

Smart Metering Implementation Programme: Non-Domestic Sector

Document type: Supporting Document

Ref: 94i/10

Date of publication: 27 July 2010

Deadline for response: 28 October 2010

Target audience: Energy suppliers and network operators, consumers, consumer organisations and representatives, environmental bodies, meter asset providers, meter asset managers, meter operators and metering and communication equipment manufacturers, academics and other interested parties.

Overview:

This document is one of a number of supporting documents published alongside the Smart Metering Implementation Programme Prospectus.

This document identifies the area where the approach proposed for non-domestic customers differs from that for domestic customers. In particular we propose that suppliers of non-domestic customers would not be required to use the new central communications facility but would be able to do so if they wished. We are not proposing any exemptions for smaller non-domestic customers from the requirement to have a smart meter – other than where advanced metering is already provided.

Contact name: Margaret Coaster

Tel: 020 7901 7000

Email: smartmetering@ofgem.gov.uk

Team: Smart Metering Team, Ofgem E-Serve

Context

The Government is committed to the rollout of electricity and gas smart meters to all homes in Great Britain and to the broad delivery framework underpinning the development of policy to date.

On behalf of the Department of Energy and Climate Change (DECC), Ofgem E-Serve has been managing the first phase of a central programme to design and implement new cross-industry arrangements for the delivery of smart metering. Ofgem E-Serve's smart metering work has been undertaken in conjunction with Ofgem's Sustainable Development Division.

The Prospectus represents the joint views of DECC and the Gas and Electricity Markets Authority (GEMA) based on the work conducted so far during the initial phase of the Smart Metering Implementation Programme ('the programme'). It sets out detailed proposals for consultation on the design and delivery of the smart metering system. Alongside the Prospectus, Ofgem is publishing a number of supporting documents which set out in more detail the alternative options considered.

Reflecting the approach adopted to date, the remaining work to scope the regulatory framework will be led by Ofgem E-Serve on behalf of DECC. Later this year, the governance and management arrangements for subsequent phases of the programme will be decided upon.

Associated Documents

DECC and Ofgem have jointly published the Smart Metering Implementation Programme Prospectus. This document is one of a number of Ofgem supporting documents published alongside the Prospectus.

DECC has also published updated impact assessments for the domestic and non-domestic sectors and a paper on disablement/enablement functionality for smart gas meters.

To help inform the programme, Ofgem also commissioned specific research (carried out by FDS) into consumer awareness of, and attitudes towards, smart metering. All documents are available on the Ofgem website at the following location:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=40&refer=e-serve/sm/Documentation>

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Summary

The Government believes that every business and public sector electricity and gas customer should have smart or advanced energy metering suited to their needs. Large non-domestic customers¹ are already required to have advanced metering by April 2014. The focus of this supporting document is the proposed approach to smart metering for smaller non-domestic energy customers².

The Government considers that electricity and gas meters at smaller non-domestic premises should have smart functionality on the same timescales as domestic premises. In the domestic sector, suppliers will be required to report regularly on the progress they are making against rollout targets. We welcome views on whether there is a case for particular arrangements for targets and reporting for smaller suppliers or for the non-domestic sector.

The Government has confirmed the high-level list of requirements previously identified for smart metering functionality. In general, the functional requirements for the domestic and non-domestic sectors will be the same. However, meters for the smaller non-domestic sector will not have to include a gas valve and suppliers will not be required to provide in-home displays (IHDs) to their non-domestic customers. This does not preclude the market from offering additional functionality.

We recognise that some non-domestic consumers already have meters with advanced functionality, and that this has enabled energy and carbon savings. We will allow customers to retain such meters:

- Where advanced metering is installed before April 2014 and the customer wishes to retain it; and
- Where advanced metering is installed after April 2014 under pre-existing contractual arrangements.

We have considered the case for any technical exceptions to the requirement to install smart meters. At this stage, we do not believe that any exceptions will be needed, as we expect industry to develop solutions to many of the current technical problems over the course of the rollout. However, we invite views about whether any situations already justify specific exceptions and whether flexibility will be required in this area. We propose that suppliers be required to take all reasonable steps to achieve their rollout targets.

In the domestic market, all communication with meters will be co-ordinated by a single central communications provider: referred to as DataCommsCo (DCC). We do not propose to oblige suppliers in the non-domestic sector to use the services of DCC for meters with smart functionality, given that there is already an established

¹ Non-domestic electricity customers with meters on profile classes 5 to 8 and non-domestic gas customers with consumption of 732 MWh to 58,600 MWh per year.

² Non-domestic electricity customers with meters on profile classes 3 and 4 and non-domestic gas customers with consumption of less than 732 MWh per year.

competitive market for these services serving the non-domestic market. Instead, we propose that suppliers and other parties may choose to use DCC if they wish to do so. We believe that this will potentially allow smaller non-domestic customers access to lower costs available in the domestic sector, increased interoperability and better access to the competitive market. Market participants would still be able to offer value-added services, including energy management services and energy efficiency advice. Given DCC's position in the market, we propose to limit its ability to offer energy management services.

We recognise that the decision not to mandate use of DCC may give rise to legitimate concerns around interoperability, ensuring data provision for smart grids and the costs of maintaining separate industry processes used only by a relatively small number of customers.

Given the number of premises in the smaller non-domestic sector, we consider it vital that robust interoperability arrangements be in place. These will give customers confidence and protect investment in new technology. We seek views on how work resulting in interoperability should best be taken forward, and on what timescale. Ofgem intends to introduce a package for the continued safeguarding of consumers' interests. This package could include measures around interoperability.

We would also welcome views on whether suppliers' existing requirements under the Distribution Connection and Use of System Agreement (DCUSA) to provide data to network operators should be augmented or underpinned by specific licence obligations. The decision not to mandate use of DCC may be reviewed in the future, for example if strong evidence emerges of serious interoperability issues or if smart grid requirements are not being met.

This supporting document considers in detail three areas related to the treatment of smaller non-domestic customers: the appropriate smart meter functionality for non-domestic consumers, flexibility around the mandate to install smart meters, and the use of DCC to communicate with non-domestic meters. It also provides a brief summary of the proposed approach to requirements for data provision, data privacy and security, and rollout. Full details of the proposed approaches on the latter issues are included in the relevant supporting documents.

1. Introduction

Context and scope

1.1. This paper describes key features of the proposed approach to smart and advanced metering for smaller non-domestic energy customers.³ These are electricity customers on profile classes 3 and 4, and non-domestic gas customers with consumption of less than 732 MWh per year. This group encompasses a wide range of premises including micro-businesses and sole traders, smaller commercial premises, small light industrial premises and many public sector buildings.

1.2. For large non-domestic customers (electricity customers on profile classes 5 to 8 and gas customers with consumption of 732 MWh to 58,600 MWh per year), the Secretary of State has already used powers under the Energy Act 2008 to mandate the installation and use of advanced meters by April 2014, subject to certain exceptions. The impact assessment supporting that modification estimated that around 165,000 electricity and 40,000 gas meters fell into this category. This paper is concerned with smaller non-domestic customers and we do not consider large non-domestic customers further.

The smaller non-domestic metering market

1.3. There are around 2.1 million smaller non-domestic electricity meters. Of these, 1.6 million meters are on profile class 3 (single-rate tariff) and 500,000 are on profile class 4 (two-rate tariff – e.g. Economy 7). Average consumption is around 15,000 kWh per year for a smaller non-domestic customer on a single rate tariff and 25,000 kWh per year for a smaller non-domestic customer on Economy 7. This is three to five times the average for a domestic customer.⁴

1.4. There may be up to 1.5 million smaller non-domestic customers in the gas sector. However, standard gas industry data does not differentiate domestic and non-domestic customers in the same way as for electricity, and this number may be an over-estimate. DECC's impact assessment estimates that the average gas consumption for a non-domestic customer in this sector is 79,800 kWh per year, although this is subject to significant variation across individual customers.⁵

1.5. The pressure to control the cost of energy consumption and, for large non-domestic customers or premises that are part of large groups, the additional incentives provided by the Carbon Reduction Commitment⁶ have encouraged many

³ Meters with smart functionality comply with all the functional requirements described in this paper. 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 that data.

⁴ All data in this paragraph is from Elexon.

⁵ *Impact Assessment of advanced/smart meters rolled-out to small and medium non-domestic sites*, DECC, July 2010.

⁶ The CRC Energy Efficiency Scheme is a regulatory incentive to improve energy efficiency in

non-domestic customers to install advanced meters. This number is expected to grow.

1.6. Many of the existing advanced meters have been installed by advanced metering service providers rather than suppliers. Non-domestic customers, like domestic customers, may install their own meters or to appoint an accredited party, other than their supplier, to install the meter and collect readings from it. These providers have grown in number over recent years and offer a service tailored to consumers' requirements, providing feedback on consumption patterns via the internet or over a local network. This feedback allows consumers to monitor their consumption and to target energy and carbon savings. Service providers contract with communications companies to permit the meter to be accessed and data downloaded.

1.7. Both the Gas Act 1986 and the Electricity Act 1989 require energy to be supplied through an appropriate meter. Suppliers must ensure that the meters and the installation design are fit for purpose. They normally meet this obligation through arrangements with their Meter Asset Managers (MAMs) or Meter Operators (MOPs).

1.8. The non-domestic market has features that are significantly different to those of the domestic market. These include the following:

- Non-domestic users have a higher average consumption per premise than domestic users, increasing the value of any percentage saving derived from use of smart or advanced meters;
- According to trials conducted by the Carbon Trust⁷, non-domestic users have a higher propensity to reduce gas consumption by responding to information feedback. DECC's impact assessment assumes 4.5 per cent reduction for smaller non-domestic users compared to 2 per cent for domestic credit customers;
- Dual fuel supply is less common in the non-domestic sector;
- Many non-domestic consumers sign fixed term contracts with their supplier and, for this and other reasons, change of supplier rates are significantly lower in this market segment; and
- The Big 6 suppliers have a lower market share than in the domestic market, especially in the gas sector where several independent suppliers focus exclusively on non-domestic consumers.

Key requirements and issues

1.9. The rollout of smart meters to smaller non-domestic customers will share many common aspects with domestic customers. Smaller non-domestic customers often use the same meters as domestic customers and suppliers often use common supply chain and back office systems to provide smart meters to both sectors.

around 20,000 large public and private sector organisations. More details are available on the DECC website.

⁷ *Advanced metering for smaller non-domestics: Carbon and cost savings*, Full Report, Carbon Trust, May 2007.

1.10. This paper considers in some detail three areas related to the treatment of smaller non-domestic customers:

- Chapter 2 reviews the appropriate smart meter functionality for smaller non-domestic customers;
- Chapter 3 considers the case for any exceptions to the mandate to install smart meters for smaller non-domestic customers; and
- Chapter 4 considers the role of DCC in the non-domestic sector.

1.11. Chapter 5 provides a brief summary of the recommended approach to requirements for data provision, data privacy and security, and rollout. Full details of the proposed approaches on the latter issues are included in the relevant supporting documents. Finally, Chapter 6 concludes and summarises the programme's next steps in this area.

2. Smart meter functionality for non-domestic customers

This chapter reviews stakeholder views and evidence about the smart meter functionality in the non-domestic sector and sets out our proposals in this area.

2.1. It had previously been proposed that the same functionality be used for smaller non-domestic customers as domestic customers except that an in-home display (IHD) would not be required and a gas valve would not be mandated. The programme has considered whether, in the light of its further detailed work, any further differences relative to the smart meter functionality proposed for domestic customers would be justified.

Stakeholder views and analysis

2.2. The programme has considered whether the functional requirements proposed for smart meters in the domestic sector are appropriate for the non-domestic sector.

2.3. There is broad agreement among stakeholders that the provision of IHDs and a gas valve should be left to the market, on the basis that smaller non-domestic customers are likely to access information in a variety of ways (such as online monitoring, or specific data advice from energy service companies) and that a mandate for a gas valve was not justified on cost/benefit grounds.

2.4. At an evidence gathering session conducted in April 2010, stakeholders expressed a view that meter functionality in the domestic and non-domestic sector should not be treated differently, unless properly justified. A view was also expressed that it is important to have smart functionality in the non-domestic sector as the size of loads in this sector means these customers are important for network operation purposes.

2.5. The programme has assessed the available evidence and noted the views of stakeholders, and has concluded that all the elements of smart functionality considered for the domestic sector are likely to be useful in some parts of the non-domestic sector, but the diverse nature of the market means they may not be used by all customers. However, given the volumes of meters being produced, the incremental cost of full functionality is likely to be very low. The programme, therefore, considers that the proposed functional requirements of the smart metering system are appropriate for this sector. These requirements are set out in the "Statement of Design Requirements" supporting document.

2.6. Stakeholders have suggested that smart meters may have less functionality in certain areas than some advanced meters that are already available (for example, advanced gas meters may have a large battery to enable more frequent transmission of data than is envisaged in the smart meter functional requirements). However, the definition of advanced metering functionality is generally seen as a sub-set of smart functionality.

2.7. Moreover, the decision to mandate smart functionality is not intended to inhibit enhancement of the specification where there is a market for extra services. Where there are some features of advanced meters that may be superior to standard smart meters, there is no reason why these could not be provided by the market. Given that smart meters are expected to be substantially cheaper in future than advanced meters are today (due to the higher manufacturing volumes), their adoption may both enhance services and reduce costs relative to advanced meters today.

2.8. The question of excluding advanced meters from the requirement to have smart functionality in the post 2014 period is discussed in Chapter 3.

Conclusion

2.9. In conclusion, the programme maintains the position that the smart meter functional requirements for non-domestic customers will be the same as those for domestic customers, except that there will be:

- No requirement to provide an IHD; and
- No requirement to install a gas valve.

3. Flexibility for installations of advanced and smart meters

This chapter considers the case for flexibility around installations of smart meters for smaller non-domestic customers, in particular whether there should be any exceptions to the smart meter mandate

Question 1: Are there any technical circumstances where only advanced rather than smart metering would be technically feasible? How many smaller non-domestic customers have U16 or CT meters and what scope is there for full smart meter functionality to be added in these cases?

Question 2: Do you agree with our proposed approach to exceptions in the smaller 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?

Context

3.1. The Government has reaffirmed the decision that meters without smart functionality can remain, or can continue to be installed:

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

3.2. In the next phase of work, the programme will develop further guidance with respect to pre-existing contractual arrangements that is able to be understood by customers and suppliers and protects the legitimate interests of both. The need for exceptions to enable advanced rather than smart meter installations due to technical constraints is discussed below.

Technical constraints

3.3. There could also be exceptions to allow installation of advanced rather than smart meters where there are technical constraints on achieving smart functionality. Following discussions with industry, we have identified various circumstances where potential technical issues may arise.

3.4. In discussions to date stakeholders have suggested two meter types for which smart metering technology may not be readily available and advanced metering may therefore need to be installed:

- U16 (large volume) gas meters. An integrated, electronic version of this meter is not currently available commercially. Developing full smart functionality could be expensive, given the limited number of meters over which to spread development and production costs (around 20,000 of these meters are replaced each year across all sectors).
- Current transformer (CT) electricity meters. For a small number of large electricity meters, above 69 kW, stakeholders have indicated that provision of integrated smart functionality may present problems. Again, the difficulty here may lie in the lack of suitable products on the market, rather than lack of technical feasibility.

3.5. For U16 meters, discussions with industry have suggested that advanced metering could consist of using advanced functionality delivered via a pulse-reading device attached to the meter. This would mean that advanced metering at least is possible at premises where a pulse is available. Depending on the final specification of smart metering functionality, some advanced metering of this type may also comply with the smart meter functional requirements.

3.6. For CT meters, it may also be possible to adapt existing technology to provide smart features, with some exceptions (such as the ability for remote disconnection). To date we have not received any information on the number of such meters, although stakeholders have also suggested that the number may be small in this part of the non-domestic market, with most CT meters installed at premises of large industrial and commercial customers. We invite further information about these meters and their current use.

3.7. Similarly, at this stage the programme has not received definitive evidence that smart functionality is unavailable or unobtainable for U16 gas meters and CT electricity meters, whether integrally or via an addition to the metering system. We do not, therefore, propose to make exceptions for these meters at this stage. However, we would welcome views in response to this consultation on the scope, or lack of it, for these meters to have appropriate functionality.

Question 1: Are there any technical circumstances where only advanced rather than smart metering would be technically feasible? How many smaller non-domestic customers have U16 or CT meters and what scope is there for full smart meter functionality to be added in these cases?

3.8. Stakeholders have also suggested that there may be circumstances where it is technically difficult to install smart or advanced metering, including:

- Remote or underground premises where communications signals are not available;
- Inaccessible meters where the meter has been closed off by brickwork or built into other structures, making it difficult to install smart or advanced meters without expensive relocation;
- Supply interruption is expensive or risky for the customer (for example loss of production or safety critical power sources);

- Some premises which currently have 125 amp electricity meters with 125 amp fuses could be replaced by modern 100 amp meters, requiring an upgrade to a more complex and expensive meter in order to maintain the load capacity of the premises; and
- Distribution Network Operator (DNO) cut-outs will not allow the metering installer to complete the exchange of an electricity meter.

3.9. The programme invites further information about the number of such premises, the relative costs and benefits of installing smart or advanced metering at such premises. We consider that there is scope to develop technical solutions to some of these problems over the course of rollout. Likewise, in cases where interruption cannot easily be countenanced or where support from the network operator is required, the length of the rollout period provides scope for problems to be identified and managed. We therefore propose to proceed on the basis that there is no justification for an exception in these cases, but would welcome further detailed information in response to this consultation.

Proposed approach

3.10. In line with the approach for domestic customers, we propose that suppliers be required to take all reasonable steps to ensure all smaller non-domestic customers have smart meters installed in line with rollout targets (subject to the exceptions already announced for advanced metering). The fact that we propose that this be subject to an all reasonable steps test acknowledges that there may be cases where installation may not be possible. When more information is available about the costs and other issues associated with the hardest to reach meters, this issue could be revisited.

3.11. We note that under existing legislation, suppliers can apply for a warrant where they need to access a property to replace a meter. We would not expect suppliers to apply for warrants to install smart meters except where they consider it necessary for other reasons, for example because they have not been able to carry out a necessary safety check or have reasons to suspect meter tampering.

3.12. We note that many smaller non-domestic customers have meters provided by third parties who are not licensed. We do not anticipate that the licence condition mandating the installation and use of smart meters in the non-domestic sector will prevent third parties from continuing to provide meters. This is consistent with the approach taken in the licence conditions mandating the installation and use of advanced metering for large non-domestic customers.

Question 2: Do you agree with our proposed approach to exceptions in the smaller 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?

4. Use of DCC to communicate with meters in the smaller non-domestic sector

This section considers the potential role of DataCommsCo (DCC) in providing data communications to and from meters with smart or advanced functionality in the smaller non-domestic sector: specifically, whether use of DCC should be mandated, optional or prohibited.

Question 4: Do you agree with the proposed approach that use of DCC should be optional for non-domestic participants in the sector?

Question 5: If use of DCC is not mandated for non-domestic customers, do you agree with the proposed approach as to how it offers its services and the controls around such offers?

Question 6: To what extent does our proposed approach to the use of DCC for non-domestic customers present any significant potential limitations for smart grids?

Question 7: Is a specific licence condition required to ensure that metering data for non-domestic customers can be provided to network operators or DCC, and should any provision be made for charging network operators for the costs of delivering such data?

Question 8: How can interoperability best be secured in the smaller non-domestic sector?

4.1. This chapter addresses the role of DCC in providing data management and communications services with respect to meters with smart functionality in the smaller non-domestic sector. The focus is on meters which comply with full smart meter functionality requirements. At the end of the section, we assess what approach is required for advanced meters.

Context

4.2. The Government has confirmed that a central communications provider (DataCommsCo or DCC) will be required to be used with respect to smart meters installed in domestic premises, although the proposed staged approach to implementation means that other communications providers may be used initially (see the "Implementation Strategy" supporting document for more details). The advantages of centrally co-ordinating communications are that:

- It helps assure technical interoperability of smart meters by providing a communications link and interface for meter data that remains in place on change of supplier;
- It offers scope to simplify and improve industry processes, making it easier to switch between suppliers; and

- It facilitates smart grids by providing a central hub through which smart meter data and meter access can be made available to network operators, while ensuring confidentiality and security are protected.

4.3. There has been no previous recommendation as to whether smart or advanced meters in the smaller non-domestic sector should also be required to use DCC. This decision depends on the strength of the arguments above applied to the non-domestic sector, relative to the benefits of choice for customers within a market where there is already some active competition.

4.4. As noted in the introduction, many smaller non-domestic customers already have some form of advanced metering, unlike the domestic sector. This is often provided via agents who contract with customers and suppliers to provide data collection and communication services, alongside other value-added services such as energy efficiency advice and sub-metering. Mandatory use of DCC would require all data to be collected and transmitted to suppliers or network operators by the central body. However it would not prevent energy management service providers from analysing data and offering energy efficiency advice or other value-added services for customers using data transmitted via DCC or via the home area network (HAN), with the customer's consent.

4.5. Suppliers with a large domestic customer base may be more likely to use DCC for their smaller non-domestic customers to DCC even without a formal mandate to do so, based on a desire for simplicity and commonality in their metering processes. They may seek to install full smart rather than advanced meters and use DCC in tandem with those meters. Other metering service providers may be less inclined to use DCC if they have existing communications providers.

4.6. We expect that there will continue to be a mix of smart and advanced metering in the non-domestic sector. We expect advanced metering to be installed, under the terms of the exemptions, primarily in large premises or smaller premises of organisations with multiple premises (retail chains, local authorities etc). The impact assessment assumes that around 23 per cent of smaller non-domestic electricity premises and 40 per cent of smaller non-domestic gas premises might receive advanced metering, with the rest receiving full smart metering. The impact assessment assumes clear differentiation between existing advanced and future smart metering, although it may prove to be the case that good quality advanced metering meets full smart functionality requirements.

Options in relation to use of DCC for non-domestic consumers

4.7. Smart meters in the smaller non-domestic sector will need communication links over a wide area network (WAN) with the relevant suppliers or their appointed data collectors. The issue is whether this service should be provided by DCC. There are three main options:

- **Option 1 - mandatory use of DCC:** communications with smart meters must be undertaken through DCC;

- **Option 2 - elective use of DCC:** suppliers or agents could be permitted to use DCC but have no obligation to do so - either on the basis of bilateral negotiation between DCC and suppliers/agents or with DCC obliged to offer terms to suppliers and agents on request; or
- **Option 3 - prohibition on use of DCC:** use of DCC services for non-domestic customers could be prohibited.

4.8. In principle, different options could be used in the electricity sector and the gas sector, reflecting the specific characteristics of each. However, our approach has been to move to a common regulatory approach for both fuels wherever practicable.

4.9. These issues have been addressed at a number of stakeholder events throughout spring 2010. Stakeholders have also contributed written information and consultation responses.

4.10. An important issue is how any mandate for smart meters to use DCC would be applied. Some metering providers have expressed concerns that if this were based on functionality alone, existing advanced meters that have similar functionality to smart meters might be required to use DCC in spite of having existing contractual arrangements with communications providers. During the next stage of the programme, we will work with the industry to develop a detailed meter specification to correspond to the functional requirements identified by the programme. If use of DCC is mandated, at some point, for communication with respect to meter types that meet the smart metering specification, these would be brought within the ambit of DCC.

Option analysis and evaluation

4.11. This section analyses and evaluates the options above with respect to the key considerations of interoperability, simplifying industry processes and facilitating smart grids. It also considers the potential impact on competition in the existing market for advanced metering services and the impact on DCC itself.

Interoperability

4.12. Non-domestic customers value the ability to change supplier. Improving the technical interoperability of smart and advanced metering (i.e. the technical ability of one party to use a meter installed by another party) and commercial interoperability (i.e. the ease with which a new party can agree price and other contractual terms for the use of a meter installed by another party) is important in preventing barriers to customers switching supplier and for the effective operation of the competitive market.

4.13. The use of DCC with respect to non-domestic smart meters is expected to achieve interoperability with respect to communications. If DCC use is not mandated, then additional steps will be required to ensure that suppliers and meter service providers are able to use meters installed by other parties. The question is whether

interoperability arrangements achieved without the use of DCC could be as effective as those achieved if DCC were mandated.

4.14. There will continue to be a mix of smart and advanced meters in place in this sector in future so it remains vital that robust interoperability measures are in place that can deliver across both smart and advanced meters.

4.15. There have been concerns from stakeholders about existing interoperability arrangements, especially in the smaller non-domestic gas sector. An industry forum facilitated by Ofgem has been considering the issue of interoperability for advanced meters for large non-domestic customers since 2008, and the electricity and gas groups have now agreed some measures to improve interoperability. The rollout of smart meters provides added impetus to the existing need to address interoperability issues.

Scope for simplifying industry processes

4.16. DCC may provide a platform for simplifying industry processes by locating data and/or data processing in a single place to assist settlement, meter registration or the change of supplier process. As discussed in the "Communications Business Model" supporting document, we propose that DCC's initial scope is limited to secure communications and access control, translation services and scheduled data retrieval. Suppliers and their agents would still be able to access the meters themselves for the purposes of configuration, to take ad hoc reads and for diagnostics. The scope of DCC's activities may change over time, for example, it is not envisaged that meter registration will be included within DCC's scope initially but could be included later. However, DCC will not be permitted to undertake direct provision of energy management services to consumers. The "Communications Business Model" supporting document provides more details on proposed DCC scope.

4.17. Once large numbers of smart meters are being read remotely, it may make sense to centralise the data processing aspects of data collection and data aggregation for use in settlement in the electricity sector, rather than having it done on a distributed basis by agents. This is still under discussion for the domestic market. If DCC were to provide this service in the domestic market, it could be efficient and cost effective also to offer this to the non-domestic market.

4.18. If simplifying industry processes relies on using DCC as a platform, then allowing some meters in the non-domestic sector not to communicate via DCC could have two impacts:

- It would limit the scope for industry processes to be simplified. Various methods of handling exceptions would need to be developed in order to continue to process meters that do not use DCC for data management and communications, increasing cost and complexity.
- Customers who were not party to the new processes, because their meters continue to communicate using non-DCC providers, would not benefit from any

new or faster services based on simpler industry processes. In turn, this could increase costs to those customers and/or reduce interoperability.

4.19. A further consideration is that if large numbers of meters do move across to use DCC, the unit costs of maintaining separate systems for a relatively small number of other meters could rise. It may reach a point where a requirement for DCC to be used to communicate with all smaller non-domestic meters could reduce costs and be in the interests of both industry and customers. In practice, however, these incentives may not work effectively; for example if suppliers perceive an advantage to limiting interoperability for their incumbent customers and this outweighs the cost savings they could achieve.

Facilitating Smart grids

4.20. Network operators have indicated that smart meters could provide data that would allow them to manage their networks more efficiently and effectively, particularly in the electricity sector. Non-domestic customers can constitute significant loads on the network. Network companies, therefore, see smart functionality for these customers as important. In the gas sector, smart grids are likely to be less important and the benefits that do arise are more likely to be related to operational planning rather than active network management. This suggests that requiring use of DCC is less important for the development of gas smart grids.

4.21. There have been suggestions that not using central communications for non-domestic consumers could constrain the development of smart grids. Through DCC, network operators could have access rights to all data and meters on a standardised basis, subject to data privacy and security considerations. If the use of DCC is not mandated, a key issue is how the data requirements of network companies to enable smart grid activities would be achieved in a consistent way.

4.22. Stakeholders have suggested that smart grid functionality in the electricity sector could take two forms:

- Use of data for operational planning, for which data with a lag of days or weeks may still be useful; and
- Active network management, which would require more data and meter access more frequently (e.g. in some instances at one to five minute intervals).

4.23. The Energy Network Association (ENA) has stated that the short-term data requirements for network operators will be for network planning purposes. This would normally be needed on a rolling 3-month basis and the volume of this data and the required latency should be easily managed by all likely communication solutions.⁸ The longer-term requirements of smart grids may be significantly greater, requiring much lower latency (i.e. faster response time) for communicating with the smart metering system and a greater ability to manage large and possibly localised

⁸ *High-level smart meter data traffic analysis*, Engage Consulting for the ENA, May 2010.

peak data flows, although the timing for any additional data requirements are not yet clear.

4.24. In both the gas and electricity sector, suppliers have an existing obligation under industry codes (DCUSA and the UNC) to “provide or procure the provision to [the relevant network operator] of (without charge) such Metering Data ... as the [network operator] may reasonably require for... the operation, design and planning of its distribution system”. While this may provide a solution, the development of smart grids may mean that in future network operators will need more data more often than suppliers collect for their own purposes. This is discussed further below.

Implications for competition in the market for advanced metering services

4.25. The Energy Services and Technology Association (ESTA) currently lists 40 service providers in its metering and monitoring group. Of these eight are qualified by Elexon as non half hourly data collectors and data aggregators in the electricity sector. These firms have been characterised as advanced metering service providers but some of the same companies have already started to offer smart meters and are likely to expand this offering as the programme moves forward. Metering service providers also assist some customers with energy management, including participating in the Carbon Reduction Commitment (CRC). Although all have different service offerings, a typical offer would include:

- Providing an advanced or smart meter;
- Contracting with a communications company (e.g. a mobile operator) to allow remote access to the meter data;
- Scheduling transfers of meter data at appropriate frequencies, for use in energy management by the consumer and in supplier billing; and
- Undertaking data processing necessary to derive Estimated Annualised Consumption (EAC) / Annualised Advance (AA) and to aggregate data for presentation to settlement in the electricity sector and to deliver validated meter data to xoserve for gas.

4.26. DCC will not supply new meters or offer detailed analysis of, or advice on, energy use. However it could take over the role of the communications provider in competition with other providers in the smaller non-domestic sector. Subject to decisions on its scope DCC may in future take on certain data processing roles to assist settlement in the electricity sector. This would have a consequential impact on the existing advanced metering service providers who operate as non-half-hourly data collectors and data aggregators.

4.27. Mandating the use of DCC could therefore impact on part of the service offering that smaller non-domestic customers receive from metering agents. In particular, market participants would no longer individually contract for communications on a customer’s behalf and may over time have a reduced role in data processing. Market participants would still be able to provide smart meters and offer value-added services based around energy management services and energy efficiency advice using data provided by DCC, subject to customer consent. However, if DCC use were

mandated existing providers would no longer be able to offer the full range of services they do at present.

Impact on DCC and communication costs for domestic customers

4.28. A final consideration is to assess the impact on DCC of acting as a provider of communication services to non-domestic, as well as domestic, customers. The main considerations are how costs might be affected if up to two million additional smaller non-domestic premises were covered by DCC services, and whether this would change if its use were elective rather than mandated.

4.29. The potential implications have been assessed in the context of work on the "Communications Business Model" supporting document. The main points, which are generic rather than technology specific, are as follows.

- The addition of over two million non-domestic premises to the 27 million households due to receive smart metering would add just under 8 per cent to the total number of premises to which DCC would need to offer connections. The increase in metering points could be slightly higher since single fuel supply is more common in the non-domestic sector and some suppliers might choose to have an independent WAN connection for each meter rather than share a WAN.
- Such increased demand would be unlikely to cause any capacity problems as long as meter data would primarily be downloaded at night (if the capacity is provided on an existing network) or be spread evenly over the day (if the network is a dedicated one). This position might change if, in the context of smart grids, network businesses were to demand frequent data throughout the day at short intervals of time, or if the data needs of smaller non-domestic customers were substantially greater than for domestic customers.
- To the extent that the communications solution has fixed costs, independent of the number of WAN connection points or the volume of data traffic, an increase in the number of WAN connection points would drive a small reduction in unit costs for the benefit of all consumers connected to DCC. This value is more likely to be captured in a competitive bid for communications service provision if there is a mandate to use central communications rather than if it is elective, since applicants for the DCC licence are more likely to take account of certain demand.
- It is possible that data traffic would be higher for non-domestic consumers who are more likely to want access to half-hourly data on a more frequent basis. However, to the extent that DCC's cost recovery includes an element to cover costs that are driven by data traffic/volume, inclusion of non-domestic consumers would not impact on the charges for domestic consumers.

4.30. A further point is that making use of DCC elective could create some degree of contestability between different communications providers, which might offer an indication of whether DCC was offering value for money.

4.31. Overall, it is unlikely that any of the options listed at the beginning of this section would have any significant impact on DCC or on the services it provides to the domestic sector.

Proposed approach

4.32. The programme does not propose to oblige suppliers or meter service providers in the non-domestic sector to use DCC with respect to meters with smart functionality. There is already an active market for these services and mandating use of DCC would reduce the choice available to suppliers and risk limiting innovation in new services.

4.33. We do, however, recognise the legitimate concerns expressed by stakeholders around interoperability, smart grids and the costs of maintaining separate industry processes used with respect to a small number of customers. There are a number of routes to address these concerns, which are described below. The decision not to mandate use of DCC in this sector may be reviewed in the future, for example if strong evidence emerges of serious interoperability issues or if smart grid requirements are not being met.

4.34. The programme considers it very important that the non-domestic sector should have access to services provided by DCC, and we do not see a case for prohibiting use of DCC in this sector. There is no reason to think that DCC's capacity would be constrained by the additional workload associated with these meters.

4.35. Some stakeholders have expressed concerns about DCC's ability to use its exclusive position in the domestic sector to compete unfairly with advanced metering service providers for energy management or efficiency services. Given DCC's position in the market, we propose to limit its ability to offer such services. Giving DCC the right to operate in the non-domestic sector ensures that participants (suppliers or service providers) have choice and can benefit from market developments related to the establishment and operation of DCC. It may also help to achieve wider benefits in this sector, for instance around improved industry processes.

4.36. As to the question of how DCC should charge for its services, the programme proposes that DCC would be obliged to offer terms for use of its services on the same basis to suppliers or metering service agents of both non-domestic customers and domestic customers.

Question 4: Do you agree with the proposed approach that use of DCC should be optional for non-domestic participants in the sector?

Question 5: If use of DCC is not mandated for non-domestic customers, do you agree with the proposed approach as to how it offers its services and the controls around such offers?

Measures to promote access to data by network operators

4.37. If DCC use is not mandated, the programme recognises the need for the industry to address legitimate concerns about network operators' access to data, including for smart grid purposes. Network operators will need to be able to access metering data for non-domestic customers, even where DCC is not the communications provider. The granularity of such data may also be greater than is currently provided.

4.38. As noted above, suppliers are already obliged via DCUSA condition 29.3 to provide such metering data without charge to network operators on request as the network operator may reasonably require for the operation, design and planning of its distribution system. Suppliers also have a licence obligation to comply with DCUSA. In cases where non-domestic customers have meters provided by metering agents, their agents already provide data to suppliers for settlement and billing purposes. The DCUSA obligations effectively require suppliers to have back-to-back contracts in place with metering agents so that metering data can also be provided to network operators.

4.39. We would welcome views on whether the existing DCUSA requirement is adequate or whether it should be augmented with a specific licence obligation on suppliers to provide data to network operators to support the operation, design and planning of the distribution system. We would welcome views in respect of both data provision as a whole and of data granularity. We would also welcome views on whether any such obligation should be to provide data direct to network operators or if separate provision is needed to provide data to DCC (even where communications are provided by a third party) as well as or instead of network operators if DCC acts on behalf of network operators. We note that the requirement to provide data to DCC could be important if DCC's scope evolves to cover centralised data management activities over time.

4.40. The DCUSA obligation requires suppliers to provide data to network operators without charge. We would also welcome views on whether a specific licence condition is required to ensure that data can be provided to network operators or DCC if greater levels of data provision are necessary and on the associated charging arrangements.

Question 6: To what extent does our proposed approach to the use of DCC for non-domestic customers present any significant potential limitations for smart grids?

Question 7: Is a specific licence condition required to ensure that metering data for non-domestic customers can be provided to network operators or DCC, and should any provision be made for charging network operators for the costs of delivering such data?

Measures to promote interoperability

4.41. The programme considers it vital, given the number of premises in the smaller non-domestic sector, that robust interoperability arrangements be in place to give customers confidence and protect investment in new technology.

4.42. Interoperability needs to be considered in the context of a sector where there will be two broad types of metering – smart metering and other advanced metering that may or may not be using DCC’s services. For smart metering where the supplier or agent are using DCC, we anticipate that the same interim and longer-term arrangements that are developed for the domestic sector will apply. The process for developing these is described in more detail in the “Regulatory and Commercial Framework” supporting document. In those circumstances, both technical and commercial interoperability would be delivered. Arrangements to secure commercial interoperability would also be needed where the new supplier did not wish to use DCC whereas the original one did.

4.43. Given the range of smart and advanced metering in the non-domestic sector, it is likely that only commercial interoperability will be possible. We will work actively with industry to establish appropriate interoperability arrangements. This work will be informed by responses both to this consultation and to Ofgem’s Review of Metering Arrangements.

Question 8: How can interoperability best be secured in the smaller non-domestic sector?

Use of DCC to communicate with advanced meters

4.44. This section considers the use of DCC for data management and communication with advanced meters. The main arguments in favour of mandating use of central communications (interoperability, enabling smart grids and simplifying industry processes) are equally valid for advanced meters. So are the arguments for allowing customers to access DCC’s services where they wish to do so. Therefore, as for meters with full smart functionality, we propose that use of DCC for customers with advanced meters should be elective.⁹

4.45. There is however an important difference compared to the case of fully smart meters. DCC will design its systems and processes to operate with meters that satisfy all the smart meter design requirements. To the extent that advanced meters do not meet these functional requirements, the effect of providing services for such

⁹ Meters adopted by DCC would need to support appropriate levels of data privacy and security.

meters may impose additional costs, the magnitude of which will depend on how close the advanced meter is to meeting the requirements.

4.46. Although there is uncertainty about the size of the impact, there would be risks in an obligation for DCC to provide its standard set of services at standard prices to meters that may differ significantly in their functionality. This would increase risk for DCC and thus increase costs for its users. Only DCC and its service providers, once in place, will be in a good position to assess the impact of providing services for advanced meters.

4.47. We propose that DCC still be obliged to offer terms for different categories of advanced meters. These terms could differ from those for fully smart meters but any differences in the charges or other terms and conditions would need to be justified. Since there may only be small volumes of some meter types, and it may impose costs on DCC to determine where particular types of advanced meter are compliant with existing service protocols, DCC should have scope to recover the cost of such investigations from suppliers or metering agents asking for terms. This is consistent with regulation elsewhere, such as connection agreements, where assessment and design costs are borne by the applicant.

5. Other issues related to non-domestic customers

This chapter discusses issues around data provision to non-domestic customers, and possible customer protection measures needed around prepayment and remote disconnection. It also briefly discusses questions of data privacy and security, and the smart meter rollout strategy as they apply to non-domestic customers. A full description of the proposed approach in each of these areas is contained in the relevant supporting documents.

Question 9: What steps are needed to ensure that customers can access their data, and should the level of data provision and the means through which it is provided to individual customers or premises be a matter for contract between the customer and the supplier or should minimum requirements be put in place?

Question 10: Do you agree with our approach to data privacy and security for non-domestic customers?

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?

Data provision to non-domestic customers

5.1. As in the domestic sector, provision of data to customers from smart meters will be central to delivering the smart metering implementation programme benefits. In the non-domestic market, the range of customer categories is very wide, encompassing micro-businesses, relatively large users and the smaller premises of large private and public sector organisations. This range of customers carries with it different needs, including for metering data. For example, micro-businesses with energy use comparable to that of households may wish to have data of the same type and through the same means as to domestic customers. Large users or multi-premise organisations may wish to receive data of a particular type or frequency at specific times.

5.2. In these circumstances, the programme considers that it is important that data provision remains capable of capturing and delivering information needed to reduce or reconfigure energy use and to facilitate interaction with the competitive market (both smart and advanced meters have minimum prescribed functionality that enables them to do this). The provision of a display device is not being mandated in the smaller non-domestic sector. Nevertheless, we believe that it will be important that these customers have access to their consumption information and are able to share this information with authorised third parties, for example to obtain tailored energy efficiency advice.

5.3. Some consumer groups have suggested that we should require suppliers to provide at least a minimum level of consumption information to their smaller non-domestic customers. It may be that decisions on what data is provided for an individual customer or premise (and via which means) may best be taken by

customers and their suppliers or agents in agreeing commercial arrangements. The programme would welcome views on whether this issue should be left to commercial arrangements or whether this matter should be regulated under a supply licence condition, for example, requiring suppliers to facilitate non-domestic customer rights to access their data.

5.4. Smart and advanced metering should also ensure that customers receive accurate, timely bills that will help them to reduce their electricity or gas consumption. The programme would also welcome views on whether this has implications for billing frequency and content and whether this can be left to commercial arrangements.

5.5. To ensure that the benefits of smart and advanced metering are maximised and the business case delivered, it will also be important to ensure that customers are fully aware of the information that their new meters can provide and how it can be used. In this respect, the programme is proposing that a code of practice covering the provision of information and advice to customers should be provided at the time of installation. The "Rollout Strategy" supporting document contains further details.

Question 9: What steps are needed to ensure that customers can access their data, and should the level of data provision and the means through which it is provided to individual customers or premises be a matter for contract between the customer and the supplier or should minimum requirements be put in place?

Prepayment and remote disconnection

5.6. At present, relatively few non-domestic customers use prepayment meters. The rollout of smart meters will make it technically easier to switch non-domestic customers between credit and prepayment payment methods at least in electricity. As noted in Chapter 2, gas smart meters will not be required to contain a valve facilitating remote enablement and disablement of supply, although suppliers could choose to promote this functionality.

5.7. Smart metering could therefore encourage more use of prepayment in future, as non-domestic customers take advantage of different ways of paying, and suppliers encourage prepayment use (or, in the first instance, the use of a meter capable of switching between credit and prepayment) for customers who otherwise risk falling into debt. The resulting reduction in supplier risk could result in the availability of more supply offers in the non-domestic sector and may reduce the need for onerous upfront security deposits when entering into new contracts. Smart electricity meters also allow remote load control and disconnection. As well as debt control, remote load control offers the potential for new services to control specific loads in response to time-of-use tariffs or smart grid requirements.

5.8. Stakeholders have raised questions about how suppliers will use the remote functionality of smart meters and what consumer protection measures will be in place. In particular, they have noted that many of the protection measures that

apply to domestic customers do not apply to non-domestic customers, and that there are both consumer protection issues (e.g. suppliers requiring customers to use prepayment when customers do not wish to) and potential safety issues (e.g. remote disconnection or reconnection when energy is being used to power machinery or lifts) that need to be considered.

5.9. The Gas Act 1986 and the Electricity Act 1989 state that customers must be given at least 28 days to pay their bill and then at least seven days notice before a supplier can install a prepayment meter or disconnect the supply following non-payment of charges. This applies to both domestic and non-domestic customers. However, most of the other protections in the energy supply licences apply only to domestic customers.

5.10. We recognise that there are important issues around prepayment and remote disconnection and intend to carry out further work in parallel with this consultation. This will include considering whether additional protections are required in order to reflect the remote functionality of smart meters and, if so, the balance between protection via licence conditions, voluntary codes applying to all suppliers, and discretionary agreements between individual suppliers and their customers.

Data privacy and security

5.11. Smart metering will result in a step change in the amount of data available from electricity and gas meters. This will, in principle, enable energy consumption to be analysed in more detail (e.g. half-hourly) and to be read more frequently (e.g. daily, weekly or monthly). We believe it is essential customers can readily access the information available from their meters. They should be free to share this data with third parties, for example to seek tailored advice on energy efficiency or which supplier or tariff is best for them.

5.12. We recognise the potential sensitivity of data on customers' energy usage, including commercial sensitivity for businesses. We have taken a rigorous and systematic approach to assessing and managing the important issues of data privacy and security and will continue to do so in the next stages of our work. We will develop a privacy and security framework for smart and advanced metering data and determine the protections required for data from non domestic smart meters.

5.13. We have proposed as a principle that consumers should be able to choose how their consumption data is used and by whom, except where data is required to fulfil regulated duties. While the Data Protection Act does not necessarily apply to smaller non-domestic customers, we would expect the same principle to apply and regulate as necessary to require this.

5.14. It is imperative that the smart metering system is secure. Building on best practice we have looked at the privacy and security issues across the end-to-end metering system. We will now be looking to develop the more detailed requirements for how these risks should be addressed, which will then be reflected in the technical specification that the industry will be required to adopt.

5.15. Further information on the approach to data privacy and security are contained in the "Data Privacy and Security" supporting document.

Question 10: Do you agree with our approach to data privacy and security for non-domestic customers?

Rollout

5.16. Many aspects of the rollout of smart meters to smaller non-domestic customers will be closely integrated with the rollout of smart meters to domestic customers. For example, large suppliers are likely to use the same supply chains and meter fitters to install meters for smaller non-domestic and for domestic customers, for example, and much of the supporting technology will be similar or identical. However, suppliers and customers will build on and use this infrastructure in different ways, valuing some services differently from domestic customers. The proposed rollout strategy recognises the need to adapt to reflect the particular needs of non-domestic customers.

5.17. The "Rollout Strategy" supporting document provides full details of the proposed approach to rolling out meters to domestic and smaller non-domestic customers where these align, and asks a number of questions for consultation about their treatment. This section provides a brief summary.

5.18. We propose that suppliers will be subject to an obligation to take all reasonable steps to ensure that all smaller non-domestic customers are supplied via a smart meter by the target rollout date (subject to the flexibility around installations of advanced metering described in Chapter 3). As noted earlier, placing the obligation on suppliers is not intended to prevent third parties from continuing to provide meters where customers prefer to make such arrangements. The formulation of the target for non-domestic customers would need to take this into account.

5.19. In the domestic sector, suppliers will be subject to annual targets to achieve a certain rate of progress in installing meters. The Government has stated its desire to set ambitious but achievable targets, and is discussing with stakeholders on what that should mean. We welcome views on whether the same requirements should also apply to suppliers of non-domestic customers.

5.20. A number of customer protection measures will attach to the rollout of smart meters. Industry and other interested parties will be expected to develop a code of practice to cover customers' experience of installation, for instance around providing advance warning about meter replacement or minimising business interruptions. The code should also cover minimum standards of information and advice to be provided at the time of installation. It is important to recognise that the measures taken as part of the programme to raise customer awareness should not preclude suppliers or other parties providing additional energy efficiency advice. We would welcome views about how the programme can best ensure that non-domestic customers receive practical support or information from organisations, such as business groups, that would not be relevant for domestic customers.

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?

6. Conclusions and next steps

Conclusions

6.1. In many parts of the smart metering regulatory regime, the same requirements will apply in both the domestic and smaller non-domestic sectors. Suppliers and customers may choose to use smart meters in different ways and build somewhat different services on the back of smart metering technology, but the core smart metering system will be similar. We have set out our proposals for specific requirements relating to smaller non-domestic customers as follows:

- The smart meter functional requirements for the smaller non-domestic sector will be the same as those for the domestic sector, except that there will be no requirement to provide an IHD or to include a gas valve.
- All smaller non-domestic customers should have smart meters on the same timescales as for the domestic sector. We propose that suppliers should be required to take all reasonable steps to achieve the target dates, except where advanced metering has been installed before April 2014 and the customer wishes to retain it; or where advanced metering is installed after April 2014 under pre-existing contractual arrangements.
- Suppliers or metering service agents in the non-domestic sector would be able to use DCC but would not be required to do so, although DCC will be obliged to offer terms in the non-domestic sector on the same basis as in the domestic sector. The decision not to mandate use of DCC may be reviewed in the future if, for example, strong evidence emerges of serious interoperability issues or if smart grid requirements are not being met.

Next steps

6.2. The priorities for the programme going forward will be to:

- Consider whether there is a case for any technical exceptions in the non-domestic sector in the light of responses to this consultation;
- Consider measures to provide for appropriate levels of technical and commercial interoperability in this sector; and
- Develop appropriate arrangements for data provision to network operators from smart and advanced meters where the supplier or metering agent chooses not to use DCC.

Appendices

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Appendix 1 - Consultation Response and Questions

1.1. We would like to hear the views of interested parties in relation to any of the issues set out in this document. When responding please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of an organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

1.2. We would especially welcome responses to the specific questions included in each chapter and that are replicated here. These detailed questions sit behind the more high-level questions contained in the Prospectus.

1.3. Responses should be received by **28 October 2010** and should be sent to:

- Margaret Coaster
- Smart Metering Team, Ofgem E-Serve
- 9 Millbank, London SW1P 3GE
- 020 7901 7000
- smartmetering@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them on the websites of Ofgem (www.ofgem.gov.uk) and DECC (www.decc.gov.uk). Respondents may request that their response is kept confidential.

1.5. Respondents who wish their responses to remain confidential should clearly mark the document(s) to that effect and include the reasons for confidentiality. Respondents are asked to put any confidential material in the appendices to their responses. It would be helpful if responses could be submitted both electronically and in hard copy.

1.6. Individual responses and information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

1.7. In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department of Energy and Climate Change or Ofgem. We will process your personal data in accordance with the DPA. In the majority of circumstances, this will mean that your personal data will not be disclosed to third parties.

1.8. Any questions on this document should, in the first instance, be directed to:

- Margaret Coaster
- Smart Metering Team, Ofgem E-Serve
- 9 Millbank, London SW1P 3GE
- 020 7901 7000
- smartmetering@ofgem.gov.uk

1.9. You may make copies of this document without seeking permission. Further printed copies of the consultation document can be obtained from the contact above. An electronic version can be found on the Ofgem website at: www.ofgem.gov.uk. Other versions of the document in Braille, other languages or audio-cassette are available on request.

CHAPTER 3

Question 1: Are there any technical circumstances where only advanced rather than smart metering would be technically feasible? How many smaller non-domestic customers have U16 or CT meters and what scope is there for full smart meter functionality to be added in these cases?

Question 2: Do you agree with our proposed approach to exceptions in the smaller 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?

CHAPTER 4

Question 4: Do you agree with the proposed approach that use of DCC should be optional for non-domestic participants in the sector?

Question 5: If use of DCC is not mandated for non-domestic customers, do you agree with the proposed approach as to how it offers its services and the controls around such offers?

Question 6 To what extent does our proposed approach to the use of DCC for non-domestic customers present any significant potential limitations for smart grids?

Question 7: Is a specific licence condition required to ensure that metering data for non-domestic customers can be provided to network operators or DCC, and should any provision be made for charging network operators for the costs of delivering such data?

Question 8: How can interoperability best be secured in the smaller non-domestic sector?

CHAPTER 5

Question 9: What steps are needed to ensure that customers can access their data, and should the level of data provision and the means through which it is provided to individual customers or premises be a matter for contract between the customer and the supplier or should minimum requirements be put in place?

Question 10: Do you agree with our approach to data privacy and security for non-domestic customers?

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?

Appendix 2 - Glossary

A

Access control

The method used to ensure that access to meter data is only available to properly authorised parties.

C

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. The electricity codes are: Balancing and Settlement Code (BSC), Connection and Use of System Code (CUSEC), Distribution Code, Grid Code, Master Registration Agreement (MRA), System Operator-Transmission Owner Code (STC), Distribution Connection and Use of System Agreement (DCUSA). The gas codes are the Uniform Network Code (UNC), Independent Gas Transporter (IGT) Network Codes, Supply Point Administration Agreement (SPAA).

Commercial interoperability

The terms on which a new supplier can use the meter and related equipment when a customer changes supplier.

Consumer

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

Customer

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

D

Data aggregation

Involves the aggregation of data from individual meters, and submission to ELEXON for settlement.

Data collector

A person qualified to retrieve, verify, process and validate meter reading data.

DataCommsCo (DCC)

New proposed entity which would be created and licensed to deliver central data and communications activities. DCC would be responsible for managing the procurement and contract management of data and communications services that will underpin the smart metering system.

Data processing

Involves the validation of meter reading data, and the transfer of the relevant information to interested parties.

Data Protection Act 1998

The Data Protection Act 1998 defines UK law on the processing of data on identifiable living people. It is the main piece of legislation that governs the protection of personal data in the UK.

Data retrieval

Obtaining a reading (either manually or remotely) from a meter.

DCUSA

Distribution and Connection Use of Systems Agreement.

Demand-side management

Demand-side management (also known as load management) involves energy consumers managing demand in response to changes in the balance between supply and demand, usually in response to a price signal.

Department of Energy and Climate Change (DECC)

The Department of Energy and Climate Change (DECC) was created in October 2008, to bring together: energy policy and climate change mitigation policy.

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

Electricity meter

A measuring instrument that records the quantity of electricity supplied.

Energy suppliers

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

ELEXON

ELEXON is the Balancing and Settlement Code Company (BSCCo) defined and created by the BSC. The BSC places obligations on ELEXON, who consequently manage the balancing and settlement arrangements, in conjunction with the BSC Panel. ELEXON therefore procures, manages and operates services and systems, which enable the balancing and imbalance settlement of the wholesale electricity market and retail competition in electricity supply.

F

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. Describes what the smart metering system must do (not how it must do so).

G

Gas meter

A measuring instrument that records the volume of gas supplied.

Gas valve

A gas valve may be incorporated into a gas meter to regulate the flow of gas into the consumer premise. It is distinct from the isolation valve.

H[Home Area Network \(HAN\)](#)

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

I[Industrial and Commercial \(I&C\) sector](#)

The non-domestic sector in general rather than any specific group of customers.

[In-home display \(IHD\)](#)

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

[Interoperability](#)

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

K[kWh](#)

Kilowatt-hour is a unit used to measure energy consumption in both electricity and gas. The kilowatt-hour is a unit of energy equal to 1000 watt hours or 3.6 megajoules. Energy in watt hours is the multiplication of power in watts, and time in hours. A 100W light bulb left on for one day will consume 2.4 kWh (0.1*24).

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 licenses require the establishment of a number of multilateral industry codes that underpin the gas and electricity markets. Licensees need to be signed up as parties to codes in order to operate in the gas and electricity markets (see [codes](#)).

M[Metering Services](#)

The provision to a customer of a meter that meets the prescribed limits for accuracy (currently +2.5% and -3.5%). It includes meter provision and meter operation.

N[Network operators](#)

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

O[Ofgem](#)

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

[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 Smart Metering Implementation Programme.

P[Prepayment meter \(PPM\)](#)

These are 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 PPM customer pays for energy by inserting electronic tokens, keys or cards into the meter.

[Privacy by design](#)

A system that has been designed with privacy in mind from the outset.

[Programme](#)

The Smart Metering Implementation Programme.

S**Smart Energy Code**

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

Smart grids, as part of an electricity power system, 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

In addition to traditional metering functionality (measuring and registering the amount of energy which passes through it), smart meters are capable of two-way communication allowing them to transmit meter reads and receive data remotely.

Smart metering regulatory regime

The regime which will provide the arrangements for the introduction and ongoing operation of smart metering. These regulatory arrangements will be introduced using powers under the Energy Act 2008 to amend existing licences and codes, and to create a new licensable activity and a new licence.

T**Technical interoperability**

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 the smart metering system, this means the seamless, end-to-end connectivity of hardware and software from customer 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 functional requirements

U[Uniform Network Code \(UNC\)](#)

The Uniform Network Code is the hub around which the competitive gas industry revolves, comprising a legal and contractual framework to supply and transport gas. It has a common set of rules for all industry players, which ensure that competition can be facilitated on level terms. It governs processes, such as the balancing of the gas system, network planning, and the allocation of network capacity. See also [codes](#).

V[Value-added services](#)

Services beyond the 'core services' necessary for the functioning of the smart metering system, which will be enabled by the smart metering infrastructure.

W[Wide area network \(WAN\)](#)

The smart metering WAN will be used for two-way communication between smart meters and DCC (via the WAN communications module in the customer's premises).

X[Xoserve](#)

Xoserve delivers transportation transactional services on behalf of all the major gas network transportation companies, and provides a consistent service point for the gas Shipper companies.

Appendix 3 - The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.¹⁰

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly¹¹.

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of existing and future consumers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them¹²;
- the need to contribute to the achievement of sustainable development; and
- the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.¹³

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

¹⁰ Entitled "Gas Supply" and "Electricity Supply" respectively.

¹¹ However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

¹² Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.

¹³ The Authority may have regard to other descriptions of consumers.

- promote efficiency and economy on the part of those licensed¹⁴ under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- the effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation¹⁵ and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

¹⁴ Or persons authorised by exemptions to carry on any activity.

¹⁵ Council Regulation (EC) 1/2003