



House of Commons
Energy and Climate Change
Committee

**Smart meters: progress
or delay?**

Ninth Report of Session 2014–15

*Report, together with formal minutes relating
to the report*

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The Energy and Climate Change Committee

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Summary

Smart meters, which allow energy suppliers to get remote electricity and gas readings from households and businesses using mobile phone-type signals and wireless technologies, should benefit customers through savings from energy usage and efficiency. In 2013 we first looked at the Government's programme to roll-out smart meters to 100% of UK homes and businesses by 2020. This inquiry reviewed the progress of the roll-out and we have been disappointed by the ongoing policy delivery challenges which the Government has failed to resolve:

- Technical communication problems with multiple occupancy and tall buildings which should have been resolved by now
- Compatibility problems between different suppliers and different meters
- A slow start to full engagement with the public on meter installation and long-term use
- A delay by the Government-appointed communications infrastructure company which has further set back confidence in the programme
- A reluctance to improve transparency by publishing the Major Project Authority's assessments on the smart meter programme

These policy problems are symptomatic of a national programme that the Government has left largely to suppliers and failed to drive forward effectively. Consequently, we do not believe that near-universal smart meter roll-out will be achieved by 2020. Without significant and immediate changes to the present policy, the programme runs the risk of falling far short of expectations. At worst it could prove to be a costly failure. The Government must urgently seek industry-wide solutions to the technical challenges that remain. It should also give serious consideration to whether it is possible to reduce costs to consumers by streamlining the roll-out of smart meters, perhaps through more active participation of network companies. For the Government to succeed with this nationwide project, it must now grip the reins and take a more active role to support the industry-led roll-out. Getting it right will eventually cut energy usage and bills for 30 million homes and businesses in the UK. Getting it wrong risks embarrassment for the Government through public disengagement with a flagship energy policy and a costly missed opportunity.

1 Introduction

1. Smart meters have the potential to bring great benefits to consumers and suppliers as well as improve the UK energy infrastructure. Smart meters allow energy suppliers to get remote electricity and gas readings from households and businesses using mobile phone-type signals and wireless technologies. The potential consumer benefits from smart meters include reduced energy bills through reduced energy consumption alongside energy efficiency. The roll-out of smart meters in the UK is due to take place between 2015 and 2020 with an estimated 53 million devices to be installed by energy suppliers in 30 million homes and businesses.¹ DECC estimates that the roll-out of smart meters will cost around £10.9 billion and these costs will be passed onto consumers.² Concerns have been raised about the lack of a budget cap for this programme.³ However, the Government expects the cost to be offset by expected savings of £17.1 billion, in part from energy efficiency.⁴ The roll-out of smart meters must be managed carefully if these benefits are to be achieved and costs are to be kept under control. The Government has chosen to have energy suppliers lead the roll-out of smart meters.⁵ There are two phases to the roll-out.

Phase 1: the foundation phase 2013–2015

2. Between 2013 and 2015, energy providers are undertaking installation trials to build and test business processes, and to establish what works best for consumers. The foundation phase uses a smart meter called SMETS 1 (Smart Metering Equipment Technical Specification). SMETS 1 was designated by the Secretary of State in December 2012, with minor amendments made to the specification in March 2014. Equipment installed in this phase must be compliant with SMETS 1 if it is to count towards suppliers' roll-out obligations.⁶ The Government is working with industry and consumer groups to prepare for the mass roll-out. This includes establishing a code of practice to ensure householder protection and setting up the data and communications infrastructure needed to read meters remotely and securely. At the end of September 2014 the Government reported that there were 543,900 domestic smart meters (328,800 electricity and 215,100 gas) operating in smart mode, which represents 1.2 per cent of all domestic meters operated by the larger suppliers.⁷

Phase 2: the mass roll-out phase 2015–2020

3. Following the foundation phase, energy providers will be obliged to complete the mass roll-out between 2015 and 2020. Energy companies will contact their customers to install

1 [Helping Households to cut their energy bills](#) 12 October 2012

2 [Helping Households to cut their energy bills](#) 12 October 2012

3 Which? ([PSM0016](#))

4 [Helping Households to cut their energy bills](#) 12 October 2012

5 [Smart Meters: A guide](#) 8 October 2013

6 [Smart Meters: information for industry and other stakeholders \(22 January 2013\)](#)

7 [Smart Meters, Great Britain, Quarterly Report to end, September 2014](#)

smart meters. The mass roll-out phase will use a SMETS 2 meter, which has technical differences to SMETS 1.

4. The Data Communications Company (DCC) and Smart Energy GB have been appointed as key enablers of the mass roll-out. The role of Smart Energy GB, which is funded by suppliers and was launched in 2014, is to engage consumers on smart meters on behalf of suppliers. The DCC was appointed by DECC in September 2013 and its role is to provide the national communications structure that links the smart meters in homes and businesses to energy suppliers. The DCC aims to ensure that the same smart meters can be used with different energy suppliers, thereby resolving concerns about interoperability and retaining customers' freedom to switch suppliers. The mass roll-out was due to start at the end of 2015, however, in November 2014, the DCC launched a consultation 'Resetting the DCC Delivery Programme' whose purpose is to seek an extension of the start date to 2016.⁸

5. In June 2014, the National Audit Office issued a report called "Update on preparations for Smart Metering".⁹ The Public Accounts Committee (PAC) then held a short inquiry into preparations for smart metering.¹⁰ The PAC received written evidence from DECC and Opower, held a one-off oral evidence session in June 2014 with DECC, and published their report on 10 September 2014.

Our inquiries

6. In our 2013 report, we investigated the potential costs and benefits of the smart meter roll-out, as well as progress towards the 2015 launch.¹¹ We were broadly supportive of DECC's efforts but highlighted five areas where more clarity was needed:

- Keeping the overall costs under control
- The relationship between smart meters, demand-side response and a smart grid
- Consumer engagement
- Consumer savings
- Smart meter coverage and interoperability (i.e. enabling one meter to be compatible with all energy suppliers)

We also noted that DECC had not published the Major Projects Authority's review of the smart meter project on grounds of commercial sensitivity. We stated that given the concerns that have been raised about the risk of cost escalation, the Government should "make this information available as soon as possible".¹² The Government has yet to publish any of the three MPA assessments.

8 [Resetting the DCC Delivery Programme](#), accessed 6 February 2015

9 National Audit Office [Update on preparations for smart metering](#), 5 June 2014

10 Public Accounts Committee [Update on preparations for smart metering](#), 10 Sept 2014

11 Energy and Climate Change Committee [Smart meter roll-out](#) 16 July 2013

12 Energy and Climate Change Committee [Smart meter roll-out](#) 16 July 2013

7. Given the national importance of the smart meter programme and the concerns that we raised in our first inquiry on the subject, we followed up our earlier inquiry by inviting responses on the following issues:

- What progress has been made on smart meter roll-out since our last report on this subject?
- To what extent has the Government addressed the concerns we raised about smart-meter roll-out, and the concerns raised by other interested parties since we published our last report?
- What problems have emerged during the foundation stage and how are they being addressed?
- What are the remaining challenges (technical, communication or other) associated with launching the mass roll-out of smart meters in 2015, and completing it by 2020?
- How can these challenges be overcome?
- What are the best approaches to monitoring the mass roll-out of smart meters?
- What contribution can smart meters make to expand the use of demand-side response as a means of addressing possible capacity shortages?
- To realise the full potential benefits of smart meters, is it necessary to introduce time of use pricing for electricity?

8. We received 35 submissions of written evidence and held two oral evidence sessions in December 2014. A full list of witnesses can be found at the back of this report. We are grateful to all those who took the time to contribute to this inquiry.

2 The remaining challenges

Experiences in the foundation phase

9. We heard from one of the largest energy suppliers that smart meters had benefited their customers. British Gas wrote:

Customer satisfaction for British Gas smart meter customers was 53% higher than of our standard meter customers, and complaints for smart meter customers were 21% lower...Our dual fuel customers are already saving on average 2–3%, around £26 a year and we expect this to increase to around 5%, or £52, once new tools such as smart phone apps and time of use tariffs are available¹³

10. However, another large energy supplier remained cautious about the foundation phase. SSE, which supplies electricity and gas to nine million homes, wrote that it had three concerns about the foundation phase. The first was that installation costs had increased, the second was the lack of consumer engagement, and the third was that achieving 100% roll-out by 2020 was unrealistic given the effort required to educate consumers to change their behavioural patterns on energy consumption.¹⁴

Technical challenges

Multiple occupancy and tall buildings

11. We identified in our first inquiry that the foundation phase was not appropriate for tower blocks and other multiple occupancy buildings where multiple gas and electricity meters are unable to ‘communicate’ to each other.¹⁵ E.On confirmed these problems as suppliers transition from the foundation phase to mass roll-out.¹⁶ British Gas told us that an individual supplier-led solution to this challenge was not adequate:

What we probably need there is an industry solution. An industry solution will be a lot less expensive, a lot cheaper, than having each supplier going into a building installing their own technology. What we need to do for that is, for example, for DECC and the Government to take the lead in co-ordinating all industry parties to make sure that that industry solution is reached.¹⁷

12. This view was echoed by SSE.¹⁸ However, the Government suggested that their current approach was working. Alan Over, Deputy Programme Director, Smart Metering Implementation Programme, DECC, told us:

13 British Gas ([PSM0022](#))

14 SSE ([PSM0034](#))

15 Energy and Climate Change Committee [Smart meter roll-out](#) 16 July 2013

16 E.On ([PSM0013](#))

17 Q6 (Jorge Pikunic)

18 SSE ([PSM0034](#))

We would like the home area network solutions to be delivered by energy suppliers and industry, but the programme definitely has a role in co-ordinating that and assuring that the delivery is coming to fruition. We have working groups with industry in place to do that and we are reviewing the progress of those. If we are not satisfied with sufficient progress, we will take further action, but the progress that we are seeing at the moment is appropriate and positive.¹⁹

13. We first identified the technical challenge of multiple occupancy and tall buildings for smart meters in 2013. The Government has established working groups with industry to address this issue but suppliers remain dissatisfied with the level of progress to date. We recommend that the Government take a firmer, co-ordinating role to steer those involved towards an effective cross-industry solution. DECC should use its smart meter working groups, identify the preferred solution and establish a clear timeline to address the issue of multiple occupancy and tall buildings.

Interoperability

14. There are two types of interoperability issues. The first type occurs when customers switch suppliers but find that their new energy provider cannot take readings from the smart meter installed by the previous supplier. The second type of interoperability involves incompatibility between the foundation phase meters (SMETS 1) and the roll-out phase meters (SMETS 2). We identified interoperability as a challenge to smart meter roll-out in 2013. Energy suppliers are responsible for installing smart meters, so when customers switch suppliers, they may also have to switch smart meters. The lack of smart meter interoperability between suppliers and SMETS 1 and SMETS 2 models may act as a deterrent to consumer engagement with smart meters, and to switching. Skanska, a company which installs and maintains smart meters, told us:

The fact that there is no truly interoperable system or standard “churn” contracts make it very difficult to obtain long term finance. This could result in a newly installed SMETS 2 meter being removed and reinstalled when a customer chooses to move to a new supplier, because there is no mechanism for the rental agreement to be transferred between suppliers. This adds an additional layer of risk to the financial markets and meter asset providers, and the potential for significant extra cost to the overall programme which will be passed onto consumers [...] It is also hugely damaging to the customer experience if, within a five year roll out period, they are subjected to the inconvenience of multiple installation visits. This acts as a disincentive to the switching behaviour which supports and improves the competitive energy market.... We believe that further Government support, in the form of a regulatory requirement that encourages an installed SMETS 2 asset’s continued use would go some way to reassure investors and consumers.²⁰

19 Q175 (Alan Over)

20 Skanska ([PSM005](#))

15. British Gas told us that because they had been “early adopters” of smart meter technology before SMETS compliancy regulations were introduced, some of their 800,000 meters, which were almost, but not fully SMETS compliant, would have to be replaced by 2020. This is an estimated 10-15 years short of their natural life expectancy and would add costs and inconvenience to customers.²¹ We also heard that the DCC had yet to integrate the SMETS 1 meters into their national communications network. Jonathan Simcock, Managing Director, DCC, explained that this work had not yet been done and that the DCC expected DECC to “fire the starting gun”. SMETS 2 meters on the other hand have been “designed to work with the DCC infrastructure”.²² The Government said that “interoperability is at the heart of our framework”, particularly on the ability to switch suppliers.²³

16. As interoperability is at the heart of the Government’s framework on smart meters, the Government and the DCC should relax requirements for early smart meters that fall just short of SMETS 1 compliancy to be replaced by 2020. This could reduce cost and inconvenience for consumers.

In-Home Displays

17. We also heard that interoperability problems might be eased if suppliers could provide the data on energy usage directly onto smart apps. This would involve removing the current obligation for suppliers to provide an in-home display (IHD) which shows energy usage. Melissa Gander, Managing Director of In-Home Technology, Ovo Energy, said:

The technology is there and we can use it to be able to give customers their data on a smartphone. The challenge is that we are still mandated to provide an in-home display so that cannot enable the smartphone usage. We have a choice. Do we give the customer an in-home display and the piece of kit that allows the customer to see the data on a smartphone and have that additional cost? There is the challenge. It is just adding more and more cost to the programme. We want to innovate and we want to be able to give customers their data in the format that best suits them.²⁴

18. But IHDs could be important tools to change consumer behaviour around energy usage. Sacha Deshmukh, Chief Executive, Smart Energy GB, said:

I think it is incredibly important that there is a display in the home. What we have seen from every study and from talking to consumers ourselves is that using the display in the home and being able to use that so everyone in the home can see what they are spending, people can use it as a family and plan their energy use in a bit more of a co-ordinated way within the family. It helps them to both control their energy spend and have it more front of mind

21 British Gas ([PSM0022](#))

22 Q103 (Jonathan Simcock)

23 Q208 (Daron Walker)

24 Q42 (Melissa Gander)

than simply were it on a phone app that you may or may not bother to check.²⁵

The Government shared the view that IHDs were useful:

[National Energy Action] have done work around the IHD and engagement with those [vulnerable] types of consumers and have found that they do stand to benefit and have benefited from having access to the IHD information. We have also put in place, through the installation code of practice, a whole load of requirements to make sure that the energy companies explain how the IHDs work, explain and give advice around energy efficiency. Again, that is key to driving behaviour change and helping people save money on their bills.²⁶

19. Technology has moved on since it was made obligatory for suppliers to offer In-Home Displays (IHDs). It is essential that all meters are compatible with smart phones and tablets as smart technology is now commonplace and apps would provide more flexibility for both suppliers and consumers and would improve interoperability during the mass roll-out phase. However we are conscious that there are many UK households who still lack access to smartphones and other smart devices. On balance we recommend that DECC and Ofgem maintain the mandate for all suppliers to offer IHDs. We also recommend that the Government and suppliers work together to keep costs down and identify an affordable smart app which can be used with all smart meters. In this way all customers can be offered a choice which meets individual customer preferences.

The DCC Delay

20. It is important that the communications infrastructure is under the control of a single authority. The Government contracted the DCC to this role in September 2013. Don Leiper, Director of New Business, E.On, said:

Yes, [the DCC] is the right answer. We would much rather interact with one entity than multiple entities. This is a complex process in the energy industry around changing supplier and changing meters and those kind of things, and to have to have our system adapt to work with multiple third parties to co-ordinate that would be challenging. Downstream there are also very significant benefits not factored into the impact assessment that we would expect to come because the DCC will create some central control on data and data distribution. Complex industry practices are expected to get very much simplified downstream from the smart roll-out, so there is a further set of benefits to come because the DCC hopefully will exist on time.²⁷

21. However, as noted earlier, the DCC launched a consultation in November 2014 on its proposal to delay the start of its communications infrastructure programme from 2015 to

25 Q105 (Sacha Deshmukh)

26 Q192 (Daron Walker)

27 Q4 (Don Leiper)

2016.²⁸ It took 14 months to reach a decision that it needed to do this because “until now, it has not been possible for DCC to make a fully informed judgement about programme timescales”.²⁹ This suggests a poor understanding of their contractual obligations by DCC and failure on the Government’s part to ensure it was contracting with a partner capable of delivering what it requires. We also heard that the smart energy code (SEC)—which is a multi-party agreement managed by a Panel comprised of industry stakeholders including the DCC—is more than 900 pages long.³⁰ This length and complexity will lead to inefficiencies.

22. We heard that the DCC delay would undermine the prospect of achieving the 100% roll-out by 2020. For example, energy supplier, SSE told us that the lengthier the delay of the DCC infrastructure, the more likely that suppliers would continue to install SMETS 1 (i.e. foundation phase) meters, rather than the SMETS 2 meters required for the roll-out phase.³¹ Sanjaya Singhal, Chief Executive Officer, Secure Meters Group, provided further commentary on the adverse impact of the DCC delay:

We already have a challenge on our hands. If DCC is not going to be available until the middle of 2016 or late 2016, assuming it does go ahead, we are all, as suppliers, faced with the deadline of 2020 to install all the meters and that is not going to happen. [...] But 2020 is enshrined in law. There is not the installation capacity, so the only way we can work today is to put more SMETS 1 meters on the wall and if we put more SMETS 1 meters on the wall then we have a problem because DCC and SMETS 1 will both need to co-exist and that part of the programme, as far as DCC is concerned, is still work in process.³²

23. SSE argued that because of this and other delays to the smart meter roll-out programme, the UK should now limit itself and meet the EU requirements to deliver smart meters to 80% rather than 100% of UK homes by 2020.³³ The Minister stated that the Government’s ambition was to:

Reach that 99.25% and we do know there will be some properties that will be difficult to reach, but suppliers have been challenged to ensure that they try their utmost to reach all consumers so that no consumers miss out on the benefits of having a smart meter.³⁴

24. *We are very concerned about the impact the DCC delay will have on customers during the mass roll-out phase for the smart meter programme. The target of 100% smart meter installation by 2020, which is already in danger of being missed, will be made even harder to achieve by this delay. It is also likely to increase the number of SMETS 1 meters installed by suppliers, creating future interoperability problems for customers who then*

28 [Resetting the DCC Delivery Programme](#) Accessed 6 February 2015

29 DCC ([PSM0035](#))

30 Q51 (Sanjaya Singhal)

31 SSE ([PSM0034](#))

32 Q49 (Sanjaya Singhal)

33 SSE ([PSM0034](#))

34 Q174 (Baroness Verma)

have to install SMETS 2 meters. The DCC must urgently find ways of incorporating these early meters into its communication infrastructure and of simplifying the extremely long smart energy code. Following the end of the DCC consultation period, the DCC should report jointly with the Government on the impact that this delay will have on the roll-out and in particular on consumers, identify what measures will be taken to get the roll-out back on track, and explain how any additional resources will be provided.

Installation challenges

Shortage of installation engineers

25. We heard that one of the most significant challenges towards meeting the 100% roll-out target by 2020 was the shortage of installation engineers. Melissa Gander, Managing Director of In-Home Technology, Ovo Energy, said:

Our experience is that we are already facing challenges around installer capacity. Historically, you had electricity-trained installers and gas-trained meter installers. Now we are having to upskill the existing installer population to be dual fuel and then layer the smart training on top. There is quite a lot of cost and it is a risk at the moment in employing installers because the market is so small that you pay to train them and there is a retention risk there. It is a significant investment that takes time to pay off.

26. Jorge Pikunic, Managing Director of Smart Metering, British Gas, added:

The requirement for installing, for deploying the rollout, could be somewhere north of 10,000 engineers or 10,000 installers. Last year, for example, we recruited 450 installers, smart energy experts, who we trained in our own academies. We will continue to do that, but to make sure that that peak does not go too high, beyond 10,000, it is important that we start the mass rollout as soon as possible to smooth that peak.

27. Sacha Deshmukh, Chief Executive, Smart Energy GB agreed that the key was planning:

We have time at the moment to recruit and train those installers, but it is going to need strong action to make sure that that is happening. Ofgem has now said it is going to be looking more closely at individual suppliers' installation plans and the robustness of those plans and their ability to have the right number of installers to do that is undoubtedly a key part of that.

The Minister explained that work was underway to address this:

The National Skills Academy are doing a lot of work around ensuring that we have enough people to be able to deliver this. I think the figure is around about 7,000 people are needed, and all the suppliers are very much aware of that. I know from my own conversations with industry that there is an awful lot of work going on with their local education facilities [...] We have regular conversations around capabilities and capacity and, knowing that there is a need and knowing the work that is being done, I am pretty

confident that we will have enough people to be able to deliver the programme.

28. *Despite the Minister's confidence, we are concerned that the current shortage of installation engineers makes it unlikely that the 100% roll-out target will be met by 2020, and may affect the installation costs passed on by suppliers to customers. We recommend that the Government publishes a detailed plan and timetable to address this skills shortfall, and consults suppliers to identify which regions and customers will be most affected by it ahead of the 2020 roll-out deadline.*

The role of Distribution Network Operators

29. To date, suppliers have had to take the lead on driving forward the installation of smart meters. This creates problems. As households in most streets receive their energy from different suppliers it is probable that installation engineers will be sent to the same street on different occasions by different companies, to install smart meters in different households at different times throughout the roll-out period. We received evidence that rolling out smart meters on a regional basis through the Distribution Network Operators (DNOs) could lead to considerable cost savings and help to address some interoperability issues.³⁵ However, other witnesses indicated that the DNOs would be less suited than suppliers in leading the roll-out, as DNOs do not have a direct relationship with household and business customers.³⁶ Transferring responsibility for the roll-out from suppliers to the DNOs would also require DNOs to be given permission to access customer data and this could cause further delays to the roll-out.³⁷ There may also be difficulties clarifying ownership and leasing of meters.

30. *The existing roll-out arrangements may now be too advanced for a transfer of responsibility for installation. However, given the potential benefits of DNOs playing a greater role in the roll-out, we recommend that the Government urgently conducts and publishes an assessment of the feasibility of requiring a more active participation of the network operators in the roll-out programme.*

Public engagement with smart meters

31. Lack of effective communication between the energy industry and the 28 million UK households remains an ongoing challenge to full roll-out by 2020. British Gas stated:

We believe that customer engagement will remain the greatest challenge. It can be very difficult to get some customers interested or engaged in the first place, and the lengthy appointment booking process for smart meters, as a result of regulatory requirements, has a tendency to deter some customers. We will need a broad, consistent and positive message to ensure that customers grant us access to their properties to fit smart meters. Smart Energy GB will play a crucial role in delivering this.

35 Alex Henney ([PSM0002](#))

36 Q3 (Sanjaya Singhal, Melissa Gander)

37 Q87 (Don Leiper, Sanjaya Singhal)

Our most significant challenge to date has been explaining to customers what a smart meter is. 40% of customers are now aware of smart meters, but it is not clear if they understand what a smart meter is. We expect this level on understanding to increase as Smart Energy GB begins to play a more active role in promoting the benefits of smart meters and addressing any concerns.³⁸

32. We heard that vulnerable customers in particular may need more support to understand and engage with smart meters. Jenny Saunders, Chief Executive of National Energy Action, said “we are not convinced that everything is in place yet to make us confident that all customers are going to have access and will equally benefit from smart [meters]”.³⁹ The Minister described the challenges of communicating smart meters to some customers:

The vulnerable customers are also people from ethnic minority communities who have not been able to engage or understand because of language barriers, people who have small families and do not go out of their homes a lot because of having caring responsibilities. So for me the definition of “vulnerable” is much more wide-reaching than often is demonstrated.⁴⁰

33. Once installed, smart meters fall out of use, suggesting apathy amongst some customers over the longer-term. Melissa Gander, Managing Director of In-Home Technology, Ovo Energy, said:

Within a year of roll-out of our smart meters, almost a third of our IHDs we cannot communicate with now, which means they are not in use, so they are switched off. So although E.On might have found that 90% of theirs is still in use, we have already found a third of ours are not.⁴¹

34. Smart Energy GB, which is responsible for nationwide consumer engagement on smart meters, said that it would rely on other agencies such as the BBC to help engage the public:

We believe that the success of the smart meter roll-out will be maximised if those broadcasters with public service obligations, including the BBC, recognise communication about the smart meter roll-out as part of their public service obligation and work with Smart Energy GB to support our engagement activity.

We will be talking with broadcasters about these obligations. We hope that the Committee will support this goal, and encourage those broadcasters with public service obligations to work closely with us.⁴²

35. It is clear that helping 28 million households, including vulnerable customers, to understand the benefits of smart meters and to continue using them once installed will be

38 British Gas ([PSM0022](#))

39 Q2 (Jenny Saunders)

40 Q191 (Baroness Verma)

41 Q44 (Melissa Gander)

42 Smart Energy GB ([PSM0017](#))

challenging. We want the Government to report periodically on the impact of smart meters on low-income households. While Smart Energy GB's appointment has been supported we also want evidence from this communications agency, and from Government, of a clear engagement plan to persuade the public of the advantages of installing and using smart meters. We are concerned at the reported high drop-off rates after one year of installation. Smart Energy GB's plan to use third parties, such as community groups and public broadcasters, to engage the public is wise and we encourage this approach.

Mandatory Time of Use tariffs

36. One important objective of introducing smart meters is to encourage customers to change their pattern of energy consumption. We explored the impact that Time of Use (ToU) tariffs could have when combined with smart meters. ToU tariffs involve setting different prices for different times of energy consumption. Economy 7 which has been in use in domestic tariffs since 1978 is one example.⁴³ Under Economy 7, customers are charged a lower rate for electricity consumed during the seven off-peak hours at night-time. ToU tariffs can complement smart meters and incentivise changes in consumption patterns, thereby encouraging energy efficiency and reducing consumer bills. British Gas has experimented with ToU tariffs. Since June 2014, 2,500 customers are currently on a "free Saturdays or Sundays" tariff. Customer feedback has shown that the tariff has been extremely popular. In addition, 86% of customers on this tariff said they feel that the tariff has enabled them to make changes that will reduce their consumption and cut their energy bills.⁴⁴

37. Despite these benefits some witnesses suggested that rolling out ToU tariffs alongside the roll-out of smart meters risks confusing the public. E.On proposed that ToU tariffs should be delayed until 2020 to allow smart meters to become established first and thus demonstrate the true impact of ToU tariffs.⁴⁵

The Government stated that it approaches mandatory ToU tariffs with caution:

We need to watch how the market develops. The business case of the smart programme itself only has a very small percentage of people using time of use tariffs, around 20% [...] I think tread with care, we need consumers understanding their energy use; understanding how much things are costing; understanding the tariffs that are available. Other companies are coming in offering advice around tariffs. All of those things will build over time.⁴⁶

38. National Energy Action also advised caution about mandatory ToU pricing with smart meters. They argued that some vulnerable households are in flux or have inflexible working patterns (for example, shift-work) which could place them at a disadvantage with

43 [Economy 7](#) Accessed 6 February 2015

44 British Gas ([PSM0022](#))

45 E.On ([PSM0013](#))

46 Q228 (Daron Walker)

ToU tariffs.⁴⁷ British Gas believed that adding a new tariff would confuse customers at a time when the Government and Ofgem are also attempting to simplify energy tariffs through the Retail Market Review.⁴⁸ Sacha Deshmukh, Chief Executive, Smart Energy GB, recommended a phased approach:

If you are going to introduce something like [ToU tariffs] that is a major change to the way that people expect and understand pricing, then do not do it suddenly, make sure that you explain what is happening and you get people to understand what is happening and you get people to be able to plan that into their lives.⁴⁹

39. We believe that the potential benefits of Time of Use tariffs working in conjunction with smart meters are very substantial. Energy suppliers should continue to pilot the use of these tariffs and feedback to Ofgem the extent to which they help change consumption patterns and lower bills. We agree with the Government and suppliers that the public need to have a better understanding of Time of Use tariffs before the universal adoption of compulsory Time of Use tariffs can be considered.

47 National Energy Action ([PSM0012](#))

48 British Gas ([PSM0022](#))

49 Q159 (Sacha Deshmukh)

3 Conclusion

40. While progress has been made since we first looked at the Government's smart meter programme in 2013, we do not believe that near universal smart meter roll-out will be achieved by 2020. Long-known technical challenges of multiple occupancy and tall buildings should have been resolved by now. Other technical issues around interoperability such as the migration from SMETS 1 to SMETS 2 lack a clear plan for resolution and the DCC delay has damaged confidence in the programme. The slow start to full engagement with the public means Smart Energy GB must now step up delivery of their communications programme. We want the Government to remain ambitious about securing the maximum benefits from smart meters as soon as possible, particularly in relation to energy efficiency and consumer bills. The Government must monitor the impact of the programme to ensure that low income households, in particular, are benefitting. However, the benefits of smart meters will only be fully realised if the Government sets and keeps within a budget limit on the cost of the overall programme. We also consider that the Government should publish the Major Project Authority's assessments of the smart-meter programme.

41. Without significant and immediate change to the present policy, the programme runs the risk of falling far short of expectations. At worst it could prove to be a costly failure. The Government is at a crossroads in relation to smart meter roll-out. All the problems which we have identified are symptomatic of a national programme whose management the Government has left largely to suppliers. The Government must give serious consideration to whether or not it is possible to reduce costs to consumers by streamlining the roll-out of smart-meters, perhaps through more active participation of DNOs. The Government must also take a more active role in driving forward the industry-led roll-out, seeking and facilitating industry-wide solutions to the technical challenges that remain. Getting it right will eventually cut energy usage and bills for 30 million homes and businesses in the UK. Getting it wrong risks embarrassment for the Government through public disengagement with a flagship energy policy and a costly missed opportunity.

Conclusions and recommendations

Multiple occupancy and tall buildings

1. We first identified the technical challenge of multiple occupancy and tall buildings for smart meters in 2013. The Government has established working groups with industry to address this issue but suppliers remain dissatisfied with the level of progress to date. We recommend that the Government take a firmer, co-ordinating role to steer those involved towards an effective cross-industry solution. DECC should use its smart meter working groups, identify the preferred solution and establish a clear timeline to address the issue of multiple occupancy and tall buildings. (Paragraph 13)

Interoperability

2. As interoperability is at the heart of the Government's framework on smart meters, the Government and the DCC should relax requirements for early smart meters that fall just short of SMETS 1 compliancy to be replaced by 2020. This could reduce cost and inconvenience for consumers. (Paragraph 16)

In-Home Displays

3. Technology has moved on since it was made obligatory for suppliers to offer In-Home Displays (IHDs). It is essential that all meters are compatible with smart phones and tablets as smart technology is now commonplace and apps would provide more flexibility for both suppliers and consumers and would improve interoperability during the mass roll-out phase. However we are conscious that there are many UK households who still lack access to smartphones and other smart devices. On balance we recommend that DECC and Ofgem maintain the mandate for all suppliers to offer IHDs. We also recommend that the Government and suppliers work together to keep costs down and identify an affordable smart app which can be used with all smart meters. In this way all customers can be offered a choice which meets individual customer preferences. (Paragraph 19)

The DCC Delay

4. We are very concerned about the impact the DCC delay will have on customers during the mass roll-out phase for the smart meter programme. The target of 100% smart meter installation by 2020, which is already in danger of being missed, will be made even harder to achieve by this delay. It is also likely to increase the number of SMETS 1 meters installed by suppliers, creating future interoperability problems for customers who then have to install SMETS 2 meters. The DCC must urgently find ways of incorporating these early meters into its communication infrastructure and of simplifying the extremely long smart energy code. Following the end of the DCC consultation period, the DCC should report jointly with the Government on the impact that this delay will have on the roll-out and in particular on consumers, identify what measures will be taken to get the roll-out back on track, and explain how any additional resources will be provided. (Paragraph 24)

Shortage of installation engineers

5. Despite the Minister's confidence, we are concerned that the current shortage of installation engineers makes it unlikely that the 100% roll-out target will be met by 2020, and may affect the installation costs passed on by suppliers to customers. We recommend that the Government publishes a detailed plan and timetable to address this skills shortfall, and consults suppliers to identify which regions and customers will be most affected by it ahead of the 2020 roll-out deadline. (Paragraph 28)

The role of Distribution Network Operators

6. The existing roll-out arrangements may now be too advanced for a transfer of responsibility for installation. However, given the potential benefits of DNOs playing a greater role in the roll-out, we recommend that the Government urgently conducts and publishes an assessment of the feasibility of requiring a more active participation of the network operators in the roll-out programme. (Paragraph 30)

Public engagement with smart meters

7. It is clear that helping 28 million households, including vulnerable customers, to understand the benefits of smart meters and to continue using them once installed will be challenging. We want the Government to report periodically on the impact of smart meters on low-income households. While Smart Energy GB's appointment has been supported we also want evidence from this communications agency, and from Government, of a clear engagement plan to persuade the public of the advantages of installing and using smart meters. We are concerned at the reported high drop-off rates after one year of installation. Smart Energy GB's plan to use third parties, such as community groups and public broadcasters, to engage the public is wise and we encourage this approach. (Paragraph 35)

Mandatory Time of Use tariffs

8. We believe that the potential benefits of Time of Use tariffs working in conjunction with smart meters are very substantial. Energy suppliers should continue to pilot the use of these tariffs and feedback to Ofgem the extent to which they help change consumption patterns and lower bills. We agree with the Government and suppliers that the public need to have a better understanding of Time of Use tariffs before the universal adoption of compulsory Time of Use tariffs can be considered. (Paragraph 39)

Conclusion

9. While progress has been made since we first looked at the Government's smart meter programme in 2013, we do not believe that near universal smart meter roll-out will be achieved by 2020. Long-known technical challenges of multiple occupancy and tall buildings should have been resolved by now. Other technical issues around interoperability such as the migration from SMETS 1 to SMETS 2 lack a clear plan for resolution and the DCC delay has damaged confidence in the programme. The slow start to full engagement with the public means Smart Energy GB must now step up delivery of their communications programme. We want the Government to remain ambitious about securing the maximum benefits from smart meters as soon

as possible, particularly in relation to energy efficiency and consumer bills. The Government must monitor the impact of the programme to ensure that low income households, in particular, are benefitting. However, the benefits of smart meters will only be fully realised if the Government sets and keeps within a budget limit on the cost of the overall programme. We also consider that the Government should publish the Major Project Authority's assessments of the smart-meter programme. (Paragraph 40)

10. Without significant and immediate change to the present policy, the programme runs the risk of falling far short of expectations. At worst it could prove to be a costly failure. The Government is at a crossroads in relation to smart meter roll-out. All the problems which we have identified are symptomatic of a national programme whose management the Government has left largely to suppliers. The Government must give serious consideration to whether or not it is possible to reduce costs to consumers by streamlining the roll-out of smart-meters, perhaps through more active participation of DNOs. The Government must also take a more active role in driving forward the industry-led roll-out, seeking and facilitating industry-wide solutions to the technical challenges that remain. Getting it right will eventually cut energy usage and bills for 30 million homes and businesses in the UK. Getting it wrong risks embarrassment for the Government through public disengagement with a flagship energy policy and a costly missed opportunity. (Paragraph 41)

Formal Minutes

Tuesday 3 March 2015

Members present:

Sir Robert Smith, in the Chair

Dr Phillip Lee
Mr Peter Lilley
Christopher Pincher

Graham Stringer
Dr Alan Whitehead

Draft Report (*Smart meters: progress or delay?*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 41 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Ninth Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till a time and a date to be fixed by the Chair]

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the Committee's inquiry page at www.parliament.uk/ecc.

Tuesday 2 December 2014

Question number

Jorge Pikunic, Managing Director of Smart Metering, British Gas, **Robert J Murray**, Sector Director, SMART Grids, Skanska, **Don Leiper**, Director of New Business, E.On, **Melissa Gander**, Managing Director of In-Home Technology, Ovo Energy, **Jenny Saunders**, Chief Executive, National Energy Action, and **Sanjaya Singhal**, Chief Executive Officer, Secure Meters Group

[Q1-89](#)

Tuesday 16 December 2014

Jonathan Simcock, Managing Director, Smart DCC Ltd, and **Sacha Deshmukh**, Chief Executive, Smart Energy GB

[Q90-169](#)

Baroness Verma, Parliamentary Under-Secretary of State, **Daron Walker**, Senior Responsible Officer, Smart Meters and **Alan Over**, Deputy Programme Director, Smart Metering Implementation Programme, Department of Energy and Climate Change, **Rob Church**, Partner, Retail Markets, and **Rachel Fletcher**, Senior Partner, Markets Division, Ofgem

[Q170-250](#)

Published written evidence

The following written evidence was received and can be viewed on the Committee's inquiry web page at www.parliament.uk/ecc. PSM numbers are generated by the evidence processing system and so may not be complete.

- 1 Alex Henney ([PSM0002](#))
- 2 Alex Henney ([PSM0036](#))
- 3 All Party Parliamentary Group On Energy Costs ([PSM0015](#))
- 4 Becky Smiles ([PSM0031](#))
- 5 British Gas ([PSM0022](#))
- 6 Citizens Advice ([PSM0026](#))
- 7 CO-Gas Safety ([PSM0023](#))
- 8 Council Of Gas Detection and Environmental Monitoring ([PSM0008](#))
- 9 Data And Communications Company ([PSM0035](#))
- 10 DECC ([PSM0030](#))
- 11 E.On ([PSM0013](#))
- 12 EDF Energy ([PSM0032](#))
- 13 Energy Networks Association ([PSM0021](#))
- 14 Energy UK ([PSM0024](#))
- 15 Fuel Poverty Advisory Group (FPAG) ([PSM0028](#))
- 16 Hugh Smeaton ([PSM0007](#))
- 17 National Energy Action (NEA) ([PSM0012](#))
- 18 Npower ([PSM0018](#))
- 19 Ofgem ([PSM0029](#))
- 20 Ofgem ([PSM0039](#))
- 21 Opower ([PSM0011](#))
- 22 Ovo Energy ([PSM0025](#))
- 23 Sanjaya Singhal ([PSM0010](#))
- 24 ScottishPower ([PSM0033](#))
- 25 Secure Meters (UK) Limited ([PSM0006](#))
- 26 Siemens ([PSM0027](#))
- 27 Skanska ([PSM0005](#))
- 28 Smart Energy GB ([PSM0017](#))
- 29 Smart Energy GB ([PSM0038](#))
- 30 SSE ([PSM0034](#))
- 31 Telecom Plus ([PSM0037](#))
- 32 Utilita Energy Limited ([PSM0009](#))
- 33 VocaLink ([PSM0004](#))
- 34 Wales & West Utilities Limited ([PSM0019](#))
- 35 Which? ([PSM0016](#))

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the Committee's website at www.parliament.uk/ecc.

The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2010–12

First Report	Emissions Performance Standards	HC 523 (807)
Second Report	UK Deepwater Drilling—Implications of the Gulf of Mexico Oil Spill	HC 450 (882)
Third Report	The revised draft National Policy Statements on energy	HC 648
Fourth Report	Electricity Market Reform	HC 742 (HC 1448)
Fifth Report	Shale Gas	HC 795 (HC 1449)
Sixth Report	Ofgem's Retail Market Review	HC 1046 (HC 1544)
Seventh Report	A European Supergrid	HC 1040 (HC 1684)
Eighth Report	The UK's Energy Supply: Security or Independence?	HC 1065 (HC 1813)
Ninth Report	Solar Power Feed-In Tariffs	HC 1605 (HC 1815)
Tenth Report	The EU Emissions Trading System	HC 1476
Eleventh Report	The Future of Marine Renewables in the UK	HC 1624
Twelfth Report	Consumption-Based Emissions Reporting	HC 1646
First Special Report	Low carbon technologies in a green economy: Government Response to the Committee's Fourth Report of Session 2009–10	HC 455
Second Special Report	Fuel Poverty: Government Response to the Committee's Fifth Report of Session 2009–10	HC 541
Third Special Report	The future of Britain's electricity networks: Government Response to the Committee's Second Report of Session 2009–10	HC 629

Session 2012–13

First Special Report	The Future of Marine Renewables in the UK: Government Response to the Committee's Eleventh Report of Session 2010–12	HC 93
First Report	Draft Energy Bill: Pre-legislative Scrutiny	HC 275
Second Report	The road to UNFCCC COP 18 and beyond	HC 88 (HC 633)
Second Special Report	Consumption-Based Emissions Reporting: Government Response to the Committee's Twelfth Report of Session 2010–12	HC 488
Third Report	Low-Carbon Growth Links with China	HC 529 (HC 748)
Fourth Report	Pre-appointment hearing with the Government's preferred candidate for Chair of the Committee on Climate Change	HC 555
Fifth Report	Consumer Engagement with Energy Markets	HC 554 (HC 1036)
Sixth Report	Building New Nuclear: the challenges ahead	HC 117
Seventh Report	The Impact of Shale Gas on Energy Markets	HC 785

Session 2013–14

First Report	The Green Deal: watching brief	HC 142 (HC 607)
First Special Report	Building New Nuclear—the challenges ahead: Government Response to the Committee's Sixth Report of Session 2012–13	HC 106
Second Report	A Severn Barrage?	HC 194 (HC 622)
Second Special Report	The Green Deal: watching brief: Government Response to the Committee's First Report of Session 2013–14	HC 607
Third Special Report	The Impact of Shale Gas on Energy Markets: Government Response to the Committee's Seventh Report of Session 2012–13	HC 609
Third Report	UK oil refining	HC 340 (HC 718)
Fourth Report	Smart meter roll-out	HC 161 (HC 719)
Fifth Report	Energy Prices, Profits and Poverty	HC 108 (HC 717)
Sixth Report	Local Energy	HC 180 (HC 749)
Seventh Report	Pre-appointment hearing with the Government's preferred candidate for Chair of Ofgem	HC 645
Eighth Report	Levy Control Framework	HC 872
Ninth Report	Carbon capture and storage	HC 742

Session 2014–15

First Special Report	Levy Control Framework: Parliamentary oversight of Government levies on energy bills: Government Response to the Committee's Eighth Report of Session 2013–14	HC 590
First Report	Intergovernmental Panel on Climate Change Fifth Assessment Report Review of Working Group I contribution	HC 587 (HC 732)
Second Report	Innovate to accumulate: the Government's approach to low carbon innovation	HC 747 (HC 733)
Second Special Report	Carbon capture and storage: Government Response to the Committee's Ninth Report of Session 2013–14	HC 638
Third Report	The Green Deal: watching brief (part 2)	HC 348 (HC 882)
Fourth Report	Small nuclear power	HC 347 (HC1105)
Fifth Report	Linking emissions trading systems	HC 739
Sixth Report	Energy Network Costs: transparent and fair?	HC 386
Seventh Report	Protecting consumers: Making energy price comparison websites transparent	HC 899
Eighth Report	Implementation of Electricity Market Reform	HC 664