

Report by the Comptroller and Auditor General

Department for Business, Energy & Industrial Strategy

Rolling out smart meters

HC 1680 SESSION 2017-2019 23 NOVEMBER 2018

The smart metering system the Department intends to create

The system will link smart devices in consumers' homes to energy suppliers and other organisations, via a central data and communications infrastructure



Note

1 In the Department's intended system, smart appliances will connect to the in-home smart metering set-up via a Consumer Access Device (CAD). These appliances can then be switched on and off automatically to take advantage of times when electricity is available at a discount.

Source: National Audit Office analysis



Key facts

End of 2020

date by which energy suppliers must have taken all reasonable steps to install smart meters in all homes and small businesses

70%-75% 39 million

proportion of meters energy suppliers say they expect to replace with smart meters by the end of 2020

number of meters that have not yet been replaced with smart meters as of June 2018

12.5 million number of 'SMETS1' meters installed. The Department for Business, Energy & Industrial Strategy's (the Department's) original expectation was that these would be limited to 5.4 million ('SMETS' stands for Smart Metering Equipment Technical Specifications). Around 70% proportion of SMETS1 meters that currently lose smart functionality when consumers switch supplier. The Department intends to resolve this issue. £11.0 billion expected cost of the programme according to the Department's 2016 analysis. £16.7 billion expected benefits from the programme according to the Department's 2016 analysis, implying net benefits of £5.7 billion. £18 per year amount the Department expects dual fuel households will save on average because of smart meters. This is the combined result of smart meters adding £31 of cost but also creating £49 of cost savings. 2.1 million estimated number of households that do not recall being offered

advice on how to save energy when their smart meter was installed.

Summary

1 Smart meters can record energy consumption in each half-hour period and communicate with energy suppliers and network companies. Because traditional meters are incapable of doing this, replacing traditional meters with smart meters is a necessary step towards enabling a future 'smart energy system': a system that uses information and communications technology to control electricity generation and use in near real-time to provide a more reliable and cost-effective electricity system. The government expects this to have significant economic benefits in the long term as renewable energy and electric vehicles become more widespread. In addition to enabling a smart energy system, the government sees smart meters as a way of reducing energy suppliers' costs and encouraging consumers to pay more attention to the energy they use, reduce energy consumption and increase competition in the market. (Figure 1 overleaf).

2 In 2008, the Labour government announced its intention to mandate energy suppliers to install smart meters for their customers. Subsequent Coalition and Conservative governments have affirmed their commitment to the Smart Metering Implementation Programme. Although energy suppliers British Gas, First Utility and Utilita began installing smarter type meters on a voluntary basis in 2008–2009, these meters had varying functionality and data communications standards. The government decided that it was necessary to intervene, to set minimum standards for functionality and ensure that smart meters would support a future smart energy system. In addition, it wanted to ensure that energy suppliers would be able to operate meters installed by their competitors, rather than have to replace them when customers switched supplier.

3 To make smart meters interoperable between energy suppliers, the government proposed to set new minimum standards for how they should work, and to connect them to a central data and communications infrastructure (the Data and Communications Company, or DCC). However, to accelerate the rollout, in 2012 it encouraged suppliers to start or continue installing smart meters before the central infrastructure was built. It did this so that consumers could benefit sooner from accurate billing and greater visibility of their energy use, and energy suppliers could prepare their business systems for mass rollout of smart meters.

4 In November 2012, the Department of Energy & Climate Change (the Department)¹ imposed a legal obligation on energy suppliers to take all reasonable steps to install smart meters in all homes and small businesses in Great Britain by 2019. In 2013, this deadline was pushed back to 2020. Ofgem will determine whether suppliers have met the obligation after 2020.

¹ Throughout this report, we use "the Department" to refer to both the former Department of Energy & Climate Change, and its successor, the Department for Business, Energy & Industrial Strategy, which was formed in 2016.

Figure 1

The programme's policy aims

Smart meters are meant to help the Department for Business, Energy & Industrial Strategy (the Department) achieve two of its strategic objectives



Source: National Audit Office analysis of Department for Business, Energy & Industrial Strategy impact assessments

5 Some energy suppliers started installing smart meters in significant numbers in late 2012. These meters comply with the first version of the government-defined smart metering standards (the Smart Metering Equipment Technical Specifications version 1, or SMETS1). Energy suppliers were responsible for commissioning their own separate communications infrastructures for SMETS1 meters, prior to them being enrolled into the central communications infrastructure. The government's intention was that SMETS1 meters should only be installed until SMETS2 meters, which are designed to be interoperable from the point of installation, are ready to be deployed.

6 Although SMETS1 and SMETS2 meters appear similar to consumers, they differ in several respects. Currently, SMETS1 meters often lose smart functionality when consumers switch supplier because the new supplier is often unable to communicate with the meter. The Department stated in 2012 that SMETS1 meters would eventually be connected ('enrolled and adopted') into the DCC infrastructure to overcome this issue, and a solution for the first of three sets of SMETS1 meters is currently being tested. By contrast, SMETS2 meters are designed to be interoperable between energy suppliers from the point of installation. The Department also incorporated some additional functionality into the SMETS2 meter specification compared with SMETS1 to provide network operators with more information for managing the network, and give energy suppliers and consumers additional options for switching devices on and off to save money.

7 The Department has overall responsibility for the programme. It has taken, and continues to take, decisions that determine the high-level design of the smart metering system and the way smart meters are rolled out (**Figure 2** overleaf). Numerous private companies are responsible for implementing and operating parts of this system. The Department has to coordinate these organisations. They are incentivised through a regulatory framework that includes licences, codes and economic regulation of the monopoly company in charge of the DCC infrastructure (Smart DCC). This regulatory framework is enforced by the energy market regulator, Ofgem.

The Department forecast in 2013 and 2016 that the programme would require 8 £11 billion of investment in installations, equipment and systems.² These costs will be met by energy companies rather than the government, then recovered from consumers through higher energy prices. The costs are equivalent to £374 per dual fuel household,³ but these costs are expected to be more than offset by reduced energy consumption and operational cost savings for the industry. The Department assumes the latter will be passed on to consumers, although it has no way of assuring that this happens. The combination of industry cost savings and energy savings for consumers are expected to result in lower energy bills overall: according to the Department's 2016 modelling, households will save £18 a year on average between 2013 and 2030. Energy savings will also create environmental benefits for society. In 2013, the Department forecast that the total benefits of the programme would be £17.7 billion, creating net benefits of £6.7 billion. In 2016, it updated its analysis and forecast net benefits of £5.7 billion. The costs of the programme will mainly be incurred during the rollout phase, whereas most of the benefits will be spread over subsequent years (Figure 3 on page 11). The benefits of the programme are therefore more uncertain than its costs. There is already some evidence that costs were underestimated in the 2016 analysis.

² Unless otherwise stated, we use 2011 prices throughout this report because that is the price base the Department uses in most of its published analysis of the programme.

A dual fuel household has one gas and one electricity meter.

Figure 2

Key smart metering decisions taken by government

Date	Decision
Oct 2008	The government announces its intention to mandate the rollout of gas and electricity smart meters to all households in Great Britain as part of the passage of the 2008 Energy Bill.
Dec 2009	The Department for Business, Energy & Industrial Strategy (the Department) decides on a smart metering delivery model whereby energy suppliers (rather than network operators) will be responsible for procuring, installing and operating smart meters; and data and communications services will be provided by a central Data and Communications Company (DCC).
Jul 2010	Ofgem and the Department set out a high-level plan for the smart metering programme for consultation in a draft Prospectus.
Mar 2011	Ofgem and the Department publish their response to the Prospectus consultation. This set out a staged approach to rollout, which included an initial phase where first generation (SMETS1) meters, that met minimum standards and functionality, would be rolled out ahead of the main rollout phase involving second generation (SMETS2) meters.
Apr 2011	The Department starts the first stage of smart metering.
Apr 2012	The Department designates the first version of the Smart Metering Technical Specifications.
Nov 2012	The Department modifies energy suppliers' licences to impose an obligation on them to take all reasonable steps to install smart gas and electricity meters in all homes and small businesses in Great Britain by 2019.
Jan 2013	The Department publishes the draft second version of the Smart Metering Equipment Technical Specifications (SMETS).
Apr 2013	Ofgem designates the Smart Metering Installation Code of Practice (SMICoP). The Code regulates the process that energy suppliers must follow when installing meters in consumers' homes.
Jun 2013	The Department required energy suppliers to create a central delivery body to raise public awareness of smart meters (Smart Energy GB). This was set up in June 2013.
Sep 2013	Following a competitive tendering process, the Department appoints the DCC and its data and communications service providers.
Sep 2013	The Department designates the first version of the Smart Energy Code (SEC) – an agreement that defines the rights and obligations of industry parties involved in smart metering.
Mar 2015	The Department directs the DCC to assess the feasibility of options for enrolling SMETS1 meters into its system.
Jul 2015	The Department proposes an end date of August 2017 after which the installation of SMETS1 meters would no longer count towards suppliers' rollout obligations. The Department subsequently extends this end date four times: to October 2017 in December 2015; to July 2018 in August 2017; to October 2018 in January 2018; and to December 2018 in July 2018.
Apr 2018	The Department consults on options to enrol and adopt some SMETS1 meters into the DCC. It published its response to the consultation in October 2018.
Note 1 SMETS stands for	Smart Metering Equipment Technical Specifications.

Source: National Audit Office analysis

Figure 3

Timing of the expected costs and benefits of the programme, as estimated by the Department for Business, Energy & Industrial Strategy (the Department) in 2016

The costs of the programme become certain before its benefits

	Costs	Benefits	
Short term (2012–2020)	Meters, other equipment, and installations	Energy savings	
	£6.5 billion (of which only £2.1 billion will be paid for by energy suppliers before 2021) ¹	£1.5 billion	
		Industry cost savings	
		£2.2 billion	
	Data and Communications Company (DCC) costs	Increased competition between suppliers	
	£1.0 billion	Unquantified	
	Energy supplier IT costs		
	£0.5 billion		
	Other costs		
	£0.8 billion		
	Total costs that become certain in the short term	Total benefits that become certain in the short term	
	£8.8 billion (of which only £4.3 billion will be paid for by energy suppliers before 2021) ¹	£3.7 billion	
Medium term (2021–2030)	DCC costs	Energy savings	
	£1.0 billion	£5.2 billion	
	Energy supplier IT costs	Industry cost savings	
	£0.5 billion	£7.8 billion	
	Other costs	Increased competition between suppliers	
	£0.7 billion	Unquantified	
	Total costs that become certain in the medium term	Total benefits that become certain in the medium term	
	£2.2 billion	£13.0 billion	
Long term	Smart energy system		
(2021–2050)	The notential henefits of a smart energy system were not included in the programma's value for manay eace		

The potential benefits of a smart energy system were not included in the programme's value-for-money case. These are estimated at up to £38 billion by 2050, but require further investments (beyond smart meters) of up to £18 billion.

Notes

1 Energy suppliers are using finance to spread the costs of meters, other equipment and installations across the lifetime of the equipment. In this table, we show these costs become certain before 2021 because that is when the meters will be purchased and installed. However, due to energy suppliers' financing arrangements, consumers will not have to pay for all of these costs before 2021.

2 The figures in this table are based on the Department's latest (2016) estimates. Actual costs and benefits are likely to differ from these benefits (as discussed in Part Two). All values are in 2011 prices and discounted to a base year of 2016. Due to rounding, not all totals sum.

Source: National Audit Office analysis of the Department's 2016 cost-benefit analysis for the programme

9 We previously reported on the Smart Metering Implementation Programme in 2011 and 2014.⁴ This report examines:

- progress with rolling out smart meters (Part One);
- the programme's value-for-money case (Part Two); and
- the government's approach to monitoring, reporting, assurance and risk management for the programme (Part Three).

Our audit approach is set out in Appendix One and our methods are set out in Appendix Two.

Key findings

Progress with rolling out smart meters

10 The rollout of SMETS2 meters started later and more slowly than the Department expected. In March 2011, the Department decided it would take a staged approach to rolling out smart meters. In the first stage, it encouraged energy suppliers to install SMETS1 meters. At that time, it expected that suppliers would be able to move onto the second stage, installing SMETS2 meters, by June 2014. In practice, the first SMETS2 meter was installed in July 2017. It took another 10 months for the first 10,000 SMETS2 meters to be installed. The delays are partly attributable to the requirements and technical specifications for the DCC and SMETS2 becoming more complex than the Department or Smart DCC anticipated. Another significant cause of delay is that Smart DCC took longer than planned to resolve the defects in its system to the satisfaction of the Department and energy suppliers. As of the beginning of November, 109,000 SMETS2 meters had been installed (paragraphs 1.7, 1.8, 1.14 to 1.18, and Figure 8).

⁴ Comptroller and Auditor General, Department of Energy & Climate Change, Preparations for the roll-out of smart meters, Session 2010-11, HC 1091, National Audit Office, June 2011; Comptroller and Auditor General, Department of Energy & Climate Change, Update on preparations for Smart Metering, Session 2014-15, HC 167, National Audit Office, June 2014.

11 Energy suppliers have installed over 7 million more SMETS1 meters than the Department planned, presenting risks and challenges for the programme. The unintended consequence of the Department's staged rollout strategy, combined with delays implementing SMETS2 and the DCC, was that 12.5 million SMETS1 meters were installed while SMETS2 was being developed, compared with the 5.4 million expected in the 2013 business case. The mass rollout of SMETS1 meters has enabled consumers to experience some of the benefits of smart meters earlier than they otherwise would have. However:

- Currently, around 70% of SMETS1 meters 'go dumb' when consumers switch supplier because the new supplier is unable to communicate with the meter. As of the end of June 2018, around 943,000 smart meters were operating in dumb mode. This means that many consumers will face a choice between remaining with a more expensive tariff or losing the benefits of their smart meter. This risks undermining the government's aim of increasing the number of consumers switching energy supplier to ensure that consumers get value for money.
- SMETS2 meters have some additional functions that SMETS1 meters lack. The Department says that SMETS1 meters can be used to achieve the same benefits as SMETS2 meters but:
 - network companies have said it is uncertain whether SMETS1 meters can provide the full network benefits provided by SMETS2 meters; and
 - the additional options provided by SMETS2 meters for switching devices on and off may become important to consumers in future, because they may help consumers with heat pumps and electric vehicles to save money.

(Paragraphs 1.25 to 1.29, 1.32, 2.21, and Figure 11).

12 The Department has not yet attempted to enrol SMETS1 meters within the DCC infrastructure. The target dates for this have been pushed back, and it is not certain that it will work as intended. The Department has always planned on enrolling SMETS1 meters to make them fully interoperable. But this is technically challenging and the solutions are still being tested or in development. The target start date for enrolment has been pushed back from November 2018 to May 2019 and there is a risk of further delay. The Department's assumption for the purposes of cost–benefit modelling is that 2% of the first two thirds of SMETS1 meters will not be successfully enrolled but some stakeholders told us that significantly more could fail. Furthermore, the Department has not yet decided if it will attempt to enrol all makes of SMETS1 meter. Therefore, the Department should be cautious about suggesting that the successful enrolment and adoption of all SMETS1 meters is inevitable (paragraphs 1.10, 1.30 and 1.31, and 2.37 to 2.39).

13 It may take years before we know if the SMETS2 system works in its entirety. While the core communications infrastructure has been implemented and shown to work with a range of meters, it may take years before we know if the SMETS2 and DCC system works in its entirety. The system consists of many interacting components, several of which are still being tested or have not yet been deployed or developed.

- As yet, no suppliers are offering prepayment functionality to those customers who have had SMETS2 meters installed. One in six customers prepay for their electricity. Until March 2019, energy suppliers can offer these customers SMETS1 meters instead, which have working prepayment functionality.
- The devices suppliers are currently deploying can only connect smart meters to in-home displays in up to 70% of premises. In spring 2019, the Department expects the industry to begin rolling out new technology that is intended to increase this to between 95% and 96.5% of premises. The technology that will be required for the final 3.5% to 5% of premises is still being developed.
- Only 3,000 of the 109,000 SMETS2 meters deployed so far have been installed in the North of England and Scotland because of problems integrating smart meters with the DCC infrastructure in those regions.

(Paragraphs 1.18, 1.22 to 1.24, and Figures 9 and 10).

14 The number of smart meters installed by 2020 will fall materially short of the Department's original ambitions. The Department originally aimed for all consumers to have a smart meter by 2020. Suppliers' licences require them to submit ambitious rollout plans to Ofgem annually, which must either aim for 100% rollout by 2020 or explain why this cannot reasonably be achieved. In the most recent set of plans accepted by Ofgem, energy suppliers have said they will only be able to install smart meters in around 70% to 75% of homes and small businesses by 2020. Suppliers attribute this to limited consumer interest and delays to SMETS2. Actual rollout by 2020 may fall short even of these estimates if the DCC infrastructure encounters further problems or if suppliers encounter further difficulty persuading consumers to accept installations. The Department's calculations suggest that each year of delay in completing the rollout reduces net benefits by around £150 million. This is because a slower rollout results in both costs and benefits being deferred (paragraphs 1.6, 1.36 and 1.37; and Figure 12).

15 The Department decided it would accelerate the rollout without making an economic assessment of the implications of this strategy. The Department told us its strategy of accelerating the rollout, by encouraging suppliers to install SMETS1 meters, allowed consumers and industry to experience some of the benefits of smart meters early. But the most significant benefits enabled by smart meters are expected to be achieved in the long term and therefore did not require an urgent rollout. These 'smart energy system' benefits will be realised between 2020 and 2050, subject to significant additional investments being made in smart power technology (paragraph 1.33 and Figure 2). **16** The 2020 target increases risk to the value for money of the programme. Because the start of the SMETS2 rollout was significantly delayed, the Department's sticking to its target of ensuring that all homes are offered a smart meter by 2020 puts significant timetable pressure on the programme. This increases the risk of cost escalation and/or technology being rolled out before defects have been addressed, both of which would undermine the value for money of the programme for consumers. The Department's view is that without maintaining its clear commitment to the 2020 end date, energy suppliers would have continued to underinvest in the rollout while repeatedly arguing for more time (paragraph 1.35).

The programme's value-for-money case

The costs of the programme have increased by at least £0.5 billion since 17 the Department's last forecast and could increase further. The Department's 2016 cost-benefit analysis did not include the costs of the technical solutions for providing smart meters to the final 3.5% to 5% of properties because of lack of available information. The latest information suggests that this will add at least £0.2 billion to programme costs. Smart DCC is currently forecasting that its costs to 2025 will be £0.3 billion higher than the Department expected. The £0.5 billion increase in costs is equivalent to £17 per dual fuel household (in total, rather than annually) on top of the £374 per dual fuel household implied by the Department's 2016 cost-benefit analysis. This is a conservative estimate. It does not include the direct marketing and consumer engagement costs energy suppliers are incurring to persuade consumers to accept smart meter installations, which for some suppliers are significant. Costs will increase further if SMETS1 meters require replacement, or if the cost of installing smart meters, which in 2017 was 50% higher than the Department forecast, does not come down (paragraphs 2.23 to 2.39; and Figures 16, 17 and 18).

18 On the benefits side, it is currently uncertain whether the industry cost savings forecast by the Department will materialise. The Department expects the industry to save money from smart meters and pass these savings on to consumers, offsetting around two-thirds of the estimated £11 billion cost of the rollout. The cost savings are expected to come from various changes including energy suppliers being able to reduce the size of the call centres they need to help customers (£1.2 billion of savings), and network companies being able to use data from smart meters to manage their operation of the network more efficiently (£0.9 billion of savings). However, some of these prospective savings may yet fail to materialise. Energy suppliers and network companies will need to achieve savings within a mixed SMETS1 and SMETS2 system, which will be more difficult than achieving those savings in a system that is almost entirely SMETS2-based (with only 5.4 million SMETS1 meters), as the Department originally envisaged (paragraphs 2.14 to 2.21, and Figure 18).

19 Even if energy suppliers do reduce their costs, the Department has no way of proving that cost reductions are passed on to consumers. The Competition and Markets Authority (CMA) has investigated competition in the energy market and told us that, although suppliers charge higher prices than they would in a perfectly competitive market, it is reasonable to believe that energy suppliers will pass on cost savings from smart meters to consumers. However, the Department has no way of assuring consumers that this is happening in practice (paragraph 2.17).

20 Most consumers who have smart meters are satisfied with them, but most suppliers have found it harder and more expensive than expected to arrange installations with consumers. According to a Departmental survey, 74% of consumers who have received smart meters are satisfied with them and, according to Smart Energy GB, 48% of consumers say they would like to get them in the next six months. However, in practice, most energy suppliers have found it difficult to arrange installations with consumers because even customers who say they want a smart meter may treat it as a relatively low priority. The Department says it is facilitating the sharing of best practice between energy suppliers to help them secure installations. Some suppliers told us they are having to spend significant amounts on consumer engagement and direct marketing activity. If this expenditure were to be replicated across the energy market, we estimate that suppliers could spend around £200 million to increase consumer demand for installations. The Department did not include these costs in its business case (paragraphs 1.19, 1.20, 2.8, 2.33 and 2.34).

21 An estimated 2.1 million of the households that have been provided with a smart meter do not recall being offered advice on saving energy. Evidence from trials of smart meters showed that giving consumers advice on how to save energy can boost the savings they achieve when using smart meters by up to two thirds. Although energy suppliers have an obligation to offer this advice at the point of installation, it is frequently not offered. The Department has undertaken work to enable the sharing of good practice in this area, and since the beginning of 2018 performance has been improving, particularly among the worst-performing suppliers. Although this is a positive step, improvements will need to go much further if the Department is going to maximise energy savings: according to the most recent data, large energy suppliers are still failing to provide advice to some 27% of consumers (paragraph 2.7 and Figure 15).

22 The Department has tried to 'future proof' the smart metering system for the next 15 years, but it is difficult to predict what will happen over that period. The Department assumes that smart meters will not be replaced for at least 15 years. It recognises that, over that period, there is likely to be innovation in the range of smart household devices on offer to consumers. The Department has therefore taken steps to future-proof the smart metering system, for example by ensuring that smart meters will be able to send their data to other (newly invented) devices via a consumer access device.⁵ However, it is difficult to predict what innovation will happen over the next 15 years, and there is inevitably a residual risk that the Department's smart metering system could be a factor that limits the range of 'smart home' benefits consumers can enjoy in future (paragraphs 3.15 and 3.16).

5 A consumer access device takes real time energy and pricing data from smart meters and uses it to help control devices in the home (for example, running appliances when electricity is cheap).

The government's management of the programme

23 The Department's monitoring of the programme is extensive, although we have identified some important gaps in its monitoring information. The programme is funded with consumers' money rather than from government spending, and this makes it even more important for the Department to adopt high standards of cost monitoring. The Department regularly collects information on costs, consumer experience and rollout progress, and it has comprehensively assessed the costs of the programme several times. However, the last such assessment was in 2016, and so the total costs of the programme are currently unclear. In addition, it is not collecting data on energy suppliers' costs of marketing smart meters, and it is not systematically monitoring energy savings. The Department says it is planning on performing a new cost–benefit analysis in 2019 and analysing more information on energy savings (paragraphs 3.3 to 3.7).

24 The Department has taken an optimistic view of the risks and challenges presented by SMETS1 meters. Submissions from programme officials to the Department's board and ministers have consistently stated that SMETS1 meters will be enrolled onto the DCC in 2018 to solve interoperability problems. In the written submissions, we did not find any evidence of the Department acknowledging the difficulties of enrolment and adoption until March 2018, when it was described as "technically and commercially complex". In its external communications, the Department has stated that all smart meters will retain smart functionality when they are enrolled, and that this upgrade will begin by the end of 2018. In practice, the start of enrolment is expected to be delayed until May 2019 and for some smart meters it may not be successful (paragraphs 1.10, 3.8 to 3.10).

25 Compared with other consumer-funded energy schemes, HM Treasury has less oversight of the smart metering programme. HM Treasury approved the full business case in 2013. Since then, it has received updates on the programme from the Department and receives assurance reviews from the Infrastructure and Projects Authority. However, the Major Projects Review Group, a joint HM Treasury and Infrastructure and Projects Authority body, has not reviewed the programme since 2012. Furthermore, the Committee of Public Accounts recommended that all consumer-funded energy schemes should have an HM Treasury representative on the main responsible board. While the Department and HM Treasury have implemented this recommendation for other schemes, they have not done so for smart meters. This is because the Department considers the smart metering programme to be an industry change programme, not a consumer-funded energy scheme. Although the programme is being delivered by the industry, it has been designed and driven by the Department, and the Department's decisions affect consumer costs. Therefore, we do not consider there to be a compelling reason for HM Treasury to have less oversight of smart meters than of other consumer-funded energy schemes (paragraphs 3.11 to 3.14).

Conclusion on value for money

26 The Department acknowledges that, notwithstanding the industry and other bodies involved, it is responsible for the overall success of Smart Meters. While recognising the team's achievements so far, we urge them to make sure the team culture does not become defensive, and resistant to inconvenient truths.

27 The facts are that the programme is late, the costs are escalating, and in 2017 the cost of installing smart meters was 50% higher than the Department assumed. 7.1 million extra SMETS1 meters have been rolled out because the Department wanted to speed up the programme. The Department knows that a large proportion of SMETS1 meters currently lose smart functionality after a switch in electricity supplier and there is real doubt about whether SMETS1 will ever provide the same functionality as SMETS2. The full functionality of the system is also dependent on the development of technology that is not yet developed.

28 The facts summarised above, and many more, are not fatal to the viability and value for money of the programme. However, there are serious issues that need to be addressed if Smart Meters is to progress successfully and deliver value for money.

Recommendations

- 29 The Department should:
- **a** as part of its upcoming work to update its cost–benefit analysis, assess the value for money of leaving the 2020 deadline in place compared with adopting a new deadline;
- **b** over the course of 2019, clarify for the industry what the smart metering policy landscape will look like beyond 2020;
- **c** draw up contingency plans for maximising value for money in scenarios where the DCC and SMETS2 system encounters further delays or cost increases and SMETS1 meters are unable to enrol within the DCC;
- **d** commission an expert independent review of testing, focused on determining whether energy suppliers are testing a sufficient cross-section of smart metering set-ups and scenarios (including change of energy supplier and swapping smart metering equipment) to provide reasonable assurance that the SMETS2 system will work as intended for all consumers;

- e by early 2019, launch research to assess the potential impact of additional forms of energy efficiency advice and feedback to consumers, and consider whether new requirements should be introduced to support benefits realisation; and
- **f** systematically monitor the actual energy savings that smart meters achieve and continue to assess the delivery of key consumer engagement activities, intervening if necessary.
- **30** Ofgem should:
- **a** work with the CMA as part of its review of the prepayment price cap to understand the impact of SMETS1 meters on competition, and set out how issues will be addressed;
- **b** work with the Department to improve the transparency of DCC costs, both for price control and for public and parliamentary scrutiny; and
- **c** ensure, by March 2019, that no energy suppliers are falling materially short of their obligation to provide advice on energy efficiency.