half of the respondents proposed that it should include the provision of appropriate information and advice to the customer. Individual respondents suggested that the installation should not be considered complete until; all industry meter change processes are completed, both fuels are installed and there are no outstanding complaints or enquiries received 30 days after installation. There was broad support from the majority of respondents for the proposal that suppliers should be obliged to take all reasonable steps to install smart meters for their domestic customers.

Rollout Strategy question 7: Do you think that there is a need for interim targets and, if so, at what frequency should they be set?

1.40. Respondents to this question included suppliers, consumer groups, meter manufacturers and operators, telecommunications companies and service providers. A majority of respondents expressed support for establishing interim targets.

#### *Suppliers*

1.41. Most larger and smaller suppliers who answered this question opposed interim targets. These respondents felt that targets could increase costs and reduce efficiency by constraining suppliers' ability to determine their own rollout profiles. It was also felt that setting interim targets could delay the start of rollout. Instead of introducing interim targets, larger suppliers suggested that there should be a requirement to report against rollout plans. It was argued that this would provide sufficient certainty to the programme about rollout progress. One supplier suggested that if there were to be targets, these should be focused on the period before DCC in order to drive installation of smart meters in the early stages.

1.42. If targets were to be introduced, of those suppliers who commented most favoured setting these annually. However, one larger supplier felt targets should be set once every two years.

#### *Consumer groups*

1.43. Among the consumer groups who answered this question, most supported the introduction of interim targets. It was felt that such targets would be needed to deliver rollout and avoid suppliers deploying smart meters in a way that does not benefit consumers. One consumer group expressed reservations about interim targets. It was suggested that requiring suppliers to install high number of meters before they are properly prepared could damage the consumer experience.

*Other respondents*

1.44. Among other respondents, including most telecommunications providers, meter operators and installers as well as services providers, there was strong support for the establishment of interim targets. A range of reasons were put forward to support this view. Respondents suggested that targets would avoid suppliers delaying rollout. It was also felt that targets would reduce DCC costs by providing it with an expected volume of meters to serve.

1.45. With regard to the frequency of targets, among those who commented there was broad support for these to be set annually. This included the majority of service providers, telecommunications companies and trade associations. Other suggestions were to set targets monthly, quarterly or biannually.

Rollout Strategy question 8: Do you have any views on the form these targets should take and whether they should apply to all suppliers?

1.46. Responses to this question were received from suppliers, meter manufacturers, meter operators, telecommunications companies, trade associations, service providers, network operators and one industry body. Of those respondents who commented on the form that interim targets should take, a large minority considered that these should be expressed as a proportion of the supplier's customer base. Only a limited number of respondents commented on whether all suppliers should be subject to interim targets. Of those who expressed a view, around half felt that targets should apply to all suppliers.

*Suppliers*

1.47. If there were to be targets, the majority of larger suppliers who commented argued that they should be based on the number of installations achieved. It was felt that this approach would mitigate the risks associated with customer churn. All larger suppliers who expressed a view believed that targets should apply to all suppliers. It was suggested that differing obligations could be viewed as discriminatory. They also stressed that in setting targets, the programme would need to consider volumes of 'heard to reach' and the technical difficulty of some installations.

1.48. Nearly all smaller suppliers who responded to this question felt that targets should not be introduced for the smaller non-domestic sector. These respondents also felt that volume targets should not apply to smaller suppliers because they need greater flexibility to plan the rollout. It was also suggested that smaller suppliers may be less able to meet interim targets because they might not have in-house metering businesses.

*Service providers, telecommunications providers and network operators*

1.49. A small majority of service providers, telecommunications providers and network operators argued that targets should be expressed as a proportion of

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customer base. It was felt that this would provide a more appropriate measure of rollout progress. A minority of telecommunications providers and service providers suggested targets should also apply to DCC.

#### *Other respondents*

1.50. Other respondents including consumer groups, trade associations, meter operators and meter manufacturers, put forward a range of alternative suggestions on the form that interim targets could take. Very few respondents, including one consumer group, suggested that targets should incentivise the quality as well as the number of installations. Some meter manufacturers felt that targets should be linked to the Carbon Emissions Reduction Target (CERT) and the Community Energy Saving Programme (CESP), while one meter operator argued targets should take the same form as those that govern meter replacement today.

Prospectus question 5: Do you have any comments on the proposed approach to smaller non-domestic consumers (in particular on exceptions and access to data)?

1.51. Of those who commented, a small majority supported the proposed approach to exceptions, with most respondents supporting the proposals on access to data.

#### *Suppliers*

1.52. The majority of larger suppliers supported the proposed approach to exceptions for advanced metering, as it offers flexibility to suppliers and customers to install the most appropriate metering system. They also advocated that further exceptions should be kept to a minimum.

1.53. There were mixed views from the smaller suppliers who commented on the proposed approach to exceptions. Those who supported the proposal believed the approach to be appropriate. Those opposing it variously suggested that smaller non-domestic customers should have the same benefits available to them as domestic customers, a two tier approach would cause complexity and confusion and that a more appropriate definition of meters that need to have full smart functionality should be based on meter type rather than annual consumption.

1.54. There was strong support from the larger suppliers for the principle that smaller non-domestic customers should be able to easily access their data in a format that best suits their individual business requirements. As such, these respondents felt that the most appropriate way of providing access to data should be agreed on a contractual basis between customers and their suppliers or agents. The smaller suppliers who commented believed the proposed approach to be appropriate.

*Metering, communications and specialist service providers*

1.55. There were mixed views among this group of respondents, with a small majority supporting the proposals on exceptions on the basis that they would provide flexibility, and be suitable to meet the needs of this sector. A small number of respondents commented that exceptions should be kept to a minimum as they would reduce the level of benefits, and disrupt the economics necessary to provide a competitive offering. There was also concern from a small number of respondents about allowing exceptions on the grounds of supply interruption being risky and expensive. One respondent suggested that the 2014 cut off date should be removed to allow customers to retain choice.

1.56. There was strong support for the proposals on access to data. Respondents felt that smaller non-domestic customers should have commercial choice and flexibility to receive information in a format that best suits the needs of their business.

*Other respondents*

1.57. Around half of the other respondents including trade associations, industry bodies and network operators supported the proposals. One commented that many smaller non-domestic customers already utilise sophisticated metering arrangements across the whole portfolio of their estate, therefore the arrangements for smart meters should enable them to utilise common solutions for all their premises. Another believed that the proposals should go further and suggested that all smaller non-domestic customers should have the option to adopt smart or advanced metering post 2014. It was also proposed that the current licence condition covering larger non-domestic supplies should be extended to cover all non-domestic meters. One respondent stated that there was no justification for not mandating smaller non-domestic customers to have smart meters including an IHD irrespective of whether they already have an advanced metering system.

1.58. A majority of respondents in this group supported the proposals on access to data for the reasons of flexibility and customer choice. A small number of respondents suggested that there should be no reason why the provision of an IHD should not be mandated in the same way as the domestic sector.

Non-Domestic Sector question 2: Do you agree with our proposed approach to exceptions in the smaller non-domestic sector?  
Non-Domestic Sector question 3: Are there technical circumstances that we have not considered that would justify further flexibility around installation of either smart or advanced meters?

1.59. Overall most respondents agreed with the proposed approach to exceptions in the smaller non-domestic sector.

### *Suppliers*

1.60. Nearly all the large suppliers supported the proposals on exceptions, with the majority commenting that the reasonable steps approach provides flexibility and recognises that there will be circumstances where the installation of smart metering may not be possible. A minority of the large suppliers said that they expected the circumstances where it is not possible to install a smart meter to be minimal. It was suggested by one respondent that where a smart meter cannot be installed, reasonable steps should be taken to install an advanced meter. One larger supplier advocated that the market design for both the domestic and non-domestic sector should be the same except where the customer chooses the large business advanced metering option and this should continue post 2014.

1.61. There were mixed views on the proposed approach to exceptions from the smaller suppliers who responded. One respondent advocated that advanced meters could continue to be installed in the smaller non-domestic sector without the requirement to proactively replace them with smart meters prior to the end of their useful life. If customers are given the right to require their supplier to install a smart meter where an advanced meter is already installed, this would present an unacceptable commercial risk to suppliers or require them to recover their costs at a more aggressive rate.

### *Metering, communications and specialist service providers*

1.62. Among the metering, communications and specialist service providers who responded, most supported the proposals. A minority of respondents stated that in general, exceptions are undesirable as they will reduce the level of benefits delivered by smart metering and disrupt the economics necessary to provide a competitive and economic offering. They were also concerned about exceptions on the grounds of supply interruption being risky or expensive. One respondent commented that clear guidelines will be required in the new codes to ensure that fit for purpose advanced metering is not needlessly removed. A very few respondents advocated that smaller non-domestic customers should have the option of choosing advanced or smart meters.

1.63. Respondents considered that there would be merits in using the WAN module for all the meters, such as reducing the maintenance overheads and operational complexity. As with the domestic market, difficulties regarding remote or underground premises were highlighted. Broadly, respondents considered there to be technical circumstances that we have not considered that would justify further flexibility around installation of either smart or advanced meters, eg teleswitches and contactor configuration.

### *Industry bodies and trade associations*

1.64. Of the limited number of trade and industry bodies who responded, nearly all agreed with the proposed approach to exceptions. A minority suggested that they expected that any problems could be overcome and therefore there would be no

requirement for any additional exceptions at this time. One advocated that a uniform approach should be taken across the entire non-domestic sector where advanced metering is available to all users and that the time restriction of 2014 is removed. Another suggested that in cases where the installation of a smart meter would be extremely difficult and costly and would lead to significant disruption, then it would be proportionate to allow an exemption.

#### *Network operators*

1.65. Nearly all of the network operators who responded supported the proposals. Respondents suggested that DCC should be mandated otherwise a duplicate system would be needed. It was suggested that DCC should migrate all non-domestic customers onto their standard solution and operational models.

1.66. It was suggested by respondents that an optical port could be utilised instead of continuing to require pulses from the meters. Conversely, a number of respondents indicated that there are no technical circumstances that have not been considered that would justify further flexibility around installation of either smart or advanced meters.

1.67. A number of respondents suggested that care should be taken with the timetable for rollout as many of the difficult cases may require service alterations.

Non-Domestic Sector question 11: Is the proposed approach to rollout (for example in terms of targets and a requirement for an installation code of practice) appropriate for the non-domestic sector?

1.68. Of those who commented, there was a strong view that the smaller non-domestic sector should follow the same approach as the domestic sector. Nearly all respondents who commented agreed that suppliers should take all reasonable steps to ensure that smart metering is fitted. There were mixed views on the introduction of targets, with a small majority in support. Nearly all respondents supported the introduction of an installation code of practice, with broad support for a single code covering the smaller non-domestic and domestic sectors.

#### *Suppliers*

1.69. Nearly all larger suppliers who commented suggested that the smaller non-domestic sector should follow the same principles as the domestic sector, and that suppliers should be required to take all reasonable steps to ensure smart metering is installed.

1.70. Among those who commented, nearly all the larger suppliers disagreed with the proposal for targets. One supplier commented that setting targets may be counterproductive and deflect suppliers from delivering a positive rollout in an efficient and cost effective manner. Another agreed with the benefit of having a

targeted completion date for the full rollout of smart metering; however they felt it should be the supplier's responsibility for setting a specific plan for delivery.

1.71. The larger suppliers who commented nearly all supported the proposal for a single code of practice for smaller non-domestic and domestic customers, while recognising that there will be specific requirements of the smaller non-domestic sector eg access to premises at times that meet business needs. One larger supplier commented that a level of reporting on progress will allow a view to be taken on overall industry progress, but that strict targets would not be an efficient way of measuring progress.

1.72. Among the limited number of smaller suppliers who commented on this question there were mixed views on whether there should be the same approach to the domestic and smaller non-domestic sectors. The very few respondents who commented supported the proposal that suppliers should take all reasonable steps to install smart metering for their smaller non-domestic customers (subject to exceptions).

1.73. Nearly all the smaller suppliers who commented disagreed with the need for targets. One commented that (as with the domestic rollout) smaller suppliers should not have fixed percentage targets but should be allowed to deliver flexibly. Another said that, as the non-domestic sector is already engaged in the rollout of smart metering technology, and has a strong incentive to accelerate this given the benefits it provides to both customers and suppliers, targets may not be required. It was suggested that smaller suppliers are likely to use smaller independent metering providers whose resources may be stretched – aggressive rollout targets will therefore be less achievable. The only smaller supplier who commented, supported the approach to obligate suppliers to take all reasonable endeavours to install smart meters (subject to the flexibility around installations of advanced metering) and the need for an installation code of practice to be introduced in this sector.

#### *Other respondents*

1.74. Of the other respondents to this question, including meter manufacturers and operators, trade associations, industry bodies, network operators, telecommunications companies, and service providers, the majority supported the proposed approach to the non-domestic sector. There was very strong support for the proposal that suppliers should take all reasonable steps to install smart meters. Most respondents who commented also supported the use of targets to support the delivery of the rollout.

1.75. There was very strong support for the introduction of a code of practice in the non-domestic sector from those who commented. There were mixed views on the need for a separate installation code, with a very few respondents suggesting that there should be at least two different codes for the domestic and non-domestic sectors to recognise the commercial constraints and installation differences that exist in both sectors. An equal number suggested a single code would suffice.

**Building a solid foundation for the rollout**

Prospectus question 17: Do you have any comments on our implementation strategy? In particular, do you have any comments on the staged approach, with rollout starting before DCC services are available?  
Implementation Strategy question 3: Do you agree with our proposal for a staged approach to implementation, with the mandated rollout of smart meters starting before the mandated use of DCC for the domestic sector?

1.76. A small overall majority opposed a staged approach to implementation. Opposition was strongest from the larger suppliers. Support was strongest from the meter manufacturers and meter operators.

*Suppliers*

1.77. There was broad opposition from the larger suppliers to mandated rollout starting before DCC services are available. The majority of respondents who opposed the proposals raised concerns around the uncertainty of the arrangements prior to DCC, in particular the absence of the requisite commercial and technical frameworks, and the risks that this could pose for suppliers. Concern was raised that the rollout of high volumes of smart meters in the interim period could result in negative customer experience or media coverage, especially if a meter change is required on change of supplier.

1.78. A large minority of respondents suggested that a two staged approach would increase the overall costs of the programme and slow it down due to the need to switch over communications to DCC, and potentially carry out second visits as a result of technical issues with either the smart meter or the communications. There was concern that disproportionate attention would be given to the interim solution and distract attention from the enduring solution.

1.79. A majority of respondents felt there were essential pre-conditions to any rollout prior to DCC, for example commercial and technical interoperability. A minority of respondents suggested that the period of time before DCC is valuable to use as a window for carrying out a controlled market start up. This would be used to build industry and customer confidence in the technologies and implementation approach with controlled volumes of smart meters being deployed.

1.80. The minority of suppliers who supported the approach felt it important for the rollout to be accelerated to deliver benefits for customers and other stakeholders. They believe the approach allows more time for a more radical industry re-design that delivers maximum overall benefits to suppliers and subsequently customers.

1.81. There were mixed views on the staged approach from the smaller suppliers who responded. Concerns were raised on a number of issues among the small majority of respondents who opposed the proposals. Specifically, customers' difficulty when changing supplier, data security and privacy, additional costs if

suppliers have to replace meters that don't meet the specification and the imposition of de facto standards based on meters rolled out prior to DCC.

1.82. The minority of smaller suppliers who supported the proposals stated that they were already active in this market and didn't want to stop and wait.

#### *Consumer Groups*

1.83. There were mixed views from the small number of consumer groups who commented. One respondent raised the need for a robust consumer protection framework for consumers who already have a smart meter, or will receive one before DCC is in place. Another commented on the need for technical and commercial arrangements to be put in place that ensure that customers do not need to get a new metering system to change supplier, as this would result in additional cost, inconvenience and potentially act as a barrier to switching.

#### *Network Operators*

1.84. Among the limited number of network operators who responded, the majority supported the proposals on staged implementation. They suggested that in addition to enabling the realisation of consumer benefits, a lower volume rollout would accelerate the installation of smart meters and allow for problems to be identified and quantified and solutions developed in advance of mass deployment. One respondent commented that the rollout can also support other trials such as those for the Low Carbon Network Fund.

#### *Meter Manufacturers and Meter Operators*

1.85. There was broad support for the proposals from the majority of meter manufacturers and meter operators who responded. A small number of respondents believed that the proposed approach provides certainty to suppliers who wish to move early. Another suggested that the implementation of smart meters must begin before the establishment of DCC as there are still a number of unresolved issues that could lead to a substantial delay in its implementation.

1.86. It was also suggested that a staged implementation will provide valuable information on installation techniques, training of installers, consumer engagement and communications performance. This was viewed to be especially useful if experiences could be shared between parties.

1.87. The minority of respondents who disagreed with the proposals believed that the staged approach introduces a number of serious risks. For example, the introduction of a significant level of complexity in the period with rollout underway but without DCC in place.

*Other Respondents*

1.88. There were mixed views from the other respondents including trade associations and industry bodies, consultants and service providers and respondents from the telecoms sector.

1.89. The small majority of respondents who opposed the proposals were concerned that initiating a mandate to rollout large numbers of smart meters before DCC was in place would be a highly complex project with a significant level of technical and commercial risk and these are currently insufficiently understood or quantified.

1.90. A small number of respondents suggested that it would be better to initiate a series of trials and pilots to demonstrate that the end-to-end system was working properly, and allow any unexpected problems to be addressed prior to the mass rollout commencing.

1.91. The minority of respondents who explicitly supported the proposals acknowledged the risks with the approach but considered that the approach is a pragmatic one that facilitates early deployments of smart meters and the delivery of early benefits, as long as the risks are well managed. They believed that these could be mitigated by developing interim commercial and technical market arrangements and using proven technology.

1.92. A minority of respondents commented that a staged approach would allow early proving of the physical rollout process, functionality, customer engagement approaches and some aspects of the communications technology prior to when DCC starts providing its services. The lessons learnt in this stage could be used to maximise the efficiency of the mass rollout. Respondents highlighted a range of advantages of adopting a staged approach. These included the earlier commencement of the rollout programme, the quicker delivery of benefits to consumers, the development of DCC independently of time pressures, and the ability to identify and resolve issues and incorporate learning prior to full launch.

1.93. A small number of respondents commented that the proposed timescales may not allow sufficient time to build and test industry systems and processes, or that technologies may not be properly implemented and tested leading to a risk of recall and adverse coverage. The risk of inadequate end-to-end security and data privacy arrangements was raised as a concern.

Regulatory and Commercial Framework question 9: What is needed to help ensure commercial interoperability?

1.94. This was expressed as an open question and a broad range of respondents identified a variety of approaches to achieve commercial interoperability, as discussed below. The largest single group of respondents to this question were consultants and service providers to the energy sector.



1.95. A large minority of responses identified the need for agreed technical standards, as this would provide a level of technical interoperability without which commercial interoperability would not be practical. One respondent commented that technical interoperability alone was not sufficient and that functional interoperability (defined as common supplier process interfaces) and practical asset exchange (so that security and privacy are not compromised on transfer of meter) must also be achieved. A telecommunications service provider commented that technical interoperability could be achieved with non-interoperable meters through the use of an intelligent communications hub running meter specific software.

1.96. Respondents identified a range of commercial issues, including:

- asset charging models, because some asset providers include installation costs within the asset rent and others require installation charges to be paid on installation
- common or consistent contract terms, to avoid the need for all suppliers to negotiate an ad hoc network of peer-to-peer contracts
- support for novation, so that the gaining supplier can adopt communications or other services on the same terms and hence ensure fairness
- fully transferable warranties, to reduce the risk to the gaining supplier when adopting a meter or communications module.

### *Suppliers*

1.97. Among the larger suppliers there was strong support for the standardisation in the treatment of asset capital and meter installation costs. It was suggested that industry guidelines, particularly around the amortisation of installation costs, will be an important consideration in developing robust and acceptable commercial arrangements. A minority of the larger suppliers suggested that the commercial interoperability arrangements and obligations on suppliers should be included in the new Smart Energy Code.

1.98. There were mixed views from the limited number of smaller suppliers who commented. A small number of respondents commented on the need for standardised commercial agreements (including a standard approach to charging) between all suppliers to reduce the uncertainty for the meter asset provider in terms of rental income on change of supplier. It was viewed by one respondent that the absence of standard commercial agreements represented a considerable barrier to entry for smaller suppliers.

### *Meter manufacturers, operators and installers*

1.99. Around half of respondents in this group highlighted the need for standardised commercial agreements between parties to underpin commercial interoperability. This would facilitate the transfer of meter rental agreements between suppliers on an open and transparent basis and allow all suppliers to adopt the service on the same terms.

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*Other respondents*

1.100. Other respondents to this question included telecommunications companies, industry bodies, trade associations and network operators. These respondents highlighted the need for early clarity on technical specifications, interim (pre-DCC) governance, and the need for technical and commercial arrangements as key concerns.

1.101. Ensuring technical interoperability was regarded by a minority of respondents as a key element in achieving commercial interoperability, even a precursor for it. The need for a clear set of functional and technical specifications describing the core functionality was considered to be essential.

1.102. Differences in contractual terms and charging methodologies were thought to be the most common cause of failure of commercial interoperability. A small number suggested that the work currently being undertaken by Ofgem in the business market could be extended to the residential rollout in order to achieve commercial interoperability.

1.103. A number of areas were highlighted for consideration in addition to standard installation and rental charges such as maintenance obligations, managing different IHD features, asset tracking and cost recovery.

1.104. A small number of respondents felt that regulating the rates set for the transfer of meters in a competitive market would be inappropriate but a similar number suggested that rental agreements (warranty terms etc) need to be transferable on a fully and openly banded basis (and would ensure the meter owner continues to receive income after change of supplier). A number of suggestions related to recovering asset costs were presented:

- A standard depreciation profile with rules for funding fixed assets
- Novation clauses to avoid the need for all suppliers to negotiate an ad hoc network of peer to peer contracts, and
- No incentives to remove meters early and no disadvantage for suppliers taking on such assets.

1.105. A very small number of respondents also suggested that cost recovery proposals would benefit from further detailed cost benefit analysis.

1.106. The proposed changes to data flows were welcomed by some as a means of keeping track of market participants using assets. Very few explicitly suggested that DCC could play a role in this process to help maintain a competitive market and ensure the service provider continues to be paid when the customer changes supplier.

1.107. On governance a very small number suggested that it may be appropriate to form an interim governance entity responsible for ensuring of the approval of interim contracts agreed between energy suppliers and communications services providers.

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The early operation of the Smart Energy Code was suggested as a key enabler for interoperability and the resolution of issues between suppliers, and to ensure compliance with new arrangements once agreed.

1.108. Respondents noted that regulatory oversight will be required, regardless which of the many interim options is selected, in order to endure that there is fair and equitable access. A small number of respondents felt that current arrangements are "not fit for purpose" for some parts of the market and not sufficiently wide in scope.

1.109. One respondent stated that all parties involved should be required to both offer competitive services to all suppliers and to make the necessary information available to allow a supplier and/or their agent to have reasonable access to the metering to allow them to service a consumer. This was to ensure suppliers had fair access to all parts of the market.

1.110. A small number of responses called for capabilities to enable asset owners to track which supplier to charge for the use of their assets, because this would reduce the commercial risk to asset owners and hence result in lower rents.

Non-Domestic Sector question 8: How can interoperability best be secured in the smaller non-domestic sector?

1.111. A small majority of respondents, including the majority of the larger suppliers, advocated that interoperability can best be secured by mandating the use of DCC where a compliant smart metering system is installed. A minority of respondents stated that common technical or data standards would improve interoperability as this would provide a level of technical interoperability without which commercial interoperability would not be practical. Very few respondents thought that changes to governance arrangements would be required, as they commented that the existing voluntary arrangements do not always work. A small number of respondents felt that there was already sufficient provision for interoperability in this sector.

### *Suppliers*

1.112. Among the larger suppliers, the majority believed that interoperability can be best secured in this sector by mandating the use of DCC where a compliant smart metering system is installed. Respondents, who advocated this view, believed that bespoke arrangements outside DCC would be costly to maintain for the small number of affected customers and may become a barrier to customers changing supplier. One of the remaining larger suppliers commented that interoperability in this sector cannot readily be secured, however they did not view this as a large problem. Another suggested that the ability for DCC to be able to offer data and communications services for both advanced and smart meters, at the request of a supplier, will significantly support interoperability.

1.113. There were mixed views from the smaller suppliers who commented. One supported the mandated use of DCC on the basis that any other solution would add cost and complexity. Another advocated that to make interoperability work it will be necessary to mandate the transfer of communications protocols, passwords etc. between parties on change of agent. One other smaller supplier believed that there is already sufficient provision for interoperability in the smaller non-domestic sector.

*Meter installers and manufacturers*

1.114. There were mixed views from this small group of respondents on how best to secure interoperability in the smaller non-domestic sector. One respondent advocated that the interoperability arrangements could be simplified if smaller non-domestic customers were included in the same framework as domestic customers, subject to necessary exceptions. It was suggested by one respondent that the work currently being undertaken in the larger non-domestic sector around interoperability could be applied to the domestic rollout. Another believed that there are already fit for purpose interoperability arrangements in the smaller non-domestic sector.

*Other groups of respondents*

1.115. Overall there were mixed views on how interoperability could best be secured among this group of respondents, which included consultants and service providers, industry bodies and trade associations.

1.116. A small number of respondents suggested that the use of open and international standards and the establishment of minimum data requirements would be required to achieve technical and commercial interoperability in the smaller non-domestic sector.

1.117. A small number of respondents suggested that supplier and meter vendor interoperability is key to proper working of this market, and this must be resolved before rollout. Another view was that commercial interoperability should be the primary focus and that there needs to be consideration of the potential duplication of processes between dumb (legacy) and new systems. However, it was also suggested that the programme needs to work closely with existing service providers if switching in and out of DCC is to be allowed.

1.118. A small number of respondents suggested that, by not mandating use of DCC, suppliers may need to run separate processes and systems for some customers. This would potentially increase the complexity of the overall solution. In addition it was considered that:

- Ideally, all participants should use DCC to maintain interoperability
- It would be reasonable to allow a number of protocols and transmission techniques but that these must be open and available to all data collection service providers, and

- The variety of bespoke solutions within the advanced metering market may well preclude interoperability in short term and that migration to a common standard should be encouraged.

1.119. There were mixed views for those from the telecoms sector that migrating to DCC should provide interoperability and that the issue can be addressed if WAN interfaces to DCC are compatible. A small number of respondents suggested that independent service providers should be obliged to provide agreed minimum services.

1.120. A very small number of respondents across these groups considered that where DCC is not being used, commercial interoperability is difficult to achieve or can only be achieved by direct contracts between the parties. A few also suggested that making a secure platform an integral part of the interoperability would limit the ability of hackers to modify data.

### **Local planning, coordination and customer prioritisation**

Rollout Strategy question 1: Do you believe that the proposed approach provides the right balance between supplier certainty and flexibility to ensure the successful rollout of smart meters? If not, how should this balance be addressed?

1.121. A small majority of respondents who answered this question felt the market-led approach to planning and coordination in the early stages of rollout provided the right balance between supplier certainty and flexibility. Of those who disagreed, most favoured an area-based approach. Other respondents to this question discussed the staged approach to implementation, focusing particularly on the procurement of interim communications solutions in advance of DCC becoming operational.

#### *Suppliers*

1.122. There was very strong support among larger and smaller suppliers for the market-led approach. They argued that suppliers should have flexibility to manage their rollout costs efficiently and differentiate the products and services they offer to their customers. It was also suggested that our proposed approach would allow suppliers to respond to consumers who request smart meters early and hence are more likely to deliver the benefits sooner. Some of the larger suppliers who responded to this question commented on our proposal to keep the progress of rollout under review. They expressed reservations about introducing measures to facilitate local coordination at a later stage of rollout as this could increase costs. A minority of larger suppliers also called for a controlled market start up, whereby the volume of meter installations would be constrained to ensure the end-to-end system is fully tested before mass rollout begins.

#### *Consumer groups*

1.123. There were mixed views among the consumer groups who responded to this question on our proposed approach to rollout. Half supported a market-led approach

in the early stages. It was argued that this would allow those consumers who are most willing to engage with smart metering to receive smart meters first. Of those consumer groups who supported our proposal, one argued that after the early stages an area-based approach should be adopted to avoid 'hard to reach' consumers being left until last and to support consumer engagement.

1.124. Other consumer groups expressed concerns about our proposal. One felt that an area-based approach should be adopted from the start of rollout because this would facilitate the involvement of local organisations who can help provide support and reassurance to vulnerable consumers, especially the elderly. Another consumer group stressed the value of local coordination in supporting consumer engagement as well as reducing costs.

#### *Service providers and respondents from the telecommunications sector*

1.125. Around half of the service providers and telecommunications companies that answered this question expressed support for a market-led approach that would give suppliers appropriate flexibility to plan the rollout. These respondents also made suggestions as to how our proposed approach could be improved. A small number suggested that the programme retain the ability to concentrate installations in a specific area. A minority of respondents who commented on our proposal opposed a market-led approach. It was suggested that this approach could rule out certain communications technologies that require the rollout of a new national infrastructure. Instead they advocated an area-based approach. Around half of service providers and telecommunications companies who responded to this question also commented on the use of interim communications solutions. A small majority felt interim solutions would increase costs and potentially damage the consumer experience.

#### *Other respondents*

1.126. Among other respondents to this question, including network operators, trade associations meter manufacturers and meter operators, there was broad support for a market-led approach. A small number of these respondents noted there may be requirements for coordination in specific instances, for example to overcome technical problems around communications in blocks of flats.

Rollout Strategy question 2: Would the same approach be appropriate for the non-domestic sector as for the domestic sector?

1.127. The majority of respondents felt that the proposal to implement rollout via a market-led approach would be appropriate for both the domestic and non-domestic sectors. However a significant minority of respondents disagreed, suggesting that a bespoke approach should be adopted for the non-domestic sector. Consumer groups did not respond to this question.

*Suppliers*

1.128. The majority of suppliers felt that a market-led approach should be applied across sectors. These respondents took the view that a single strategy would be more efficient in a number of ways. Some felt that costs would be minimised through the adoption of a single approach. Others saw a uniform approach across sectors as important in reducing confusion and complexity.

1.129. Those suppliers who felt that differing approaches should be adopted across sectors cited a variety of reasons for their standpoint. Some stated that the implementation of advanced metering in the non-domestic sector outside of a uniform rollout strategy had proved successful, and that rollout activity in this sector should continue to take place outside of the programme's remit.

*Other respondents*

1.130. Trade associations, metering companies and other respondents felt that meter switching in the non-domestic sector would require unique handling in order to avoid business disruption where supply is interrupted. Industry bodies felt that non-domestic customers should be handled separately as they would have a particularly significant role to play in developing smart grids, with these customers accounting for a significant proportion of usage.

Rollout Strategy question 3: Is there a case for special arrangements for smaller suppliers?

1.131. The majority of respondents took the view that special arrangements should not be made for smaller suppliers when considering rollout approaches. However, a number of respondents from different groups felt that it might be appropriate for special arrangements to be put in place. Recognising the respective market shares of suppliers was an underlying point that many contributors viewed as being fundamental for the development of a fair and effective rollout strategy.

*Suppliers*

1.132. Larger suppliers all took the view that special arrangements were not needed. However the majority of smaller suppliers took the opposite view. Smaller suppliers felt that special arrangements would be needed as they would otherwise struggle to compete with larger suppliers for the procurement of meter installation and related services.

*Consumer groups*

1.133. Consumer groups did not generally see the need for special arrangements. One consumer group felt that such arrangements might be needed but stressed the

importance of maintaining consumer protections and a minimum level of customer service under any rollout model. Other respondents

1.134. Views from other respondents were mixed, with a broad range of reasons given both for and against introducing special arrangements. Those respondents who did not support the introduction of special arrangements questioned the fairness of differentiating between smaller and larger suppliers. The need to avoid confusion and complexity was also cited as a reason for introducing uniform arrangements by some industry bodies and trade associations.

1.135. Some of those who felt that special arrangements were needed echoed the concerns of some smaller suppliers, believing that smaller suppliers would struggle to compete with larger suppliers for the procurement of meter installation and related services. This concern was raised by representatives from metering companies, trade associations and other respondents. It is assumed that these respondents felt that any special arrangements should be designed to compensate for a competitive disadvantage that might be faced by smaller suppliers.

Rollout Strategy question 10: Do you have any evidence to show that there are benefits or challenges in prioritising particular consumer groups or meter types?

1.136. A majority of respondents to this question did not advocate prioritisation of a particular consumer group or meter type in the early stages of rollout. Of those who did support some form of prioritisation, it was most often suggest that there could be benefits in prioritising prepayment customers.

#### *Suppliers*

1.137. Larger suppliers were broadly opposed to prioritisation. They felt that this could be inefficient and increase the costs of rollout. They also argued that some groups may be reluctant to be prioritised. Those larger suppliers who commented on prioritisation of prepayment customers suggested that it was important first to ensure the technical solution was operating correctly. One larger supplier did advocate prioritisation of radio teleswitch meters, on the grounds that the RTS may be decommissioned before completion of rollout. Among the limited number of smaller suppliers who commented on this question there were reservations about requiring suppliers to prioritise particular customers or meter types.

#### *Consumer groups*

1.138. Consumer groups discussed in detail the benefits and challenges of prioritising a number of specific customer types. On balance, they broadly agreed with our proposal not to prioritise any particular customers in the early stages of rollout, though one group stressed that this should be kept under review. Reasons included the potential increase in rollout costs, which would be passed onto consumers, and the risk that prioritisation of particular customer groups could give rise to a stigma associated with smart metering.



1.139. With regard to specific customer segments, consumer groups felt that vulnerable consumers, including the elderly, may not have the additional support they require in the early stages of rollout and could be least able to cope with technological difficulties that arise. Consumer groups broadly opposed the prioritisation of the fuel poor on the grounds that these groups may least be able to benefit from smart metering by changing their consumption and might be harder to identify. However, one respondent suggested there could be benefit in prioritising installations where they align with existing fuel poverty and energy efficiency programmes, such as Warm Front. One consumer group opposed prioritisation of prepayment consumers, while another recommended that this group is prioritised provided certain conditions are met. One consumer group also felt that while there may be a commercial incentive to prioritise radio teleswitch customers, this would need to be carefully managed.

#### *Other respondents*

1.140. There were a range of views among other respondents who commented on this question, including trade associations, meter operators and meter manufacturers, telecommunications companies and service providers. Among these respondents, the majority did not advocate prioritisation of any particular customer groups or meter types. These respondents felt that prioritisation might add to the costs of rollout and impact settlement processes. A small number of respondents from among those service providers, telecommunications companies and meter manufacturers who commented did advocate prioritisation of particular customer groups or meter types. In particular there was support for prioritisation of prepayment customers, who it was felt would benefit from a greater choice of payment methods, new build properties and dual fuel consumers.

### **Obligations on suppliers to provide an in-home display**

Prospectus question 1: Do you have any comments on the proposed minimum functional requirements and arrangements for provision of the in-home display device?

1.141. Respondents to this question included consumer groups, industry bodies, telecommunications companies, suppliers, network operators and meter manufacturers, installers and operators. Overall, there were mixed views on the proposed minimum functional requirements for the IHD. A minority of respondents also commented on the proposed arrangements for the provision of an IHD.

#### *Consumer groups and those classified as 'other respondents'*

1.142. There was strong support from these groups, combined, for further functional requirements for the IHD such as prepayment specific data items and functions (eg keypads). Some respondents made suggestions on ambient feedback in terms of the need to carefully define thresholds to ensure consistency of feedback as well as noting that some forms of feedback (such as red lights) could alarm some groups of

consumers. Others expressed concerns regarding the interoperability of IHDs. There was some interest in the IHD being able to support water metering services.

*Industry bodies and trade associations*

1.143. These groups, combined, expressed strong support for the functional requirements. However, several sought flexibility in the requirements which they felt would lead to innovation and hence an enhanced consumer experience - better meeting their different needs and delivering energy saving benefits.

*Respondents from the telecoms sector*

1.144. There was strong agreement from this group for the proposed functional requirements for the IHD. The most commonly made suggestions related to messaging and that other forms of interface such as mobile phones, computers and digital TV can also provide feedback.

*Other respondents*

1.145. The views expressed by many groups were similar and are aggregated here. This includes the views of meter manufacturers, installers or operators, network operators, suppliers and consultants or service providers.

1.146. There were mixed views as to whether the proposed functional requirements were appropriate. While some respondents felt the requirements were sufficient, others argued they were too prescriptive or lacking in key areas. The most common concerns related to the accuracy of the information displayed and the implications of that information being indicative only. Generally respondents reported that carbon dioxide emissions are not understood by consumers but that they welcome ambient feedback (non-numerical presentation of data). Some respondents expressed a desire for consumers to have choices on the functionality of the IHD and real time access to data and for the IHD to support messaging.

1.147. A number of respondents expressed concerns on the cost of including more functionality and the risk of hampering innovation or advocated a desire to provide consumer choice for more functionality (noting that displays must show information using units consumers understand). Several also raised concerns on technical interoperability. Very few respondents noted the need for enhanced security and privacy, particularly in the case of two-way communications and in properties of multiple occupancy.

1.148. A minority of respondents commented on the proposed requirements on suppliers to provide and maintain the IHD. A small number argued either that provision of IHDs should not be mandated or felt this should be optional. These respondents included some smaller suppliers and service providers. It was suggested that some consumers may not interact with the IHD and that there are other means of accessing consumption data stored on the meter. Other respondents either

expressed support for our proposals because of the important role the IHD can play in helping to change consumption patterns, or requested further clarity, especially around the arrangements on change of supplier or tenancy.

Prospectus question 8: Do you have any comments on the proposals that energy suppliers should be responsible for purchasing, installing and, where appropriate, maintaining all customer premises equipment?

1.149. The Prospectus proposed that suppliers will be responsible for the WAN module at the consumer premises, the HAN that enables communications with smart metering equipment within the premises, an IHD and other shared devices. We received a number of responses from a wide range of respondents. In general respondents broadly agreed with suppliers taking responsibility for shared equipment at the premises but were concerned with the proposal that suppliers be responsible for procurement of the WAN module. Some respondents also queried the details of the proposal in the Prospectus and the concept of the 'lead supplier' being responsible for consumer premises equipment.

#### *Consumer groups*

1.150. Consumer groups were broadly supportive of the proposal that suppliers be responsible for purchasing, installing and maintaining consumer premises equipment. Consumer groups also commented on the cost recovery arrangements for equipment in the consumer home and monitoring arrangements for how costs are recovered from consumers. Consumer groups also supported transparency of cost recovery.

#### *Suppliers*

1.151. Suppliers broadly agreed that they should take responsibility for installation and maintenance activities in the consumer premises. However, there was strong opposition to the supplier procuring and owning the WAN module. Suppliers suggested that provision and ownership of the WAN module would be best placed with the communications service providers appointed by DCC. They felt it would be more efficient if one party was responsible for the WAN module and DCC would be the most appropriate party as it will be responsible for its procurement. One supplier also suggested that DCC should be responsible for the HAN and supported arrangements whereby there was only one visit to each site to install equipment.

1.152. A number of suppliers also suggested they were uncomfortable with the concept of a lead supplier being responsible for shared infrastructure in the consumer home and proposed a series of alternative solutions. One smaller supplier suggested that an appropriate level of flexibility be built into arrangements in order to encourage innovation.

1.153. A number of smaller suppliers also highlighted a concern that cost recovery arrangements and obligations on suppliers related to consumer premises equipment could create barriers to entry and restrict smaller suppliers' ability to maintain

competitive tariffs. One supplier suggested that arrangements be put into place that ensured smaller suppliers were assisted in competing.

1.154. One supplier noted that while two suppliers sharing one IHD would present challenges for the industry, there were consumer benefits from sharing an IHD even where there are different suppliers for gas and electricity. There was broad support among suppliers for the proposal that the supplier be responsible for installing the IHD and that there be a one-year obligation to provide an IHD if this were requested by the consumer. Suppliers noted that consumer ownership of the IHD would encourage careful use and management of the equipment by the consumer.

*Consultants / service providers / respondents from the telecommunications sector*

1.155. There were mixed views expressed by respondents. While some respondents saw many benefits from streamlined responsibilities for consumer equipment, many service providers also supported a model where the selected communications service provider (through an obligation on DCC) is responsible for procurement and ownership of the WAN module. It was suggested that this would facilitate more efficient development of the communications solution.

1.156. A number of service providers and consultants also noted that there are alternative approaches to a supplier driven rollout of shared equipment in the consumer premises. For example, one respondent suggested that consumers should be able to purchase additional devices through retail outlets. Respondents also highlighted the range of skills required to install and maintain equipment in the home and the need to maintain interoperability and open standards. Respondents also highlighted that obligations and regulations in this area would have wider implications for more stakeholders than simply suppliers.

1.157. One respondent from the telecoms sector highlighted the IHD as a potential competitive differentiator for suppliers. The respondent suggested suppliers should therefore own and maintain the IHD(s).

*Network operators*

1.158. Network operators were supportive of the proposal in the Prospectus. However, one network operator suggested that proposals regarding the 'lead supplier' could require transfer of asset ownership and maintenance responsibilities and would add significant complexity and uncertainty for asset providers. One network operator noted interdependencies with other energy infrastructure in the consumer premises that is currently the responsibility of network operators (for example, the Emergency Control Valve (ECV)). It was noted that certain activities (for example in relation to the ECV) would need to remain the responsibility of network operators.

*Trade associations and industry bodies*

1.159. There was broad support from trade associations and industry bodies for involving experts in installation and maintenance of consumer premises equipment and that as far as practicable the supplier hub principle should be maintained. However, a number of respondents felt that the ownership model of the WAN module should mirror current arrangements for meter asset provision, with DCC adopting the role of the asset provider.

1.160. Various views were expressed on different processes for maintaining the WAN module, HAN and IHD with interdependencies with the technical specification noted by respondents. For example, the extent of warranty required on the equipment provided and the liabilities associated with failure were discussed. A number of respondents also highlighted interdependencies with the development of the SEC.

*Meter manufacturers and installers*

1.161. There were mixed views among meter manufacturers and meter operators on the Prospectus proposals. While generally supportive of suppliers being responsible for procurement, installation and maintenance of consumer premises equipment some respondents felt that the complexity of what was being proposed should not be underestimated. Other respondents highlighted that a competitive market had developed for meter services in Britain.

*Other respondents*

1.162. A number of respondents noted that the proposed ownership and maintenance arrangements could be complex. The arrangements for cost recovery and how obligations would transfer with change of supplier were cited to support this view. A water service provider suggested that there was a need for commercial interoperability between equipment owned by energy suppliers and water service providers.

In-Home Display question 8: Do you agree with the proposals covering the roles of and obligations on suppliers in relation to the IHD?

1.163. We received a number of responses from a wide range of respondents. There was broad support for the overall proposal related to the IHD. In particular, most respondents considered the one year obligation on suppliers to install and maintain the IHD to be a pragmatic and appropriate solution. However, some respondents raised concerns or queried a particular part of the Prospectus proposal.

*Suppliers*

1.164. There was broad support among suppliers for the proposal that the supplier be responsible for installing the IHD and that there be a one-year obligation to

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provide an IHD if this were requested by the consumer. It was suggested that any arrangements that suppliers may enter into relating to the period beyond one year after installation, be left to competition between suppliers.

1.165. One supplier suggested that the Prospectus was overly vague about ongoing responsibility for the IHD. Another suggested that initial IHD provision should only be provided where the consumer positively requested a device as part of their smart meter installation. A number of suppliers felt that the Prospectus proposal was overly prescriptive or failed to recognise that there were alternative solutions of providing consumption data to consumers.

1.166. One supplier felt it should be left to individual suppliers to determine what their approach is regarding the 12 month customer support/provision issue outlined in the Prospectus. A number of suppliers also highlighted interdependencies with existing regulation, for example WEEE and Waste Battery & Accumulator Regulations and where the IHD is being used as a primary interface for the meter for PAYG.

#### *Network operators*

1.167. The two network operators who responded to this question supported the proposal for IHD installation and maintenance. One network operator highlighted the role of the IHD in consumer engagement with energy consumption.

#### *Consultants / service providers / telecoms providers*

1.168. Service providers and consultants expressed broad support for the policy that the supplier provides the basic IHD with the installation of the smart meter. However, a number of service providers noted that careful terms and conditions would be required around replacement of the IHD to protect suppliers. One service provider raised an additional suggestion that would allow for the consumer to request an enhanced IHD or home energy management solution from the energy supplier in place of the basic IHD and get a credit against the cost of the standard IHD.

1.169. A number of respondents noted that in the case of pre-payment, the ownership of the IHD might be less clear in order to maintain security requirements and data integrity. One respondent raised a query of how IHD ownership would be handled in the event that the customer moved from the premise. Other respondents highlighted the need for clear principles on how IHD roles and responsibilities would be handled.

#### *Trade associations*

1.170. Trade associations were generally satisfied with the arrangements proposed in the Prospectus but suggested that further detail of how obligations would work in practice (for example in a situation such as change of tenancy or consumer churn) was necessary. Energy retailers suggested that to ease the process for customers a

clear label could be placed on the back of an IHD indicating who is responsible for the IHD, thus clarifying who the customer should contact in the event of a fault. One trade association noted that the proposal to allow the obligation on suppliers for the provision of IHDs to lapse after one year strengthened the case for ensuring that meter data was openly available to other devices of the consumer's choice.

#### *Consumer groups and other respondents*

1.171. There were mixed views expressed by consumer groups. One consumer group broadly supported the proposal in the Prospectus noting that it would be inappropriate to give suppliers an enduring obligation to maintain and replace IHDs in perpetuity.

1.172. In contrast, another consumer group suggested that the obligation should be enduring, with customers who do not take up the offer of an IHD during the installation visit able to request one at any stage, without any direct cost. The same consumer group suggested that consumers should be regularly reminded of this right by the supplier. With regards to pre-payment, the same consumer group suggested that if a customer who does not already have an IHD moves to prepay, all suppliers should provide them with a new IHD free of charge.

1.173. Another respondent suggested that the programme should not preclude the acquisition and addition of enhanced IHDs to the HAN by the consumer, so long as those produced comply with the technical requirements of the programme. One meter manufacturer suggested that a review be held once a full set of IHD use cases had been defined and agreed.

### **Consumer experience of the rollout**

Prospectus question 3: Do you have any comments on the proposed approach to ensuring customers have a positive experience of the smart meter rollout (including the required code of practice on installation and preventing unwelcome sales activity and upfront charging)?

1.174. A significant number of responses were received to this question, from a wide range of respondents. The most frequently mentioned issues in relation to a positive experience were, the need for a code of practice, the need for successful consumer engagement, the need to ensure convenience for customers during the installation visit, and support for a ban on upfront charging.

#### *Consumer groups*

1.175. Of the few consumer groups that did make particular reference to this question, one felt the code of practice and exclusion of unwelcome sales activity to be particularly important for a positive experience of the rollout. Another emphasised the importance of minimising costs for consumers, and ensuring the support needs of late adopters are met. Banning upfront charging was also mentioned. Other areas of

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importance mentioned included appropriate information provision for consumers, extra protections for the vulnerable, effective resolution of problems with existing gas appliances identified during installation, and measures put in place to limit the risks of bogus callers and distraction burglary.

### *Suppliers*

1.176. Almost all suppliers who responded to the consultation answered this question. Half of these explicitly noted their support for a code of practice. One supplier objected on the basis that they felt that normal market mechanisms would resolve many of the issues. A small number also explicitly noted support for the code to be developed by suppliers. Respondents also highlighted that consumer groups and Ofgem should be engaged in development.

1.177. A majority of suppliers who answered this question also commented on sales and marketing. Of these, half noted support for limits on unwelcome sales and marketing. Only one supplier felt that there would be no need for such limits as a result of adequate existing protections, and one smaller supplier felt that there should be a ban on all sales activity.

1.178. Of the small number of suppliers who commented on upfront charging in this question, there were mixed views. A smaller supplier supported upfront charging while larger suppliers opposed it.

### *Other respondents*

1.179. Other respondents included meter installers, manufacturers and operators, network operators, service providers, and respondents from the telecoms sector among others. A large minority answering this question explicitly supported a code of practice. Only one objected, suggesting that existing codes should be extended rather than creating a new code.

1.180. Of the large minority who commented on sales and marketing in this question, there was strong support for limits on unwelcome sales and marketing. Only one respondent objected to having any limits on the basis that they felt them to be unnecessary given the time pressures for installers. A small number, including consultants and telecoms providers, supported a full ban on sales.

1.181. Of those who commented on upfront charging, there was very strong support for a ban. Of all other comments made, successful consumer engagement was the most commonly mentioned area of importance for a positive experience among customers. Successful consumer engagement was felt to be important to manage customer expectations of the rollout, and to ensure that customers would be able to understand and interact with the information from their smart meters to achieve benefits. Appropriate information provision, and convenience for consumers were the other most frequently mentioned factors. A small majority of those who felt convenience for consumers to be important asked that installation be completed in the minimum number of visits/a single visit.

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**Protecting consumers**

Consumer Protection question 1: Do you have any views on our proposed approach for addressing potential tariff confusion? What specific steps can be taken to safeguard the consumer from tariff confusion while maintaining the benefit of tariff choices?

1.182. In general and with the clear exception of suppliers, respondents felt that more could be done to address potential tariff confusion. Several contributors made specific recommendations for future action.

*Consumer groups*

1.183. The majority of consumer groups felt that more could be done, believing that too many tariffs may be confusing customers. However some of these groups also saw a value in the introduction of time-of-use tariffs once the smart metering system has become established. On the steps that could be taken to safeguard the consumer from tariff confusion, these groups repeatedly recommended the provision of clearer and more useful information by suppliers to their customers. With this in mind, one respondent suggested that suppliers should insert a summary box on bills setting out the key features of the tariff being used.

*Suppliers*

1.184. Suppliers were strongly of the view that the existing measures are sufficient.

*Other respondents*

1.185. There was a broad consensus among other respondents that more protection is needed against misselling and regulations on the nature of Time of Use tariffs. Some suggested that measures are needed to ensure customers have access to their own data to inform switching decisions. A small number also considered that there should be specific measures to restrict the range of tariffs that could be offered. Respondents holding this view recognised that this approach might only be needed in the short term while customers familiarised themselves with available tariffs.

1.186. Others based suggestions on measures in place in the financial services market such as compensation for misselling and the requirement for evidence based tariff recommendations using a standard formula and approach. Some felt Ofgem should commission market research to understand how customers are responding and to evaluate customer understanding of tariff offerings.

Regulatory and Commercial Framework question 12: What evolution do you expect in the development of innovative time-of-use tariffs? Are there any barriers to their introduction that need to be addressed?

1.187. Respondents commenting on the evolution of innovative time-of-use tariffs expressed a broad range of views. Some thought that the market for time-of-use tariffs would emerge imminently while others believed that the market for these tariffs would not emerge for a further decade. Respondents also expressed a range of views on the barriers to the introduction of time-of-use tariffs, with most describing commercial barriers, and a minority also noting technical barriers.

#### Suppliers

1.188. The majority of Suppliers explicitly stated that smart metering will support a wide range of innovative products and tariffs that they might wish to offer customers, such as temporal or dynamic tariffs to deliver demand-side responses to support different generation technologies. However all commented on existing settlement processes as a barrier to evolution of the market. A move to half hourly settlement was seen as being central to realising ToU offers. A very few noted that it may be appropriate to consider the wider impacts for customers who are at the extremes of the homogenous average as some may be negatively affected.

1.189. A minority of respondents explicitly commented on the rate of evolution of the market with an equal split between those who stated that the market was already in existence to those who considered that the market would emerge over the next decade.

#### *Other groups of respondents*

1.190. Respondents identified a number of potential ToU service types:

- Support for customers in demand management, both in general and specifically for managing and charging electric vehicles or micro generation functions such as heat pumps or smart appliances
- 'Weathercall tariffs', and
- Off peak pricing to enable suppliers to build on existing incentives to deliver an efficient network and to limit exposure to Group Correction Factors and to optimise demand control with dynamic or high resolution services, and ancillary services (voltage etc).

1.191. Very diverse views were expressed on the evolution of innovative tariffs. A small number of respondents reported that Time of Use (ToU) tariffs are already or imminently expected to be, in use while a very few considered a 5 to 10 year horizon more likely.

1.192. The majority of respondents appeared to regard the key barriers as commercial or market based rather than technological. The majority of those

identifying commercial issues suggested that the dominant barriers to implementation are the current settlement and half hourly structure.

1.193. Similarly, many considered consumer awareness or understanding of the tariff complexity to be a barrier. Only a minority identified technical issues such as the ability of the meter to aggregate tariffs, IHD limitations, or the need for fast bidirectional communications.

1.194. Network operators identified both technical and commercial barriers. As with other groups, they identified a need to refine and make the settlement process more granular in order to support changes in service offering. Technical issues included the ability to process the large quantities of data and it was suggested that the tariff calculations should all be carried out at the back end (not on the meter) to allow for rapid innovation.

Consumer Protection question 4: Do you agree with our proposed approach to ensuring that the IHD is not used to transmit unwelcome marketing messages?

1.195. There were mixed views from contributors responding to the proposal to regulate in order to ensure that the IHD is not used to transmit unwelcome marketing messages.

#### *Suppliers*

1.196. Suppliers were broadly opposed to the proposed approach, suggesting that the intended measures were excessive.

#### *Consumer groups*

1.197. Consumer groups were clear in stating that they did not wish to see the IHD used to transmit 'unwelcome marketing messages' as they saw them. However one respondent questioned how 'unwelcome' would be defined in this context. Indeed it was clear from a number of responses that 'unwelcome marketing messages' held differing meanings for different people. Some consumer groups saw a value in certain messaging, eg weather alerts in winter to prompt consumers to adjust their heating. These groups also suggested that research should be conducted to learn more about consumer reactions to information received via the IHD.

#### *Other respondents*

1.198. Some metering companies took the same view as suppliers. However industry bodies, network operators and other respondents largely took a differing view, supporting the proposed measures. Of respondents in these groups who put forward specific views on alternative approaches, most recommended allowing the customer to opt in or out of messages sent at the supplier's discretion. A small number suggested that messages should be limited to energy or maintenance issues.

Consumer Protection question 6: Do you consider that existing protections in the licence are sufficient to ensure that consumers are not remotely switched to prepayment mode inappropriately?

1.199. There were mixed views on whether the current stipulation for suppliers to install a prepayment meter only where it is safe and reasonably practicable for the customer to use, is sufficient. While some respondents simply endorsed the current approach, the majority of respondents offered views on supplementary measures that could be adopted.

#### *Consumer groups*

1.200. Suggestions from consumer groups for supplementary measures included requiring a site visit to assess vulnerability. Another suggestion was that the term 'safe and reasonably practicable' should be prescribed in the context of switching to avoid differing interpretations being made. Consumer groups also advocated the provision of guidance in various forms by suppliers to their customers on prepayment.

#### *Suppliers*

1.201. All suppliers who responded thought that the existing provisions were adequate.

#### *Other respondents*

1.202. Other respondents felt that there would need to be a form of customer authorisation process to ensure that the correct premise had been switched. The idea of suppliers providing a 24 hour helpline was also put forward by metering companies.

1.203. A number of parallel issues were also highlighted. These included concerns from metering companies that remote switching to prepayment mode may cause disruption to generation for customers with micro-generation capability accessing the Feed-in Tariff.

Consumer Protection question 8: What notification should suppliers be required to provide before switching a customer to prepayment mode?

1.204. Most respondents considered the current statutory seven day notice period sufficient for suppliers to notify customers of the intention to switch them to prepayment mode. However, some felt that this was only sufficient where suppliers continued to take a number of steps to engage with the customer about their debt before formal notification. A number of respondents expanded their answers beyond the scope of the question, tabling suggestions for supplementary measures.

*Consumer groups*

1.205. Consumer groups emphasised the need for suppliers to fully inform customers through multiple communication channels both before and after switching to ensure that customers are fully informed. These groups also suggested that an acknowledgement of the switching should be sent through the IHD or via telephone so that customers know when the switch has been completed. One respondent felt that a letter of acknowledgement should be sent. It was also suggested that site visits should be carried out for vulnerable customers given the likely circumstances of this customer segment.

*Suppliers*

1.206. Suppliers were strongly of the view that the existing provisions suffice although additional suggestions were put forward. Some thought that the notification could include information about using the meter and IHD in prepayment mode. Suppliers also suggested that an industry guide could be produced. The setup of a helpline specifically for prepayment customers was also suggested.

*Other respondents*

1.207. Similar ideas to those put forward by consumer groups and suppliers were suggested by a number of other respondents who advocated the introduction of supplementary measures.

1.208. Contact by phone or bi-lateral correspondence was recommended by trade associations to allow customers to confirm their understanding of the impending switch. Industry bodies recommended that instructions on how to operate the meter should be provided. Telecommunications companies reflected the views of some consumer groups, recommending that mandatory site visits should be carried out prior to switching vulnerable customers to account for the likely circumstances experienced by this customer segment.

Consumer Protection question 9: Do you believe that suppliers should be required to provide emergency credit and "friendly credit" periods to prepayment customers or whether, as now, this can be left to suppliers?

1.209. The majority of respondents considered that the provision of emergency and friendly credit by suppliers to their customers should not be mandated. Respondents also suggested various measures to ensure that the current provision continues to suffice.

*Consumer groups*

1.210. Consumer groups considered that suppliers should have a duty of care to customers who regularly self disconnect. One consumer group that recommended

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mandating the provision of emergency and friendly credit services focused on the need to protect vulnerable customers using prepayment meters. This group also raised concerns about customers who might not have swift access to payment facilities. Consumer groups also recommended that consumers would benefit from further information clearly stating that customers utilising emergency and friendly credit services would need to repay the credit they had used.

### *Suppliers*

1.211. Suppliers all agreed that the provision of these services should not be mandated. Several suppliers pointed out that these services were already offered on a voluntary basis and that as a result, mandating their provision was not needed.

### *Other respondents*

1.212. Among telecommunications companies it was felt that emergency and friendly credit services should only be provided to vulnerable customers. Among metering companies it was recommended that suppliers should adopt a common approach to the provision of these services, while some trade associations recommended the use of consumer feedback to review the success of the current mechanism in the future. Some industry bodies went against the general consensus, believing that the services should be mandated to ensure that vulnerable customers who accidentally switched to prepayment were protected.

Consumer Protection question 11: Is the obligation which Ofgem is proposing to introduce on suppliers to take all reasonable steps to check whether the customer is vulnerable ahead of disconnection sufficient? If not, what else is needed?

1.213. There were mixed views from respondents on whether the obligation proposed by Ofgem would be sufficient.

### *Consumer groups*

1.214. Recommendations from consumer groups centred on how the terms 'vulnerable' and 'all reasonable steps' should be applied when identifying vulnerable customers. Some felt that the terms should be defined to avoid confusion and differing interpretations. One respondent recommended parameters for defining vulnerability in this context.

1.215. Some consumer groups considered that Ofgem's previous guidance on what constitutes 'reasonable steps' in checking the status of customers and occupants prior to disconnection should be made mandatory. One group went further by suggesting that the onus should be placed on suppliers to prove that a customer is not vulnerable, and a site visit was recommended where no contact had been made with the customer to identify vulnerability. These steps were recommended to increase the likelihood of identifying a vulnerable customer prior to disconnection.

*Suppliers*

1.216. There was a broad consensus among suppliers that the proposed measures would suffice.

*Other respondents*

1.217. The majority of other respondents backed the proposed approach, although support was again noted for the definition of terminology used in this context. However, one government body felt that consideration should be given to whether a site visit should always be made prior to disconnection to ensure that disconnection represents an appropriate course of action.

Consumer Protection question 12: What notification should suppliers be required to provide before disconnecting a customer?

1.218. Respondents generally felt that the current requirement to provide seven days notice prior to disconnection was sufficient. However, respondents did suggest measures for strengthening the existing process.

*Consumer groups*

1.219. Consumer groups suggested that suppliers should contact customers via a range of channels to ensure that customers are aware of a pending disconnection. They were also clear that suppliers should not rely purely on the IHD to inform customers of disconnection due to the risk of IHD messages not being accessed. These groups also stated that there should be a site visit by suppliers if no contact had been made with a customer prior to disconnection. While supporting the current approach, one group advocated that the existing process should be kept under review to monitor its effectiveness.

*Suppliers*

1.220. Suppliers consistently felt that the current requirements around notification were adequate, believing that a seven day notice period provided customers with sufficient time to react to the disconnection notice.

*Other respondents*

1.221. Other respondents also advocated the provision of information from suppliers via multiple communication channels. Among industry bodies it was suggested that suppliers should provide information concerning the disconnection process, the options available to customers and any safety issues concerning disconnection. The provision of this information was advocated to ensure that customers fully understand the disconnection process.

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Consumer Protection question 13: Do you have any views on the acceptability of new approaches to partial disconnection and how they might be used as an incentive to pay bills?

1.222. The majority of respondents to this question took the view that new approaches to partial disconnection could be acceptable under certain conditions. Respondents also provided thoughts on how these new approaches could be used as an incentive to pay bills.

#### *Consumer groups*

1.223. Consumer groups indicated that while load limiting might prove to be a useful tool in helping consumers manage their energy usage, more research would be needed to fully understand its application in practice. These groups also recommended the provision of clear information to customers by suppliers on the operation of load limiting.

1.224. Reflecting the general note of caution indicated by consumer groups, one respondent suggested that load limiting would not be suitable for vulnerable customers. This respondent also advocated the use of minimum supply thresholds to provide certainty around the minimum volume of energy supply that a customer would receive.

#### *Suppliers*

1.225. As with consumer groups, suppliers also felt that the new approaches to partial disconnection could be beneficial but expressed caution. These respondents were concerned that load limiting would not be suitable for gas, given performance issues with certain appliances receiving a low or intermittent gas supply. Suppliers were also concerned that load limiting might act as a disincentive to pay because customers would continue to receive the basic electricity or gas supply they needed.

#### *Other respondents*

1.226. Other respondents echoed the cautionary welcome of the new measures. Industry bodies raised a number of questions around how load limiting would work in practice, questioning for example how seasonal differences would be accounted for when load limiting was used. However as a whole this group of respondents felt that load limiting could act as a useful incentive to pay. Similar concerns raised by suppliers specifically around load limiting for gas supply were also raised by industry bodies.

1.227. Metering companies and a government body that commented also saw value in the new approaches, with the government body again believing that load limiting might act as an incentive to pay.



1.228. However industry bodies echoed concerns put forward by suppliers regarding the performance of appliances where load limiting based on power supply was used. Trade associations went against the general trend, believing that the new approaches may not add value.

Consumer Protection question 14: Do you agree with our approach for addressing issues related to remote disconnection and switching to prepayment?

Consumer Protection question 15: Have we identified the full range of consumer protection issues associated with the capability to conduct remote disconnection or switching from credit to prepayment terms? If not, please identify any additional such issues.

Prospectus question 4: Have we identified the full range of consumer protection issues related to remote disconnection and switching to prepayment?

1.229. The majority of respondents supported the approaches set out in the Prospectus for dealing with consumer protection issues connected to remote disconnection and switching. However, respondents also raised a broad range of supplementary points that they recommended for further consideration. In particular, away from those issues raised in response to other related questions, safety and security issues were repeatedly highlighted. As a result, the summary below focuses on issues not featured in other responses and has been summarised according to subject matter.

#### *Safety*

1.230. Concern was noted from across respondent groups on the safety of remote disconnection and reconnection. Industry bodies, metering companies and other respondents suggested that a site visit would be required, particularly for gas disconnection and reconnection. These respondents felt that only suppliers, or customers who had received appropriate training, should be able to perform disconnection and reconnection.

1.231. Consumer groups, suppliers, metering companies and other respondents were concerned about the risk of electric shocks and uncontrolled gas release during remote disconnection. These groups advocated the use of a button on either the smart meter or the IHD to ensure that the customer is physically present at the premises to conduct reconnection.

#### *Security*

1.232. Consumer groups and other respondents raised concerns around the risks of cyber attack and abuse in an environment where remote disconnection is feasible. These respondents recommended the implementation of a tamper alarm mechanism on smart metering equipment to detect abuse. Other respondents also advocated the use of digital signatures to verify that the appropriate person had carried out critical commands such as disconnection and reconnection.

*Other issues*

1.233. Industry bodies and metering companies commented on the need for flexibility when dealing with remote disconnection and switching issues. It was felt among these respondents that processes would have to adapt as the smart metering framework becomes better understood. These respondents also stated that the approach to dealing with remote disconnection and switching would need to evolve in step with technological advances. Smaller suppliers were prominent among those respondents who felt that the use of load limiting as a precursor to disconnection should be explored further.

Consumer Protection question 2: Do you agree with our proposed approach for addressing unwelcome sales activities during visits for meter installation?  
Consumer Protection question 3: What do you consider as acceptable and unacceptable uses of the installation visit and why?

1.234. Among the wide range of respondents who commented on means of addressing unwelcome sales activities during installation, there were mixed views. A small majority supported the proposal to limit unwelcome sales activity. A large minority supported a full ban on sales however, with a small number of respondents supporting a full ban on marketing as well. Of those who commented on the appropriate nature of a limit, the most commonly suggested limit was a requirement to obtain consent for sales/marketing (although there were mixed views on whether this should be opt in or opt out). A large minority of respondents asked that the code of practice include measures for addressing unwelcome sales activities.

1.235. Regarding acceptable and unacceptable uses of the visit, the most commonly opposed activity was cross selling during the visit. Activities which respondents tended to support included updating the priority services register, informing customers of schemes and grants, and providing some energy efficiency information (although not necessarily products) during the visit. A minority of respondents asked that the code of practice define which activities would be acceptable and unacceptable.

*Consumer groups*

1.236. There was a strong response to this question among consumer groups. Most were in support of a full ban on sales, and a minority were also in support of a full ban on marketing. The draft code of practice submitted by Consumer Focus on behalf of a number of consumer groups included a ban on sales and unwanted marketing. The reasons given for banning sales/marketing included the belief that consent would not be a strong enough limit for vulnerable customers who feel unable to refuse, the suggestion that any protections would be open to abuse, the belief that a ban on sales would help to maintain a positive experience of the visit for the consumer, and the belief that allowing sales would give an unfair competitive advantage to suppliers in the energy services market.

1.237. In terms of the form of limit favoured among those that did not support a full ban on sales and marketing, consent was the most commonly mentioned, with one group favouring an opt out mechanism. Among other comments, the importance of signposting customers to independent advice/organisations was discussed. The draft code of practice submitted by consumer focus on behalf of a range of consumer groups, requested among other things, that consumers be signposted to independent advice and comparison services, that staff not be incentivised to sell services in their remuneration packages, and that there be no signing of contracts during the visit or for a period after.

1.238. In terms of those activities that were considered unacceptable uses of the installation visit, one consumer group explicitly mentioned that the visit should not be used to put customers onto new tariffs or to cross sell fuels. In terms of permissible sales and marketing activities, there was some discussion of energy efficiency products and services. A majority of consumer groups felt that, subject to caveats, it would be appropriate for some information to be provided about energy efficiency measures. Some groups asked that any information be in the form of, or accompanied by, independent advice. One consumer group asked that consent be gained from consumers first, and another suggested that only those solutions which would reduce energy consumption or cost be discussed. The draft code of practice submitted by Consumer Focus included some further proposals, including a ban on offering new tariffs unless offered to a vulnerable household with a lowest price guarantee as part of an enhanced service.

### *Suppliers*

1.239. Most larger suppliers expressed support that consumers should not be subject to unwelcome sales activities, on the basis that such activities may undermine customer confidence and support. The range of views regarding how this problem should be approached however were quite wide. Some suggested that existing protections would be enough, others talked about the need to be able to respond to customer request. One larger supplier opposed the signing of contracts during the visit, and another felt that customers should not be able to sign contracts relating to electricity or gas products.

1.240. The majority of smaller suppliers who answered this question were in favour of a full ban on sales. Reasons mentioned for this included a wish to ensure customers have a positive experience of the visit. Additionally, there was a concern over the competitive advantage large suppliers would have over small suppliers, as a result of larger suppliers having in house metering teams. The most commonly suggested limit was a requirement for prior consent.

1.241. Of those who commented on acceptable and unacceptable activities during the visit, a minority objected to cross selling of fuels, although this was the most commonly mentioned objection. There were mixed views over tariff information and switching. Some suppliers objected to all forms of tariff information or switching, another objected to any discussion resulting in a tariff switch to a different payment type. One supplier supported the provision of information on moves to more

appropriate tariffs eg allowing savings. In terms of acceptable activities, a large minority supported the selling of energy efficiency products during the installation.

*Respondents from the telecoms sector, consultants and service providers and trade associations*

1.242. Of the respondents within these groups, while a majority supported the proposed limit on unwelcome sales activity, a minority opposed sales and marketing. The reasons for this opposition included the belief that it would hinder the efficiency of the rollout, that suppliers should not be able to promote products in related competitive markets. For those who were in favour of limits rather than a full ban, prior consent was most commonly mentioned. Equally commonly mentioned was the request that sales only be made in a subsequent visit necessary to fulfil a specific consumer driven order.

1.243. Of those who commented on acceptable and unacceptable uses of the visit, cross selling was the most commonly mentioned unacceptable use. Some respondents were concerned over the effect this would have on customer perceptions/success of the rollout. Acceptable uses included informing customers of schemes and grants they would be eligible for and some discussion of energy saving methods, although not necessarily products.

*Other respondents*

1.244. Other respondents included meter installers, operators and manufacturers, industry bodies and network operators. Among these respondents, there was broad support for the proposed limits on unwelcome sales and marketing. A minority of respondents also supported a ban on sales with a small number requesting a ban on marketing as well. Some of the reasons stated for wanting a full ban on sales/marketing included a concern over how effective any limits would be, and concerns over what they saw as industry's record of misselling.

1.245. Among those who discussed acceptable and unacceptable uses of the installation visit, a minority supported the provision of energy efficiency advice during the visit to help customers save energy and money on bills.

Consumer Protection question 17: Do you have any comments on our proposals to prevent upfront charging for the basic model of smart meters and IHDs?

1.246. A wide range of respondents were in strong support of a ban on upfront charging for mandated smart meters and IHDs, most commonly due to concerns over negative reactions from customers and the anticipated impact on rollout.

*Consumer groups*

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1.247. Of the consumer groups who commented on upfront charging, all agreed with preventing it. A majority felt that allowing upfront charging would deter customers, having a detrimental effect of the progress of the rollout. A small number of consumer groups also discussed the expectation expressed in the Consumer Protection document, that suppliers would recover costs by recouping them over the life of the meter from all customers from the start of the rollout. These consumer groups supported cost recovery from the total customer base, although one noted that this might mean that late adopters (predicted to be low income and vulnerable customers) would be disadvantaged. One group also suggested that costs be recovered on the basis of energy usage, rather than on a household by household basis. Other issues mentioned relating to upfront charging included the requests that costs be minimised, monitored, and made transparent. One consumer group asked that rules on upfront charging have a regulatory underpinning.

#### *Suppliers*

1.248. Of the larger and smaller suppliers that made comments on upfront charging, most supported the ban. Customer dissatisfaction at upfront charging was most commonly cited as the reason for supporting a ban. Of those who withheld support, one felt that suppliers would first need to understand the wider cost recovery arrangements and another noted that they would regard the regulation of upfront charging to be unnecessary in the competitive market. Among smaller suppliers, one asked that it be possible to charge for early installation and out of hours visits.

#### *Respondents from the telecoms sector*

1.249. Among respondents from the telecoms sector who commented, most supported a ban on upfront charging. A majority felt that allowing upfront charging would deter customers, having a detrimental effect of the progress of the rollout. One suggested that while any upfront cost may be a barrier to the consumer accepting the IHD, consumers may benefit from having a choice over upfront charging.

#### *Other respondents*

1.250. Other respondents included meter installers, manufacturers and operators, network operators, consultants and service providers, industry bodies and trade associations. Most respondents were in support of a ban on upfront charging. The majority of those who gave reasons for this felt that a ban would be necessary to ensure support among consumers. One trade association did not support the ban suggesting instead that customers should be able to choose between paying upfront and having a more costly tariff.

### **Promoting consumer engagement**

Rollout Strategy question 4: What is the best way to promote consumer engagement in smart metering? As part of broader efforts, do you believe that a national awareness campaign should be established for smart metering? If so, what do you believe should be its scope and what would be the best way to deliver it?

1.251. Responses to this question were received from a wide range of respondents. Of the small majority who made comments on the framework for promoting consumer engagement, nearly all were in support of a national awareness campaign. Securing customer support was the most commonly mentioned objective for any such campaign. Regarding scope, of those who supported a national awareness campaign, a minority also explicitly mentioned support for local campaigns or individual supplier campaigns in addition to the national campaign. There were mixed views over whether messages should be consistent across demographics or whether messages should be targeted at particular groups. Respondents listed a wide range of possible delivery channels. Along with references to print media and television and radio communication, a significant number of respondents also described the need to use other bodies such as ministries, local authorities, advice agencies and community based groups in disseminating messaging.

#### *Consumer groups*

1.252. Among the consumer groups that offered a recommendation on the framework for promoting consumer engagement, all supported a national awareness campaign of some kind. These groups also discussed the importance of local involvement in any engagement, either through additional local campaigns, or through co-operation and involvement with local bodies. One suggested that local agencies would be in a good position to encourage support for the rollout. Although some consumer groups acknowledged that suppliers would undertake their own marketing campaigns in addition, there was emphasis on the need for some consistency of messaging. One respondent felt this to be important to encourage consumer confidence.

1.253. A number of respondents commented on the topic of targeting, suggesting that communications should target early adopters and those customers for whom rollout is imminent. There were mixed views among respondents on the integration of messaging with other schemes, with some supporting integration of messaging between smart metering and other campaigns such as the Green Deal. Others felt that there should be no integration of messaging on the basis that it could cause confusion.

1.254. Among the few consumer groups who expressed a preference over governance for a campaign, an independent campaign was favoured, and it was explicitly asked that it not be supplier-led. Respondents were concerned that suppliers would not have incentives to deliver behaviour change or wider public

policy benefits, and that a supplier-led campaign could lead to confusion among consumers. In terms of other suggested means of raising engagement, consumer groups generally supported further consideration of area based rollout in order to raise awareness.

### *Suppliers*

1.255. Among the suppliers who made comments on consumer engagement, there was broad support for a national awareness campaign. A range of reasons were given for this, including the increased rate of access to properties and decreased costs such a campaign would be likely to deliver, along with increased consistency of communication and achievement of benefits. A small number of suppliers raised objections, one on the basis that further work would be necessary to establish that such a campaign would represent value for money, and one on the basis that smart meter products have in the past been launched successfully without a campaign. Alongside any national campaign, a number of larger suppliers were in support of individual supplier approaches which would run alongside.

1.256. There were mixed views on governance, some suppliers felt that an independent body or group of stakeholders would be best placed to manage such a campaign, while another supported a government-led campaign. There were mixed views on branding. Some suppliers felt that a common brand should be established, while another felt that national branding may lead to confusion when combined with individual supplier brands.

### *Other respondents*

1.257. Other respondents who commented on the proposed models for consumer engagement included meter installers, manufacturers and operators, consultants and services providers and telecoms companies among others. There was strong support for a national awareness campaign. Among this group a small number made comments on the objectives of any such campaign, with the most commonly mentioned objective being to secure consumer support for smart meters.

1.258. A minority of respondents commented on the possibility of additional supplier or local campaigns. Some felt that it would be appropriate to have campaigns on a local scale as well as on a national scale in order to achieve the appropriate levels of engagement. Others felt that a national campaign should be complemented by supplier campaigns. A minority suggested that additional local or supplier campaigns might cause confusion. Regarding governance, relatively few respondents offered views on who would be best placed to run a national campaign, although among those who did, an independent model was most commonly favoured.

Rollout Strategy question 5: How should a code of practice on providing customer information and support be developed and what mechanisms should be in place for updating it over time?

1.259. A number of responses were received to this question from a wide range of respondents, however there was some ambiguity over whether or not comments referred to an information code of practice specifically, or to an information/installation code of practice in general. A small number of respondents explicitly noted support for a combined installation and information code of practice. Of those who commented on the development of a code, a minority supported suppliers in leading this development. The majority suggested that it be developed collaboratively or led by a group other than suppliers such as a central body, a consumer group, or Ofgem. These respondents felt that it would be important for a wide range of stakeholders to be able to have sufficient input into the code. A large minority supported some monitoring of compliance or procedures over complaint handling. There was relatively little discussion of appropriate governance arrangements, but among those who did express a preference, there were mixed views on whether the code should be self-regulated, or governed through licence obligations.

#### *Consumer Groups*

1.260. Among the consumer groups who commented on this question, the majority supported a combined code of practice for installation and information, with the final consumer group asking for clarity on the reasoning behind having two separate codes. The information requirements described by consumer groups included the provision of accessible and appropriate information on the rollout itself, the installation visit, and effective use of the meter and IHD. Among the other things mentioned was a need for independent information on energy efficiency and on bills.

1.261. Regarding governance, one consumer group explicitly commented on the development of the code, asking that it be based on the draft code compiled by Consumer Focus and other consumer groups, and that regular stakeholder group meetings be held to develop it and discuss any modifications. Of the consumer groups that expressed a preference on the form of governance, licence obligations were supported. One respondent was concerned that competitive pressures would not be sufficient to encourage compliance with a self-regulated code. Another was concerned that past voluntary codes have sometimes been ineffective in delivering protection for consumers.

#### *Suppliers*

1.262. Among suppliers who commented, the majority were generally supportive of a code. One supplier particularly welcomed the requirement for a clearly defined information code of practice. The majority of the small number who talked about development of the code, emphasised the importance of collaboration. A small majority also talked about the importance of having a process for modifying the code where necessary. Of the small number who talked about governance, there was



support for self regulation. Respondents suggested that self regulated codes have worked well in the past.

#### *Other respondents*

1.263. A wide range of other respondents commented on this question, including meter installers, manufacturers and operators, industry bodies and trade associations, networks operators, telecoms companies, and service providers. Among these, most described support for a code, with a very few respondents explicitly supporting a combined installation and information code. Of the respondents who commented on the objectives of such a code, a large minority supported the role of the code in setting minimum standards for suppliers around the installation process.

1.264. There was little discussion of content in response to this question. Of those who commented on appropriate development of the code, there were mixed views. Half of respondents supported fully collaborative development. Among the remaining half, respondents were split over whether suppliers should lead development (with input from other groups), or whether it should be led by some other body such as a central body, Ofgem, Consumer Focus or ESTA. Most of the respondents who commented on development also supported some form of modifications process for the code, often involving monitoring of some kind.

Consumer Protection question 16: What information, advice and support might be provided for vulnerable consumers (eg a dedicated help scheme)? Who should it be provided to?

1.265. Among the wide range of respondents commenting on protections for vulnerable customers, there was strong support for additional protections.

1.266. A majority of respondents identified specialised information needs of vulnerable customers, including the need to ensure that appropriate information is provided in accessible formats. A large minority supported some form of help scheme for vulnerable customers, most of whom asked that it be centralised rather than having a range of help schemes provided by individual suppliers. A large minority also explicitly mentioned the need for local co-ordination in order to effectively meet the needs of vulnerable customers.

#### *Consumer groups*

1.267. Of the consumer groups that commented, all felt additional measures to be necessary for this group. Most supported the idea of a centralised help scheme. Some noted the effectiveness of such a help scheme during the digital switch over, and asked that a similar help scheme be set up for smart metering. Others felt that a help scheme would be particularly important to help vulnerable customers access benefits from smart metering, as well as social assistance and support for the replacement of dangerous appliances. One respondent felt that a help scheme would be the most efficient way to help vulnerable customers.

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1.268. Most consumer groups also described the importance of local co-ordination in identifying and/or communicating with vulnerable customers. Local voluntary agencies were felt to be particularly well trusted for such communication. Respondents described a range of potential forms of assistance that might be valuable to these consumers, including processes to address installation issues and faulty appliances, additional security measures, and advice on tariffs, grants and energy efficiency. Respondents suggested a range of means of identifying vulnerable customers, from using the Government's 'super priority' group, to providing accessible information for all and allowing self-identification.

#### *Suppliers*

1.269. All suppliers who commented on vulnerable customers agreed that additional measures would be necessary for this group. A minority explicitly noted support for a help scheme. A further minority described the possibility of combining help for the vulnerable with that provided through existing schemes such as the Home Heat Helpline. A minority of suppliers described the importance of suppliers co-ordinating with local groups such as local authorities. A range of forms of assistance were described for vulnerable customers including, adequate information provision, information on where to obtain further advice and support, referral to supplier social tariffs, rebates and energy price support schemes, and the presence of a third party at the visit. There were mixed views on whether information should be provided by Ofgem, Consumer groups or suppliers.

#### *Other respondents*

1.270. Other respondents who offered comment on vulnerable customers included meter manufacturers, installers and operators, industry bodies, trade associations and network operators among others. Among these respondents there was strong support for additional protections for vulnerable customers. There were no objections to the provision of additional measures. A minority voiced support for a help scheme to provide support and assistance. A minority of respondents explicitly described the importance of local co-ordination to better facilitate engagement with, and offer support to, vulnerable groups. The range of forms of assistance suggested included specialised devices, appropriate advice and education, and special measures to manage bill payments and limit disconnection.

### **The installation process**

Rollout strategy question 13: Do you agree with our proposal to require suppliers to develop a code of practice around the installation process? Are there any other aspects that should be included in this code of practice?

1.271. A wide range of respondents commented on this question. Generally there was strong support for a code of practice for installation, and of those who commented on the development of this code, most respondents supported the proposal to require suppliers to develop it. A minority reiterated the importance of having sufficient input from other groups in the development. Frequently mentioned

areas of content for an installation code of practice, included information provision around the visit and use of the IHD, and appropriate requirements and processes for the resolution of problems during installation.

#### *Consumer groups*

1.272. We received a strong response from consumer groups to this question. All consumer groups agreed that a code of practice for installation would be necessary. Of the small number of consumer groups who commented on the objectives of a code of practice for installation, consumer protection, standard setting for suppliers around the installation visit, the delivery of customer benefits and promoting a positive experience for customers were seen as objectives of the code. It must also be noted that Consumer Focus developed a draft code of practice for installation, in consultation with other consumer groups. This code of practice supported all four of these objectives. A majority of consumer groups supported the development of the code by suppliers (including small suppliers), although noted the importance of developing it and confirming it with other stakeholders including consumer groups.

1.273. One consumer group asked that Ofgem should set out clear principles for the code's scope and content.

1.274. The draft code of practice, developed with the majority views of a range of consumer groups, contained requirements in a number of areas. In terms of scope, the draft code covered the before, during and after stages of the installation visit, along with changes of tenancy. Consumer groups suggested that the code include guidelines around information provision, appointments, provisions for vulnerable customers, safety checks, the resolution of problems, training, sales and marketing, and procedures to measure the success of rollout among others.

1.275. Regarding governance, all consumer groups who commented asked that the code be governed through licence obligations, such that suppliers be required to comply and be subject to enforcement action where they do not. Monitoring was felt to be an important element of governance, with one consumer group suggesting independent research be carried out into consumer experiences. The draft code of practice also included requirements around monitoring such as agreed measures for monitoring compliance, feedback cards, follow up calls, and dedicated complaint handling and redress systems.

#### *Suppliers*

1.276. There was strong support among the suppliers who responded to this question for a code of practice for installation. Among those in support, one asked that it be built on existing codes and working practices. One supplier felt that there was not sufficient need for a code of practice, but suggested that this could be reviewed at a later stage. Few talked about the objectives of a code, but among those who did, all mentioned the importance of achieving minimum/ consistent standards for installation. Of those who commented on the development of the code, all felt it

should be developed by suppliers, although a number also noted the importance of input from consumer groups and Ofgem.

1.277. A number of suppliers commented on scope. A small majority explicitly asked that the code cover the pre, during and after stages of installation. Suggested content included a process for resolving problems during installation, guidelines on information provision, an appointments process (including the right to cold call to fill resource availability), arrangements for vulnerable customers, and training.

1.278. Few suppliers discussed sales and marketing in reference to this question. However one asked that the code not be overly prescriptive regarding sales and marketing, and that it should not preclude customers from receiving information that might help them manage their energy usage. Among the small number of suppliers who commented on the governance of a code of practice for installation, all asked that it be self regulatory, arguing that this approach had worked well in the past.

#### *Other respondents*

1.279. A wide range of other groups commented on this question, including meter installers, manufacturers and operators, industry bodies and trade associations, networks operators, telecoms companies, and consultants and service providers. Among these other respondents, there was strong support for a code of practice for installation. Setting minimum/consistent standards for installation was the most commonly mentioned objective of any code of practice for installation. Among those respondents who made comments on the development of the code, there was strong support for suppliers to develop it. A minority also explicitly mentioned the importance of involving other groups such as Ofgem, DECC, consumer bodies, meter installers, meter asset providers, and Distribution Network Operators.

1.280. Among those who commented on the content of an installation code of practice, the adequate provision of information for customers was the most commonly mentioned area of importance, including advice about effective use of the meter and IHD, and contact details for any further information or advice. Other commonly mentioned items for inclusion were the testing of equipment during installation to ensure functioning and HAN/WAN connectivity, and effective procedures and communication to ensure efficient resolution of any problems during installation. The importance of installer training was also frequently mentioned, as was the need to minimise the number/length of appointments.

1.281. Among the very few who expressed a preference for a form of governance, there were mixed views. Some respondents supported self-regulation, while another supported underpinning with licence conditions.

Rollout strategy question 12: Do you agree that there is already adequate protection in place dealing with onsite security or are there specific aspects that are not adequately addressed?

1.282. Of the wide range of respondents who answered this question, a majority felt current protections to be inadequate, primarily due to concerns over bogus callers and distraction burglaries.

#### *Consumer groups*

1.283. Among those consumer groups that commented on this question, current protections were felt to be inadequate, and it was suggested that the code of practice for installation should include further measures. There was particular concern around risks of burglary. Respondents suggested that consumers be given information about the visit, such as how to tell if a visitor is genuine, and the time and date of the visit. Consumer Focus put together a draft installation code of practice, developed with the majority views of a range of consumer groups. This code of practice contained a range of additional security measures including Criminal Records Bureau (CRB) checks for installers and engineers, information about the visit including the date and time, the number of installers to expect, the uniforms and ID installers will be carrying and a password to guarantee the validity of the installer. In addition the code included a request that appointments be arranged to allow third parties such as carers to be present where necessary and that suppliers work with police and other local organisations ahead of installation in a certain area.

#### *Suppliers*

1.284. Among suppliers offering views on this topic, the majority felt current protections to be adequate. One supplier suggested that many of the issues that will arise during the installation of smart meters already exist. Another felt that existing protections to be adequate but noted that they considered the biggest risk to be from criminals impersonating meter installers. In place of additional protections, one supplier suggested that a national media campaign and code of practice be used to provide additional reassurance to consumers. Among the small number of respondents who did not feel that current protections were adequate, it was suggested that burglary might be a risk and that there should be publicity materials to prevent this. Additional training was also suggested as a means to cover potential issues specific to smart metering not covered by existing protections.

#### *Other respondents*

1.285. Other respondents who commented on this question included meter manufacturers and operators, industry bodies and trade associations, network operators, telecoms companies, and consultants and service providers among others. Among these other respondents, the majority felt current protections to be inadequate. The need for any national awareness campaign to communicate messages around security, such as how to identify installers, was mentioned most commonly. An organised appointment, reminder and notification process was

suggested as important to protect consumers, along with an accreditations system. It was also asked that suppliers co-ordinate with police and other local organisations where necessary. A small number of respondents discussed where additional security measures might best be placed. Some felt they would sit best as an extension of existing codes, while another felt that the code of practice for installation would be most appropriate. Of the minority who felt current protections to be adequate, a further minority mentioned the need to ensure that current standards do not become less stringent with the large number of installations.

## Monitoring and reviewing the rollout

Rollout Strategy question 11: Do you agree with our proposed approach to requiring suppliers to report on progress with the smart meter rollout? What information should suppliers be obliged to report and how frequently?

1.286. Among the wide range of respondents who answered this question, nearly all supported the proposed approach requiring suppliers to report progress on the smart metering rollout. There were mixed views on what information should be reported and the frequency of reporting.

### *Suppliers*

1.287. Nearly all the larger suppliers supported the need for some form of reporting to monitor progress of the smart metering rollout. There were mixed views as to the detail of what should be reported and at what frequency. Of those who commented, the majority suggested that reporting should be carried out on an annual basis, with one suggesting quarterly and one suggesting every two years. One large supplier supported the proposals on detailed reporting, with a minority suggesting that reporting should be limited to the number or percentage of meters installed rather than on customer numbers. A minority suggested that DCC could collect information in an efficient and cost effective way as it will have a record of all the smart meters connected to the communications network. None of the larger suppliers specifically commented on the reporting of costs. Nearly all those who commented said that it would be very difficult and costly to report on reductions in consumption and energy savings, and advocated that suppliers should not be responsible for this.

1.288. Of the smaller suppliers who responded, nearly all supported the need for reporting to monitor the progress of the smart meter rollout. There were mixed views on the frequency of reporting ranging from quarterly to annual. One smaller supplier advocated that suppliers should only be obliged to report the number of installations, while a second suggested that the reporting should also include the numbers of domestic, smaller non-domestic, credit, prepayment and settlement profile class. The only supplier who commented said that there should be no reporting on costs as it would be onerous and commercially sensitive.

*Consumer groups*

1.289. Among the consumer groups that commented, nearly all supported the need for reporting in order to monitor rollout progress and identify problems. There were mixed views from respondents on the frequency of reporting, with the majority suggesting quarterly and one suggesting annually. The majority of respondents suggested that in addition to the scope proposed in the Prospectus, reporting should also include; the number of times the supplier is unable to complete the installation and the reason, compliance with the installation code of practice, number of IHDs installed, provision of energy efficiency advice and customer complaints. Those consumer groups who commented believed that it would be important to monitor the benefits given the costs to the consumer, plus it would provide an indication of what might need to change. They recognised that this would be challenging and acknowledged that further work would be required.

*Other respondents*

1.290. Other respondents included meter manufacturers and operators, network operators, telecommunications companies, consultants, service providers and trade and industry bodies. Nearly all respondents supported the need for reporting. There were mixed views on the frequency of reporting with a large minority suggesting biannual reporting would be appropriate.

1.291. In addition to the proposed scope of reporting, a number of additional areas were suggested by respondents, including, requests for energy audits, communications failures, dual fuel and single fuel installations, failed installs with reasons, and number of customer complaints. A small number of respondents suggested that DCC should also report on rollout and network performance of meters connected to its network, and on the numbers registered to each supplier. Very few respondents provided comments on the reporting of costs and benefits. Of those who did, one respondent suggested that suppliers should report on energy use per customer and trends in demand reduction as this would be useful to inform future policy. Other respondents did not support cost reporting as it was viewed as being challenging and unlikely to deliver practical benefits, but advocated that suppliers should report benefits by providing a net energy and bill reduction report.

## Appendix 4 - Glossary

### A

#### Advanced meters

Advanced meters are defined in standard supply licence conditions as being able to provide measured consumption data for multiple time periods (at least half hourly for electricity and hourly for gas) and to provide the supplier with remote access to the data.

### C

#### Catalogue

The minimum functional requirements of the smart metering system are brought together in the Smart Metering System Functional Requirements Catalogue (the "Catalogue"). This covers the smart metering system for both the domestic and smaller non-domestic sectors.

#### Codes

Industry codes establish detailed rules that govern market operation, the terms for connection and access to energy networks. The supply and network licences require the establishment of a number of industry codes that underpin the gas and electricity markets.

#### Commercial interoperability

The ability of an incoming supplier to agree mutually acceptable commercial terms with the meter owner for the use of the meter and related equipment when a customer changes supplier.

#### Communications service providers

Providers of communications services that will enable the transfer of data to and from smart meters.

#### Consumer

Person or organisation using electricity or gas at a meter point.

#### Consumer Advisory Group

The Consumer Advisory Group consists of members from groups representing a broad range of domestic consumers. It was set up to help inform the programme and to promote understanding of key consumer issues, particularly more complex issues that cannot be fully explored through primary consumer research.



### Consumer First Panel

Ofgem's Consumer First Panel consists of 108 everyday domestic customers recruited from six locations across Great Britain. Panel members meet regularly to discuss key issues impacting on their participation in the energy market.

### Credit mode

Smart meters will be capable of switching between prepayment and credit mode. When operating in credit mode, customers will be billed for their energy after using it.

### Customer

Any person supplied or entitled to be supplied with electricity or gas by a supplier.

### Customer premises equipment

All smart metering equipment in a customer's home or business.

## D

### Data and Communications Expert Group (DCG)

One of several expert groups established by the programme, following publication of the Prospectus, to draw on the experience of industry and other stakeholders. DCG has considered the scope, set up and activities of the central data and communications body.

### DataCommsCo (DCC)

The new entity that will be created and licensed to deliver central data and communications activities. DCC will be responsible for the procurement and contract management of data and communications services that will underpin the smart metering system.

### Disability Advisory Forum

A group hosted by Ofgem that is attended by a range of organisations representing the interests of people with disabilities.

### Distribution Network Operators (DNOs)

DNOs take electricity off the high-voltage transmission system and distribute this over low-voltage networks to industrial complexes, offices and homes. DNOs must hold a licence and comply with all distribution licence conditions for networks which they own and operate within their own distribution services area. There are 14 DNOs covering discrete geographical regions of Britain.

### Dual fuel

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

## E

### Early movers

Suppliers who are already installing meters with "smart" functionality.

### Electricity meter

A measuring instrument that records the quantity of electricity supplied.

### Emergency credit

Credit applied by a supplier when a prepayment meter is out of credit to help the customer avoid interruption.

### End-to-end smart metering system

The end-to-end smart metering system covers all equipment, communication links and connections from every customer through DCC to suppliers, network operators and authorised third-party service providers.

### Energy Demand Research Project (EDRP)

The EDRP is a suite of large scale trials across Great Britain that seeks to better understand how consumers react to improved information about their energy consumption. The EDRP has trialled a range of methods of providing customers with improved feedback on their energy consumption and other associated interventions. These interventions include smart meters, enhanced energy consumption information on bills, energy efficiency information, visual display units, incentives to reduce or shift consumption and community engagement.

### Energy supplier

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

### Estimated bills

Where a supplier is unable to obtain a meter reading, a customer's bill will be estimated based on past usage.

## F

### Feed-in-tariff (FIT)

A feed-in tariff is a policy mechanism that came into effect in April 2010. It is designed to encourage the adoption of renewable energy sources.

### Foundation stage

The period before market readiness for the mass rollout is fully established. This is also referred to as Phase 2 of the Smart Metering Implementation Programme.

### Friendly credit

The facility on a prepayment meter to prevent disconnection if credit runs out during defined time periods such as overnight.

### Fuel poverty

Households are considered as being in "fuel poverty" if they spend more than 10 per cent of their household income on fuel to keep their home adequately heated.

### Functional requirements

The minimum functions that must be supported by the different elements of the smart metering system to ensure the delivery of the benefits of smart metering. These describe what the smart metering system must do (not how it must do so).

## G

### Gas and Electricity Markets Authority (GEMA)

The Authority is Ofgem's governing body. It consists of non-executive and executive members and a non-executive chair. The Authority determines strategy, sets policy priorities and takes decisions on a range of matters, including price controls and enforcement. The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them. The Authority's powers are provided for under the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998 and the Enterprise Act 2002.

### Gas meter

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A measuring instrument that records the volume of gas supplied.

#### Green Deal

The Green Deal is the Government's initiative to establish a framework that will enable private firms to offer consumers energy efficiency improvements to their homes, community spaces and businesses at no upfront cost, and to recoup payments through a charge in instalments on the energy bill.

#### Guaranteed Standards of Performance

The Guaranteed Standards of Performance set out service levels that must be provided to individual customers by electricity and gas suppliers and distribution companies. These are contained in the Electricity (Standards of Performance) Regulations 2010 and the Gas (Standards of Performance) Regulations 2005. If a company fails to meet a guaranteed standard of performance it must make a payment to the customers affected, subject to certain exemptions.

### H

#### Head-end (system)

Office based system, comprising databases and software that manage interactions between authorised users and the consumer's smart meter system.

#### Home area network (HAN)

The smart metering HAN will be used for communication between smart meters, IHDs and other devices in consumers' premises.

### I

#### Independent Distribution Network Operators (IDNOs)

A licensed distributor that does not have a distribution services area and competes to operate electricity distribution networks anywhere within Great Britain.

#### Independent Gas Transporter (IGT)

IGTs own and operate various small networks embedded within GDN networks.

#### Information Commissioner's Office

The Information Commissioner's Office is the UK's independent authority established to uphold information rights in the public interest, promoting openness by public bodies and data privacy for individuals.

#### In-home display (IHD)

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An IHD is an electronic device, linked to a smart meter, which provides information on a customer's energy consumption.

#### Installer

Person or persons appointed by the supplier who physically installs, configures, commissions or repairs equipment, as appropriate, in a consumer's premises.

#### Interoperability

The ability of diverse systems, devices or organisations to work together (interoperate) on both a technical and commercial basis. See also commercial interoperability and technical interoperability.

### L

#### Licence

Transporting, shipping and supplying gas; and generating, transmitting, distributing and supplying electricity are all licensable activities. Ofgem grants licences that permit parties to carry out these activities in the GB market. The licences require the establishment of a number of multilateral industry codes that underpin the gas and electricity markets. Licensees need to be signatories to codes in order to operate in the gas and electricity markets (see codes).

### M

#### Meter Asset Manager (MAM)

A person approved by the Authority as possessing sufficient expertise to provide gas metering services. A gas MAM essentially provides the services that would be provided by a Meter Asset Provider and Meter Operator in electricity.

#### Meter Asset Manager's Code of Practice (MAMCoP)

The MAMCoP applies to natural gas only. It extends the duties of a MAM. It applies to Independent Gas Transporters undertaking meter asset management services, as part of a bundled gas transportation business, or MAMs who work on behalf of a gas customer, gas supplier or gas transporter to manage primary meter installations connected to the Network as defined by the Gas Safety (Management) Regulations.

#### Meter Operation Code of Practice Agreement (MOCOPA)

An agreement between electricity distribution businesses and electricity meter operators in Great Britain. The agreement authorises meter operators to install and connect meters to the electricity network by clarifying that the equipment being provided, installed and maintained meets appropriate technical requirements and that work is carried out to adequate safety standards.

### Meter Operator (MoP)

In electricity, a Meter Operator is responsible for the installation, commissioning, testing, repair, maintenance, removal and replacement of electricity metering equipment.

### Metering services

The provision, installation, commissioning, inspection, repairing, alteration, repositioning, removal, renewal and maintenance of the whole or part of an installed gas or electricity meter.

## N

### Network operators

The companies that are licensed by Ofgem to maintain and manage the electricity and gas networks in Great Britain.

## O

### Ofgem

The Office of the Gas and Electricity Markets (Ofgem) is responsible for protecting gas and electricity consumers in Great Britain. It does this by promoting competition, wherever appropriate, and regulating the monopoly companies that run the gas and electricity networks. Ofgem is governed by the Gas and Electricity Markets Authority.

### Ofgem E-Serve

Ofgem E-Serve is responsible for Ofgem's support and delivery functions. It focuses on administering environmental programmes and the delivery of sustainability projects such as the policy design phase of the Smart Metering Implementation Programme.

## P

### Pay As You Go (PAYG)

See prepayment mode.

### Prepayment meter

Meters that require payment for energy to be made in advance of use or else they will prevent the supply of gas or electricity. A prepayment customer pays for energy by inserting electronic tokens, keys or cards into the meter.

### Prepayment mode

Smart meters are capable of switching between prepayment and credit mode. When operating in prepayment mode customers have to pay for their energy before using it.

### Programme

The Smart Metering Implementation Programme ("the programme") is the central change programme established by the Government. It is responsible for overseeing the development and implementation of the policy design, including establishing the commercial and regulatory framework to facilitate the rollout. Ofgem E-Serve has managed, on behalf of DECC, the policy design phase of the programme that has informed the Government decisions set out in this document. DECC will be directly responsible for managing the programme during the implementation phase.

## R

### Radio Teleswitch System (RTS)

The Radio Teleswitch System is a one-way data communications method used in the electricity supply industry to directly control heating loads and/or switch tariff rates on customers' meters. It utilises the BBC Radio 4 long wave signal.

## S

### Small and Medium Users' Group (SMUG)

A forum established by Ofgem for engaging with business customer representatives. SMUG is open to small and medium sized users of energy, for example consumer groups such as the Federation of Small Businesses or the British Chambers of Commerce.

### Smaller non-domestic sector

For the purposes of this document, smaller non-domestic electricity and gas sites are those sites in electricity profile groups 3 and 4 and those non-domestic gas sites with consumption of less than 732 MWh per annum.

### Smart appliances

An appliance that can alter the way in which it uses energy (consumption level or time of use) in response to an external signal, eg a price signal.

### Smart Energy Code (SEC)

The proposed new industry code that will cover both gas and electricity and will contain the detailed regulatory, commercial and technical arrangements applicable to smart metering during rollout and on an enduring basis.

### Smart grids

As part of an electricity power system, a smart grid can intelligently integrate the actions of all users connected to it - generators, consumers and those that do both - in order to efficiently deliver sustainable, economic and secure electricity supplies.

### Smart meter

A meter which, in addition to traditional metering functionality (measuring and registering the amount of energy which passes through it) is capable of providing additional functionality for example two-way communication allowing it to transmit meter reads and receive data remotely. The proposed minimum functionality of smart meters is set out in the Functional Requirements Catalogue.

### Smart Metering Design Expert Group (SMDG)

One of several expert groups established by the programme, following publication of the Prospectus, to draw on the experience of industry and other stakeholders. SMDG has considered functional requirements for smart metering equipment.

### Smart metering system

The smart metering system refers to smart metering equipment in customers' premises. In the domestic sector, this equipment comprises the electricity meter, the gas meter, the HAN, the WAN module and the IHD.

## T

### Technical interoperability

Technical interoperability is the ability for different smart metering system components to exchange data and work together independent of manufacturer. This ensures that different suppliers can install in premises without having to change existing equipment at change of supplier, thereby minimising disruption to the consumer. It is also the capability of systems or devices to provide and receive services and information between each other, and to use these services and information exchange to operate effectively together in predictable ways without significant user intervention. Within the context of smart metering, this means the seamless, end-to-end connectivity of hardware and software from consumer premises equipment through to DCC, suppliers, network operators and other authorised parties.

### Technical specifications

The technical specifications for the smart metering system will be an explicit set of solutions and guidelines as to how the smart metering system will fulfil the minimum functional requirements.



### Time-of-use tariff

Under a time-of-use tariff, a supplier varies its charges based on when energy is used (eg day/night, peak/off-peak or by season). Such tariffs can be dynamic (changes in real time) or static (changes at predictable times).

### Translation services

Centralised services that ensure messages between authorised users and smart metering systems are translated into formats that can be interpreted by the smart metering system or user in a consistent manner.

### Trickle disconnection

See load limiting.

## **W**

### Wide area network (WAN)

The smart metering WAN will be used for two-way communication between smart meters and DCC (via the WAN module in the customer's premises).

### WAN module

The WAN module connects the meter to DCC.



