

Appendix 8.4: Smart meter roll-out in Great Britain

Introduction

1. In this appendix we briefly describe the roll-out of smart gas and electricity meters to domestic and smaller non-domestic customers in Great Britain, including the roles of the different parties involved and the communication, regulatory and privacy frameworks being implemented. We also discuss some of the key differences between the domestic and smaller non-domestic frameworks. Finally, we discuss some of the key challenges associated with the smart meter roll-out.
2. The aim of the appendix is to inform our thinking on our remedies on: half-hourly settlement of profile classes 1 to 4, prioritisation of smart meter roll-out to prepayment customers, code governance and price cap.
3. This appendix pulls together information and data that are publicly available or have been provided to us by parties. It does not seek to interrogate or test that information so as to form a view on the reliability and accuracy of the information, particularly as regards the timeliness of the smart meter roll-out. We do however have some concerns over the timely delivery of what is a major programme, as discussed in Section 11.

The Smart Meter Implementation Programme

4. DECC is leading the Smart Metering Implementation Programme. It expects the programme to deliver £17.1 billion of economic benefits against costs of £10.9 billion.¹ Consumer benefits from smart meters include lower energy consumption, load shifting from peak periods, improved consumer experience and engagement, easier switching between suppliers and reduced carbon emissions. Cost savings for energy suppliers, network operators and terms of generation capacity are also expected.
5. Under the programme, smart meters will be installed over two implementation phases: the foundation stage and the main installation phase.
 - **Foundation stage:** this phase began in April 2011 and involved establishing the policy, regulatory and commercial frameworks that will underpin the delivery of smart meters. A shared data and communications

¹ See DECC (2014), [Smarter meter roll-out for domestic and small and medium non-domestic sectors- Impact Assessment](#). The EU third liberalisation package required that member states conduct a cost-benefit analysis (CBA) of rolling-out smart meters by 3 September 2012, with a subsequent roll-out if this assessment was positive. For electricity, there is a target of 80% roll-out by 2020 for member states proceeding with a roll-out for smart electricity meters.

infrastructure was established in September 2013 with the appointment of the Data Communications Company (DCC) and Smart Energy GB as key enablers of the main installation phase. This phase also allows energy suppliers to test business procedures and consumer engagement using the first generation of smart meters ('SMETS 1' – Smart Metering Equipment Technical Specification).

- **Main installation phase:** this phase will start in the second half of 2016 when the DCC starts operating and will be completed in 2020. An estimated 53 million meters are expected to be replaced in 30 million homes and small businesses across the two phases. The majority of smart meters installed during the main installation phase will use the second version of the technical specifications SMETS 2, which have technical differences to SMETS 1. SMETS 1 meters will continue to be installed until 1 August 2017.² SMETS 2 meters will be installed from February 2017 until the roll-out is complete.³
6. Under DECC's programme, the roll-out of smart gas and electricity meters in Great Britain is led by suppliers and supported by a centrally provided data and communication infrastructure (the DCC). This approach differs from that adopted by a number of other countries in the European Union and around the world.
 7. In most European countries, distribution network operators are responsible for the roll-out of smart meters⁴ as they own meters and have been undertaking a number of metering-related activities (eg maintenance).⁵ In Great Britain the roll-out is supplier-led and we discuss the implications of a supplier-led roll-out as opposed to a distribution network operator-led roll-out in Section 4.

Smart meter roll-out plans

8. Gas and electricity suppliers are required to install smart meters for all domestic and smaller non-domestic customers (ie profile classes 3 to 4) by the end of 2020.
9. By the end of 2015, suppliers had installed a total of approximately 2.3 million smart meters in domestic premises and just over 500,000 smart or advanced meters in small non-domestic sites.⁶ While this represents only 5% of the total

² DECC (31 July 2015), [Smart Metering Implementation Programme](#), p7, paragraph 19.

³ *ibid*, p41, paragraph 12.

⁴ See European Commission staff working document, [Cost-benefit analyses & state of play of smart metering deployment in the EU-27](#), p21 and Table 11.

⁵ Aoife Brophy Haney, Tooraj Jamasb and Michael G Pollitt, [Smart Metering and Electricity Demand: Technology, Economics and International Experience](#), Cambridge Working Paper in Economics 0905.

⁶ DECC (March 2016). [Smart Meters, Great Britain, Quarterly report to end December 2015](#)

number of smart meters that will need to be installed by 2020, the rate of installation increased significantly in 2015. For example, the number of domestic smart meters increased from approximately 765,000 in December 2014 to just over 2.3 million in December 2015 (the latest period for which we have data).

10. Suppliers have to submit their roll-out plans⁷ and progress reports to Ofgem, which monitors their progress with the roll-out⁸ and, for larger suppliers,⁹ can enforce compliance.¹⁰ Larger suppliers are also required to provide numbers of smart meter installations and meters in operation to DECC on a quarterly basis.¹¹ Only smart meters that meet the SMETS¹² regulations count towards supplier roll-out obligations for domestic properties. In smaller non-domestic sites, advanced meters may be installed as an alternative to SMETS-compliant smart meters until April 2017 for large suppliers and August 2017 for smaller suppliers.¹³ They may also be installed between April 2016 and December 2020 where a contract to install such meters was in place before April 2016. These meters will not have to be replaced with SMETS-compliant meters before 2020 and count towards the supplier's roll-out obligation.¹⁴

⁷ Larger suppliers were required to submit roll-out plans that contain annual milestones in February 2016. Small suppliers were required to submit roll-out plans that contain annual milestones in April 2016. These annual milestones show the percentage of domestic and smaller non-domestic meter points in the licensee's portfolio that will have a smart meter by the end of any given year. See Ofgem, [Decision on supplier reporting to Ofgem during the smart meter rollout](#), p4; and Ofgem, [The smart meter rollout: Observations on suppliers' rollout preparations and small supplier rollout template guidance](#).

⁸ Each January from 2017 to 2020 larger and smaller suppliers must submit a progress report. This will contain two sections: progress against the annual milestone and a narrative section. Suppliers were required to submit a dry run of the progress report in April 2016. See Ofgem, [Decision on supplier reporting to Ofgem during the smart meter rollout](#), p5.

⁹ Larger energy suppliers are those that supply gas or electricity to at least 250,000 domestic customers. See DECC, [Smart Meters, Great Britain, Quarterly report to end September 2015](#), p7.

¹⁰ See Ofgem, [Decision on supplier reporting to Ofgem during the smart meter rollout](#), p7.

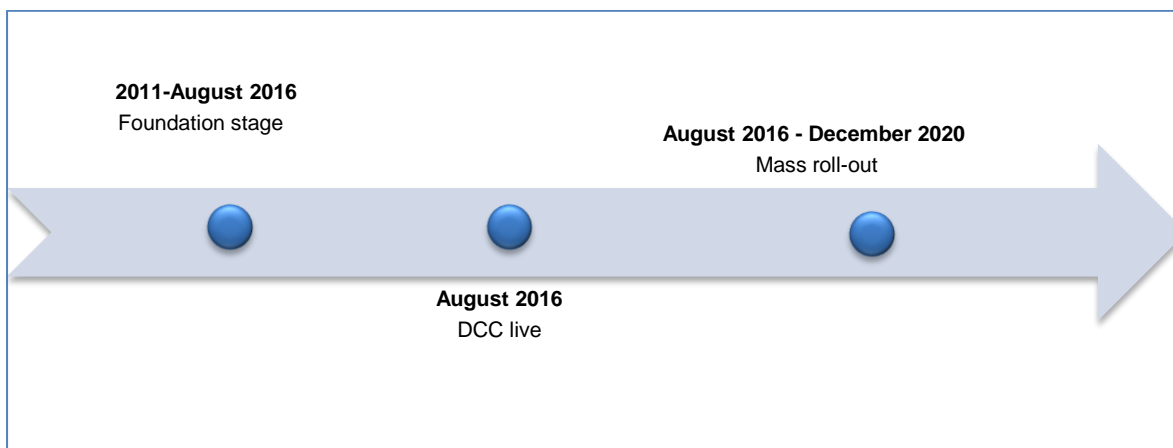
¹¹ See DECC, [Smart Meters, Great Britain, Quarterly report to end September 2015](#), p7. Non-domestic suppliers are not required to provide information to DECC on a quarterly basis and therefore do not form part of the quarterly reports.

¹² A smart meter is defined as meter that is compliant with the SMETS. It has functionality such as being able to transmit meter readings to energy suppliers and receive data remotely. It is also capable of enabling two-way communication, where energy retailers or other central agents are able to send information or commands back to the meter itself. See DECC, [Smart Meters, Great Britain, Quarterly report to end March 2015](#), p7.

¹³ An extension of the period in which advanced meters might be installed was confirmed in December 2015. See DECC (2015), [Government response to March 2015 consultation on non-domestic smart metering: the advanced metering exception](#).

¹⁴ See DECC, [Smart Meters, Great Britain, Quarterly report to end March 2015](#), p7.

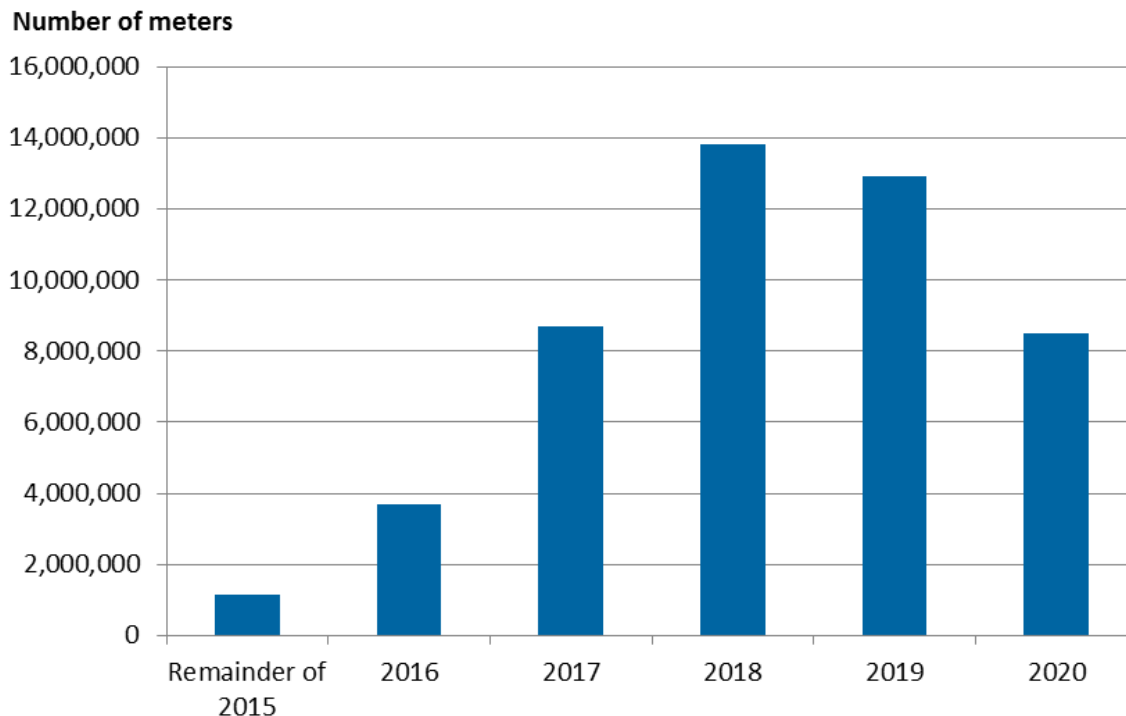
Figure 1: Key milestones of smart meter roll-out



Source: CMA.

11. A number of SMETS-compliant meters (SMETS 1) have already been installed by suppliers during the foundation stage and these count towards the suppliers’ roll-out obligations. As noted above, figures provided by DECC indicate that over 2.3 million SMETS 1 meters had been installed by large energy suppliers by end-December 2015 in domestic properties.¹⁵

Figure 2: Projections by the larger energy suppliers of the number of smart and advanced meters to be installed per year in domestic and non-domestic properties between 2015 and 2020 as at the end of June 2015



Source: DECC (2015), *Smart Metering Implementation Programme: Fourth Annual Report on the Roll-out of Smart Meters*.

¹⁵ See DECC (March 2016). *Smart Meters, Great Britain, Quarterly report to end December 2015* .

12. DECC expects near universal roll-out by 2020¹⁶. However, suppliers believe that 100% roll-out may not be feasible¹⁷ and one supplier considered that up to 20% of customers might refuse to have a smart meter installed.¹⁸ Further, the DCC was initially due to go live in 2015, but has been delayed until August 2016.¹⁹ Some parties suggested that this delay to the start of the DCC's communications infrastructure would undermine the prospect of achieving the 100% roll-out by 2020.²⁰
13. The rollout plans suppliers submitted to Ofgem in February 2016 included each supplier's estimates of the proportion of premises that will have received a smart meter by the end of each year leading up to the 2020 deadline.²¹ Tables 1 and 2 below set out for electricity and gas the progress each supplier expects to make in rolling out smart meters.

Table 1: Suppliers' estimates of the proportion of premises (domestic and non-domestic) expected to have received an electricity smart meter by the end of each year

	2015	2016	2017	2018	2019	2020
Centrica	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
EDF Energy	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
E.ON	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
RWE	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SP	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SSE	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: CMA analysis.

Table 2: Suppliers' estimates of the proportion of premises (domestic and non-domestic) expected to have received a gas smart meter by the end of each year

	2015	2016	2017	2018	2019	2020
Centrica	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
EDF Energy	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
E.ON	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
RWE	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SP	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SSE	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: CMA analysis.

¹⁶ Licence conditions require suppliers to take all reasonable steps to ensure that, by end-2020, smart meters are installed at their customers' premises.

¹⁷ See National Audit Office (2014), [Update on preparations for Smart Metering](#), p30, paragraph 2.19.

¹⁸ *ibid.*

¹⁹ House of Commons Energy and Climate Change Committee, [Smart meters: progress or delay? Ninth Report of Session 2014–15](#), p12, paragraph 22.

²⁰ House of Commons Energy and Climate Change Committee, [Smart meters: progress or delay? Ninth Report of Session 2014–15](#), p12, paragraph 22.

²¹ It is important to note that suppliers' roll-out plans are based on their assumptions in a number of areas.

14. Tables 1 and 2 above indicate that suppliers have different views regarding the number of premises in which they expect to have installed smart meters by the 2020 deadline. For example, by the end of 2020, [X] estimates that it will have installed electricity and gas smart meters in [X] and [X] of premises respectively. In contrast, SSE expects to have installed smart meters in [X] and [X] of premises by the end of 2020. However, the overall picture indicates that all suppliers with [X] believe that the rollout of smart meters will be nearly complete by the 2020 deadline.
15. As part of the roll-out, Economy 7, dynamically teleswitched and prepayment meters will also be replaced. DECC has set out its intention to introduce the New and Replacement Obligation, which would require suppliers to install smart meters whenever they replace or install new meters including prepayment, from mid-2018.²² This obligation is further considered in our discussion of the proposed remedies relating to the accelerated roll-out of smart meters for prepayment customers.
16. During a customer visit to install a smart meter, suppliers are required to explain to customers how they can use smart metering equipment to improve energy efficiency and are banned from engaging in sales transactions. Customer consent must be obtained in advance if the supplier wishes to conduct marketing activities during the installation.²³

In-home display

17. In addition to a smart meter, all domestic customers will be offered an in-home display as part of the smart meter roll-out. This is a small electrical device, which has a number of functionalities such as showing how much energy is being used, and how much it is costing in near-real-time.^{24,25} An example of the functionalities of an in-home display is shown in Figure 3 below. The screen also allows a customer to see current use, usage over the last few hours, days, weeks or months. The in-home display will communicate with the smart meter via the home area network as shown in Figure 3 below. Currently suppliers are not obliged to offer non-domestic customers an In-home display.

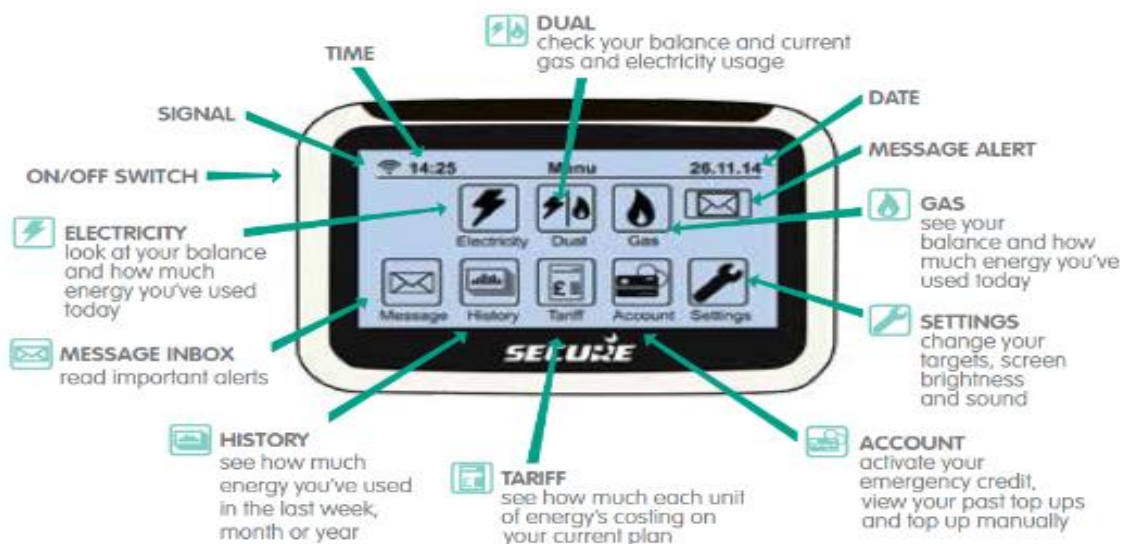
²² See DECC (2015), [Government response to the Smart Metering Rollout Strategy consultation](#).

²³ See Energy UK: '[Smart Meter Installation Code of Practice](#)'.

²⁴ See DECC, [Smart Meters, Great Britain, Quarterly report to end March 2015](#), p7.

²⁵ In addition, suppliers may apply to the Secretary of State to undertake trials where they promote in-home display alternatives instead of offering an in-home display when installing smart meters. See DECC (2016), [In-home Display Licence Conditions: Consultation response](#).

Figure 3: Example of information provided on an in-home display



Source: [Ovo Energy](#).

Communication frameworks

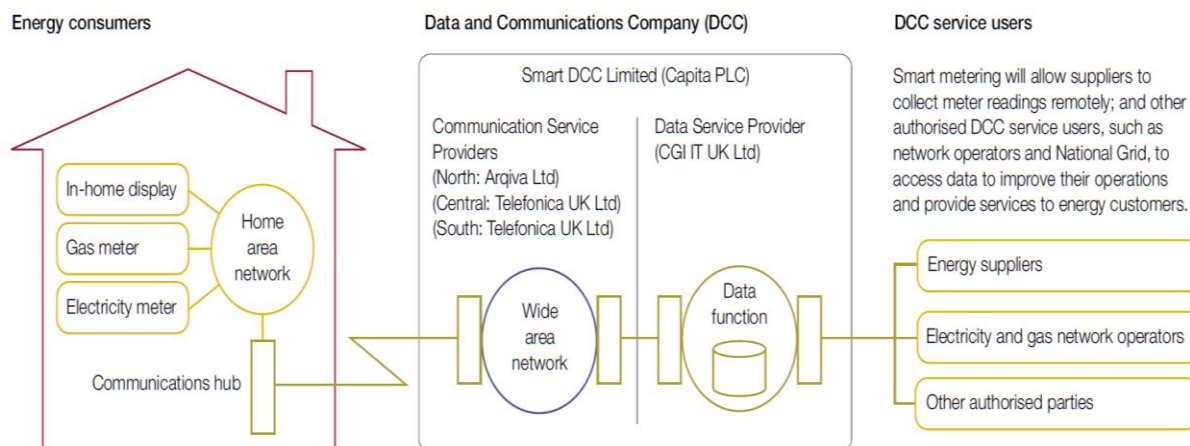
18. The DCC, due to be operational in August 2016, will be responsible for the communications infrastructure that enables the secure transfer of data between smart meters in domestic and smaller non-domestic premises and energy suppliers, network companies and other authorised parties.²⁶ The DCC infrastructure will also ensure that the same smart meters can be used with different electricity suppliers and thus assuring interoperability and customers' ability to retain smart services when they switch suppliers. It is regulated by Ofgem under a price control regime and funded by DCC users (primarily energy suppliers and distribution network operators). Data from smart meters will be transferred via a wide area communication network (WAN) using long-range radio communications, cellular radio communications and/or mesh radio technology (depending on location) provided by a number of communication services providers (see Figure 4). The DCC will not store consumption data from customers.
19. At present different communication infrastructures other than the DCC can be utilised by suppliers for smaller non-domestic customers. Suppliers can opt out from using the DCC service. In March 2015 DECC consulted²⁷ as to whether to remove this opt-out as it considered that it might restrict customers' ability to change suppliers. Based on the consultation responses it

²⁶ The DCC is contracted to develop, host and maintain a software application to allow messaging between DCC service users and customers' premises.

²⁷ DECC, [Consultation on non-domestic smart metering](#).

received, it has now preliminarily decided²⁸ to remove the opt-out subject to the results of a further consultation which concluded on 27th May 2016.

Figure 4: Main components of the smart metering system



Note

1 The DCC, a licensed body established by the Department and regulated by Ofgem, is responsible for two-way communications and the transfer of data between smart meters and energy suppliers, network companies and other authorised third parties. The DCC's data services provider is contracted to develop, host and maintain a software application to allow messaging between DCC service users and consumers' premises; and the communications service providers will provide a wide area network and design, procure and own communications hubs, which will be provided to energy suppliers.

Source: National Audit Office.

20. Another body, Smart Energy GB, has been created and is funded by energy suppliers through obligations in their supply licences to engage customers on smart meters on behalf of suppliers. Its role is to help domestic households and smaller non-domestic customers to understand the advantages of installing and using smart meters.

Data access and privacy frameworks

21. The roll-out of smart meters and the implementation of the communication infrastructure operated by the DCC will allow customers, suppliers and other parties to access energy consumption data at different levels of granularity. Consumption data is stored on the smart meter itself in half-hourly increments.
22. DECC consulted on a framework for smart metering data access and privacy between April and June 2012 and the outcome of the consultation has been

²⁸ DECC's preliminary conclusion was that the DCC opt-out policy was no longer appropriate, particularly as it appeared opted-out meters could not deliver the policy aims of interoperability and easier switching. Further, there was no firm evidence received of an alternative provider coming forward to deliver an equivalent service to the DCC. [Government response to the March 2015 consultation on non-domestic smart metering: the DCC opt-out, 21 April 2016](#), paragraphs 12-13, page 7.

implemented into the Smart Energy Code and the licences of suppliers and network operators.²⁹

23. Domestic customers will be able to access their own consumption data in three different ways:
 - (a) directly through the in-home display provided with the smart meter (see above);³⁰
 - (b) by connecting additional devices to the Home Area Network (eg through a gateway device in the home that can route data via the internet to a smart phone or PC); and
 - (c) by requesting information from suppliers (eg through the Midata programme or via a smart phone).

24. Customers will have control over how their energy consumption data is used, except where this is required for billing or for other regulated purposes. In particular, suppliers:
 - (a) will only be able to use their own customers' energy consumption data for marketing purposes where the consumer has given explicit consent to this;
 - (b) will have to give domestic consumers the chance to object if the supplier wishes to access energy consumption data relating to a period of less than a month (opt-out consent)³¹;
 - (c) will only be able to access data relating to periods of less than one day (the most detailed level of data, including to half-hourly data) if the domestic customer has given explicit consent to it (opt-in consent);
 - (d) will have to give non-domestic customers the chance to object if the supplier wishes to access energy consumption data relating to a period of less than a month, including half-hourly data (opt-out consent).³²

25. Network operators will be able to access energy consumption data relating to periods of less than one month (including half-hourly data) from all domestic customers without customer consent, provided that:

²⁹ DECC (April 2012), [Smart Metering Implementation Programme, Data access and privacy, Consultation document](#).

³⁰ SLC 51 (electricity) and SLC 45 (gas) require suppliers to offer domestic customers an in-home display.

³¹ SLC 47.5(b)(ii) permits opt-out consent for domestic customers if at least seven days have elapsed from the date on which notice was given, no objection having been received.

³² SLC 47.17A(b)(i) permits opt-out consent for microbusiness customers if at least seven days have elapsed from the date on which notice was given, no objection having been received.

- (a) the data is only used for regulated purposes (eg developing and maintaining an efficient, coordinated and economical network etc);
 - (b) they aggregate or otherwise treat the data so that it can no longer be associated with a domestic customer at an individual premises;³³ and
 - (c) plans relating to point (b) have been submitted to, and approved by Ofgem.
26. Domestic customers will be able to share their energy consumption data with third parties, such as switching sites and energy services companies, if they choose to do so. Where third parties access energy consumption data remotely via the DCC, arrangements have been put in place through the Smart Energy Code to protect customers. In particular, third parties will be required to obtain explicit (opt-in) consent from customers before requesting data via the DCC.

Challenges of the roll-out programme as currently implemented

27. Our own analysis and the responses submitted by parties have identified a number of challenges³⁴ to the wider roll-out of smart meters. These include issues relating to data access, communication challenges, interoperability, effectiveness of a supplier-led vs DNO-led roll out, and suppliers' access to half-hourly consumption data. We discuss these below. Some of these challenges were also discussed during hearings and staff meetings with energy suppliers following the publication of our provisional findings.

Access to and use of half-hourly data for settlement

28. In our provisional findings, we noted there were currently no concrete proposals for using half-hourly consumption data in the settlement of domestic and microbusiness electricity customers, even after the full roll-out of smart meters.³⁵ We considered that this might distort suppliers' incentives to innovate and bring in new products and services such as time-of-use tariffs, which reward customers for shifting consumption away from peak periods.³⁶
29. Further, as discussed in Section 3 above, under current licence conditions put in place by DECC, suppliers will not be able to access half-hourly consumption data for their domestic customers without their explicit consent. We note

³³ DECC (April 2012), [Smart Metering Implementation Programme, Data access and privacy, Consultation document](#).

³⁴ See House of Commons Energy and Climate Change Committee, [Smart meters: progress or delay? Ninth Report of Session 2014-15](#), p18.

³⁵ [Provisional findings report](#), paragraph 8.278.

³⁶ [Provisional findings report](#), paragraph 8.279.

that mandatory half-hourly settlement will require access to half-hourly consumption data and consider this issue in greater detail in our consideration of the remedy relating to the introduction of half-hourly settlement for domestic and microbusinesses electricity customers.³⁷

Data communication challenges

30. Some suppliers have raised concerns about the 97.5% or higher wider area communication network (WAN) coverage required by DECC and think that the target is not achievable.³⁸ If suppliers are unable to access consumption data remotely from smart meters over the WAN, they will have difficulty providing customers with accurate, up-to-date billing information.³⁹
31. Similarly, if the smart meter in a particular home is unable to send data to the Home area network, that customer's ability to access up-to-date billing and consumption data will be affected.⁴⁰ According to the House of Commons Energy and Climate Change Committee,⁴¹ this problem is more likely to affect tower blocks and other multiple occupancy buildings where smart meters are 'unable to communicate to each other'.⁴²

Interoperability

32. As discussed above, smart meters installed in domestic properties need to comply with SMETS technical specifications. Currently there are two types of smart meters that can be installed by suppliers: SMETS 1 and SMETS 2. SMETS 1 meters have been installed during the foundation stage and will continue to be installed as part of the mass roll-out.
33. When domestic customers with SMETS 1 meters switch suppliers, they might find that the new supplier may be unable to obtain a remote reading from the smart meter installed by the previous supplier if they use a system that is not compatible with that meter. This might mean that customers' meters lose their smart functionality, or that they have to replace the smart meter. EDF Energy and other suppliers have mentioned the issue of interoperability of SMETS 1 smart meters in hearings.

³⁷ See section 5 of the Provisional Decision on Remedies, Framework for effective competition.

³⁸ See House of Commons Energy and Climate Change Committee, [Smart meter roll-out, Fourth report of Session 2013-14](#), p26, paragraph 56.

³⁹ See House of Commons Energy and Climate Change Committee, [Smart meter roll-out, Fourth report of Session 2013-14](#), p25, paragraph 52.

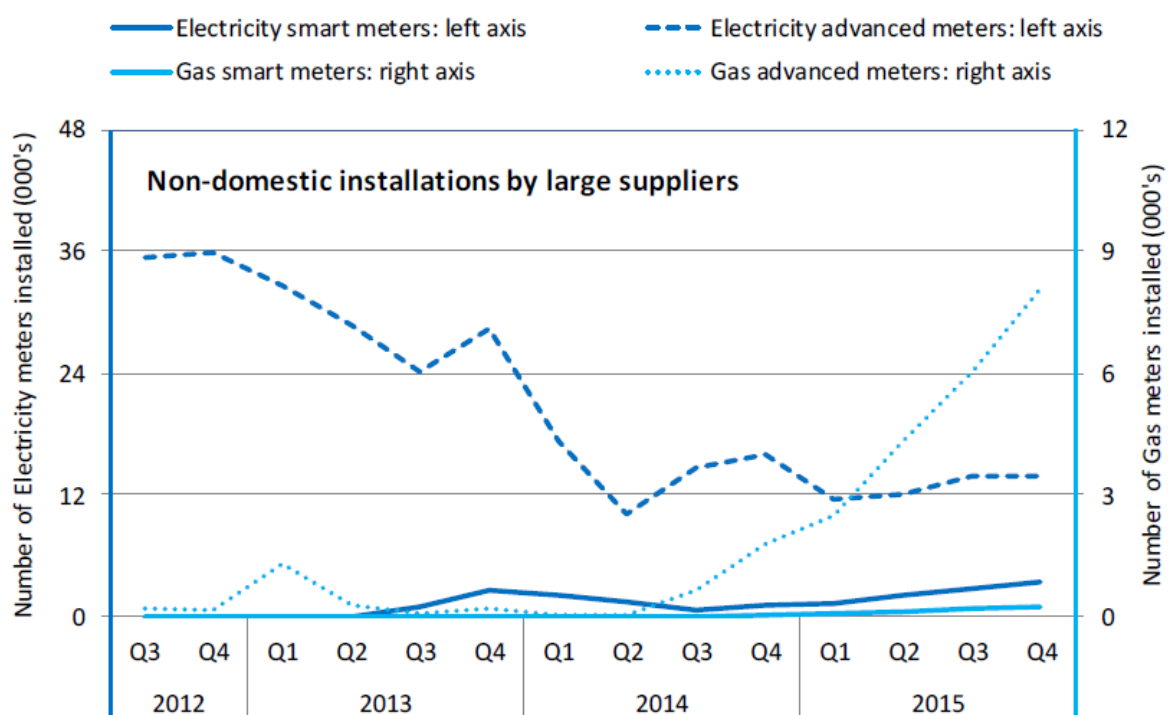
⁴⁰ See House of Commons Energy and Climate Change Committee, [Smart meter roll-out, Fourth report of Session 2013-14](#), p25, paragraph 52.

⁴¹ See House of Commons Energy and Climate Change Committee, [Smart meters: progress or delay? Ninth Report of Session 2014-15](#), pp8-9.

⁴² *ibid*, p8, paragraph 11.

34. Although the DCC is planning to ensure SMETS 1 meters are adopted into the DCC (making them fully interoperable between suppliers), the timelines for this remain unclear.^{43,44} In a hearing with the CMA, Utilita set out that different smart meter system operators can ensure interoperability of SMETS 1 meters between them, without requiring enrolment into the DCC, and that the number of suppliers for which this is possible is increasing.⁴⁵
35. SMETS 2 meters, due to be installed as part of the mass roll-out, are expected to work with the DCC infrastructure and should therefore not have any interoperability problems.
36. The problem of interoperability appears to be particularly acute in the smaller non-domestic segments (see Figure 5 below) where large proportions of advanced pre-SMETS (especially electricity) meters have been installed. As discussed earlier these count towards suppliers' roll-out targets and there are no plans to replace them.

Figure 5: Number of smart and advanced meters installed by large energy suppliers in smaller non-domestic sites, by fuel type and quarter



Source: DECC (March 2016), [Smart Meters, Great Britain, Quarterly report to end December 2015](#), p13.

37. The Federation of Small Businesses submitted to the House of Commons Energy and Climate Change Committee that it sees interoperability as a key

⁴³ We understand that the date of enrolment of SMETS 1 meters into the DCC infrastructure is yet to be determined and the DCC is considering options and expects to [consult in mid-2016](#).

⁴⁴ See House of Commons Energy and Climate Change Committee, [Smart meters: progress or delay? Ninth Report of Session 2014-15](#), p10.

⁴⁵ Hearing with Utilita, 27 April 2016

issue. It was concerned that protections around interoperability did not apply to the non-domestic sector and that this may affect its members' ability to switch to a new supplier if that supplier was unable to support their meter.⁴⁶ Similar concerns were raised by Haven Energy. After August 2017, the installation of advanced meters will no longer count towards the supplier's obligation⁴⁷ so there appears to be little scope for a remedy in this area. Further, we note DECC's minded-to position to remove the DCC opt-out for smaller non-domestic customers (see paragraph 15 above).

Effectiveness of a supplier-led vs distribution network operator-led roll-out

38. A few observers, including the House of Commons, have raised doubts as to whether a supplier-led roll-out is cost-effective.⁴⁸ As the roll-out proceeds street by street on a regional basis, different suppliers will be sending their engineers on the same street several times to install smart meters in different customers' premises. Rolling out smart meters through the distribution network operators could in theory have reduced costs. Further, a supplier-led model can create conflict of interests and interoperability issues.
39. As discussed above, suppliers are required to provide information on how to use smart metering equipment and information on energy efficiency at the time of installing a smart meter. They might, however, not have the incentives to do so. Some respondents to our consultation on whether customers needed more or better information or guidance on how their new smart meters would work⁴⁹ noted the conflict of interest and provided some evidence that the information currently provided by suppliers might not be sufficient:
- (a) Citizens Advice⁵⁰ said that the Smart Metering Installation Code of Practice (SMICoP) required installers to not only install but also demonstrate and explain this equipment to ensure that consumers were able to realise the benefits of smart meters. However, during the foundation stages of the smart meter roll-out the Citizens Advice consumer service has continued to hear from consumers with experiences that demonstrate that this approach has been lacking. This includes consumers who describe being left with devices they do not understand, requesting explanations not only of how to operate them but what they are. Further, it added that there was little evidence of tailoring for energy efficiency

⁴⁶ See House of Commons Energy and Climate Change Committee, Smart meter roll-out, Fourth Report of Session 2013–14, p30.

⁴⁷ Except where a contract to install such meters was in place before April 2016.

⁴⁸ See Smart meters: progress or delay? p14.

⁴⁹ [Energy market investigation, Notice of possible remedies](#), p20.

⁵⁰ [Citizens Advice response to provisional findings and Remedies Notice](#), pp24–25.

advice given by suppliers and no consideration was given to the condition of the property.

- (b) National Energy Action expressed concerns that within the current regulatory landscape opportunities might be missed to use the roll-out (and the face-to-face in-home contact with a customer to install a smart meter) to deliver a tailored experience that addressed the customer's specific smart metering and energy needs. These concerns particularly related to vulnerable customers who would require more targeted and intensive support to overcome their evidenced disengagement in the energy market and address issues around age, health, disability, visual and hearing impairment, low literacy and numeracy and English language skills. These points are supported by DECC's findings from its early learning research on smart metering which concluded that certain categories of consumers (including low-income, prepayment and those vulnerable due to age, literacy etc) would benefit from tailored, follow-up (including face-to-face) support to ensure they were able to fully realise the benefits of smart meters.⁵¹
 - (c) The Ombudsman said that the benefits of smart meters, such as energy savings brought about by promoting behaviour change, were not being clearly communicated to consumers; and that consumers assumed that smart meters would automatically reduce bills when in reality, consumer behaviour would be the key factor in bill reduction.⁵²
 - (d) The Behavioural Insights Team noted that as smart meters were installed by suppliers they had no incentive to flag that they could make switching easier.⁵³
40. The House of Commons received submissions that within a year of the installation of smart metering equipment, almost a third of in-home displays were being switched off by customers.⁵⁴
41. As discussed above, the supplier-led approach has also led to a number of interoperability issues. SMETS 1 meters installed by a previous supplier might lose their smart functionality or need to be replaced when a customer switches to a new supplier. These interoperability issues would have not

⁵¹ [National Energy Action response to Remedies Notice](#), p6, paragraphs b-c.

⁵² [Summary of hearing with the Energy Ombudsman held on 27 November 2014](#), p5, paragraph 25.

⁵³ [The Behavioural Insights Team response to Remedies Notice](#), pp5-6.

⁵⁴ See House of Commons Energy and Climate Change Committee, [Smart meters: progress or delay? Ninth Report of Session 2014-15](#), p15, paragraph 33.

arisen if smart meters were being installed by distribution network operators instead of suppliers.

42. Notwithstanding these arguments, we consider that transferring responsibility for the roll-out from suppliers to distribution network operators would be impractical at this stage, and lead to significant delays to roll-out.