



House of Commons

Committee of Public Accounts

Update on preparations for smart metering

Twelfth Report of Session 2014–15



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

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Committee of Public Accounts

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Summary

The Department of Energy and Climate Change's (the Department's) Smart Metering Implementation Programme requires energy suppliers to replace 53 million meters in homes and small businesses with smart electricity and gas meters by 2020. The costs of installing smart meters, some £10.9 billion, will be borne by consumers through their energy bills. We are concerned that the Department is primarily relying on assumed competition in the industry to control costs and deliver benefits. This may well prove insufficient on its own to protect consumers. There is also a danger that the Government gets locked into an existing technology when technologies are changing fast – leading to consumers paying for investment in a system which is already out of date. The Department must monitor progress, costs and benefits during roll-out to identify whether changes are needed to secure the delivery of smart meters at minimum cost to consumers and ensure vulnerable and low-income households benefit.

Conclusions and Recommendations

1. The Department expects smart meters will help consumers reduce their energy consumption, encourage them to shift demand away from peak times, make it easier to switch between suppliers, and encourage take-up of new tariffs. The Government estimates that £26 will be saved on average by consumers who pay average bills of £1,300 per annum—a saving of just under 2%. This saving has to be set against the cost of £10.6 billion which will be met by consumers at an average cost that will peak at £11 per annum in 2017. The Department is relying on the consumer becoming more “savvy” in making decisions about using energy. It also expects smart meters to reduce costs for suppliers, network operators and generators. The Department has established the shared data and communications infrastructure required to ensure that smart meters work consistently for all consumers, regardless of their energy supplier. It has also established the regulatory framework requiring suppliers to install the meters and to establish and fund a new central body whose role is to increase consumer awareness of the Programme and to promote long-term energy consumption behaviour change. The mass roll-out of smart meters is due to start in late 2015. The regulatory framework requires energy suppliers, under licence conditions that will be overseen by Ofgem, to take all reasonable steps to install smart meters in all households and small businesses by the end of 2020.
2. **Some aspects of the Programme design may prove to be too costly.** The Department requires energy suppliers to install smart meters in virtually all homes and small businesses by the end of 2020. While energy suppliers are planning on this basis, they are concerned that a near 100% per cent roll-out may not be feasible and that extra costs may be involved in persuading their more reluctant customers to accept the new meters. Suppliers also need to develop alternatives to the radio systems for the Home Area Network linking smart meters to in-home displays and other devices, which will not work in some 5% of premises.

Recommendation: *The Department should keep the design of the Programme under review and, if costs escalate, assess the value for money of the individual components of the design that are causing cost increases, and take action where appropriate.*

3. **Some aspects of the Programme could be out-of-date by the time it is rolled out.** The current proposal is that every household will be fitted with a smart meter and offered an in-home display that allows consumers to see what energy they are using and how much it is costing. However evolving technology suggests that customers could receive the information on their smart phones, making the in-home display redundant. Energy suppliers will therefore be required to offer in-home displays, even though customers may not want or use them.
4. **The impact of smart meters on vulnerable and low income consumers is unclear.** The Department lacks a good understanding of the impact of smart meters on different groups, particularly vulnerable or low income consumers. It plans to remedy this by capturing relevant information during the mass roll-out of smart meters. It is important that customers using prepayment smart meters benefit from

the smart meter programme, but not all energy suppliers are yet able to offer a viable prepayment smart meter solution and there is no regulatory obligation on companies to provide prepayment meters. The Department is confident, however, that by the end of 2015 all major suppliers will be ready to offer a prepayment option.

Recommendation: *The Department must monitor the impact of the Programme to ensure vulnerable and low income households are obtaining the benefits available from smart meters.*

5. **Relying on market forces to control costs and deliver benefits may not provide adequate protection for consumers.** The Department is confident that energy suppliers' commercial incentives and competition in the industry will control Programme costs and deliver benefits to energy consumers. But the Department and Ofgem accepted that Ofgem's proposal to refer the energy market to the Competition and Markets Authority reflected their concern about the effectiveness of competition in the industry. Subsequently Ofgem announced that it was referring the energy market to the Competition and Market Authority for a full investigation. In doing so Ofgem noted that a recent assessment it had prepared with the Office of Fair Trading and the Competition and Market Authority had showed "increasing distrust of energy suppliers, uncertainty about the relationship between the supply businesses and the generation arms of the six largest suppliers, and rising profits with no clear evidence of suppliers reducing their own costs or becoming better at meeting customer expectations." Furthermore, one energy company (EDF) believes £1.24 billion could be saved by having a national procurement programme for smart meters.

Recommendation: *The Department and Ofgem should set out how each intends to minimise the costs of installing smart meters and ensure that the subsequent operational cost savings to suppliers are passed on to consumers.*

6. **Smart meters need to be fully interoperable so that customers can switch easily between suppliers, but there are no regulations preventing suppliers from replacing meters when customers switch.** The Department and Ofgem expect smart meters to improve competition in the industry by facilitating switching and told us that new suppliers have already entered the market. While the smart meters technology provides for interoperability, the regulatory requirements do not prevent suppliers from replacing smart meters when customers switch supplier. This may be a particular issue in cases where the smart meters installed are rented rather than owned by the supplier.

Recommendation: *The Department should ensure clear regulatory requirements are in place to prevent suppliers from replacing smart meters unnecessarily when they take on new customers through switching.*

7. **The Department has not made clear to consumers what the Programme will cost them and what benefits they can expect.** The Department estimates that the average cost for the gas and electricity meters and other equipment needed and the cost of installation for each premises will be some £215 and that the average impact on bills of the suppliers' net costs is expected to peak at £11 a year in 2017. By 2020, once

roll-out is complete, the Department expects that savings on energy bills, taking into account consumers' expected energy use reductions, will average £26 a year for each household, a saving of 2 per cent on the average annual bill of £1,328. This is expected to rise to £43 a year, or 3 per cent by 2030. These estimates are based on consumers changing their behaviour and consuming less energy, and energy suppliers passing on their operational cost savings to consumers.

Recommendation: *The Department should require suppliers to provide a clear breakdown for consumers of the cost of smart meters, their operational cost savings and whether consumers are achieving the expected reductions in energy consumption.*

8. **The Department has relied heavily on consultants to progress the Smart Meters Programme, rather than acquiring the skills in-house.** In 2013-14 some £14 million of the £19.3 million spent by the Department on managing the Programme was spent on external commercial and technical expertise. The Department also expects to spend around 50% of its 2014-15 budget on external expertise. The Department has a large portfolio of major projects and a need for strong in-house commercial expertise. The Department recognised that some additional pay flexibility may be required to bring in the commercial expertise it needed but had not examined how other departments like the Ministry of Defence were tackling this issue.

Recommendation: *The Department should examine how other departments are developing their in-house commercial expertise, particularly the model developed by the Ministry of Defence to provide new pay arrangements outside civil service structures.*

9. **Public confidence in the Smart Meters Programme may be undermined by the Department's refusal to publish the Major Projects Authority's assessments of the Programme.** The Major Projects Authority reviewed the Programme in 2011, 2012, and 2013. The Department maintains that it has followed Cabinet Office advice and is constrained by Cabinet Office rules from placing these reports in the public domain as the reviews were conducted on a confidential basis.

Recommendation: *The Department and the Cabinet Office should adopt a more open approach to publishing Major Projects Authority project assessments after they have published the resulting RAG rating and only rarely withhold the most sensitive information.*

1 Securing the benefits of the programme for consumers

1. Under the Smart Metering Implementation Programme (the Programme), which is being led by the Department of Energy and Climate Change (the Department), energy suppliers must replace 53 million meters in homes and small businesses across Great Britain with smart electricity and gas meters by 2020.¹ Smart meters are intended to give consumers near real-time energy consumption information and allow suppliers to collect meter readings remotely. The Department expects smart meters to help consumers reduce their energy consumption, shift demand away from peak times, facilitate switching between suppliers and encourage take-up of new tariffs to reduce bills and carbon emissions.² The Department estimates that the Programme will cost £10.9 billion and bring economic benefits of £17.1 billion by 2030, giving estimated net benefits of £6.2 billion.³ It also expects smart meters to bring further, as yet unquantified, benefits from stronger competition between energy suppliers resulting from easier switching and enabling a smart electricity grid.⁴

2. On the basis of an update report from the Comptroller and Auditor General on preparations for smart metering⁵ and a progress report from the Department⁶, we took evidence from the Department and the Office of Gas and Electricity Markets (Ofgem) on the progress that has been made on smart metering since our previous report on preparations for the roll-out of smart meters published in January 2012.⁷

3. The Department's analysis of the impact of smart metering on energy bills assumes that the costs to energy suppliers of rolling out smart meters will be recovered through higher energy bills. Furthermore the Department assumed that the extra costs will be offset by consumers changing their behaviour and using less energy, and the expectation that competition will lead to energy suppliers passing cost savings to consumers.⁸ The Department estimates that the impact of suppliers' net costs will peak at £11 a year in 2017, and, when expected consumer energy use reductions are taken into account, that smart meter roll-out will result in short-term transitional energy bill increase that is expected to peak in 2015 at around £6 a year for the average dual-fuel consumer. By 2020, once roll-out is complete, the Department predicts net savings on energy bills to average £26 a year, rising to £43 a year in 2030 based on changed consumer behaviour. The Department

1 [C&AG's Report, para 1](#)

2 [C&AG's Report, para 5](#)

3 [C&AG's Report, paras 3 and 2.2](#)

4 [C&AG's Report, paras 5 and 2.5](#)

5 [Comptroller and Auditor General, Update on Preparations for the roll-out of smart meters](#), Session 2014-15, HC 167, 5 June 2014

6 [Department of Energy & Climate Change, Smart Metering Implementation Programme: Progress update report to the Public Accounts Committee](#), March 2014

7 [House of Commons Committee of Public Accounts, Preparations for the roll-out of smart meters](#), Sixty-third Report of Session 2010-12, HC 1617, January 2012

8 [Qq 2.11; C&AG's Report, para 2.8](#)

acknowledged that, against a background in which the average household energy bill is £1,328 a year, these are quite small savings.⁹

4. The Department's estimates of average energy bill impacts are net impacts and do not provide information about the extra costs of smart metering versus the savings over time. The Department told us that the capital cost of smart metering equipment and the installation process costs amounted to £214.80, but it has not provided separate figures on how the gross costs of smart metering would impact on bills and what savings consumers would expect to achieve.¹⁰

5. The Department has not put a cap on the costs consumers will bear. The Department stated that it was "reasonably confident" that suppliers' own commercial incentives and industry competition, in combination with regulation, would keep Programme implementation costs within the cost envelope it has set and deliver the expected benefits to consumers. But Ofgem confirmed that it had proposed referring the retail energy market to the Competition and Markets Authority in March 2014 for a market investigation reflecting its concerns about the effectiveness of competition in the industry. The Department also expressed the view that there were problems with competition in the industry.¹¹ Subsequently Ofgem announced that it was referring the energy market to the Competition and Market Authority for a full investigation. In doing so Ofgem noted that a recent assessment it had prepared with the Office of Fair Trading and the Competition and Market Authority had showed "increasing distrust of energy suppliers, uncertainty about the relationship between the supply businesses and the generation arms of the six largest suppliers, and rising profits with no clear evidence of suppliers reducing their own costs or becoming better at meeting customer expectations."¹²

6. Both the Department and Ofgem maintained that they have a wide range of powers to require energy companies to give them information and that they were using those powers to obtain data from suppliers to monitor Programme implementation; and to verify that the business case for smart metering was being delivered. The Department told us that, if they were not satisfied that plans were on track, they would consider the case for either tightening licence obligations or, in certain cases, fining the companies concerned.¹³

7. HM Treasury Green Book guidance recommends that departments should consider how policy interventions will affect different sectors of society, for example low income households. The Department admitted that it did not have enough robust evidence from international or national trials to undertake the necessary analysis and was therefore not in a position to quantify the potential distributional impacts of smart metering. The Department added that, based on the small amount of evidence it had, it was reasonably confident that smart meters would be welcomed by less wealthy consumers. The Department told us that it was doing research on consumer behaviour, to be published this summer that would help provide a better understanding of the impact of smart meters on

9 [Qq 26-28, 128-136; C&AG's Report, paras 11 and 2.9](#)

10 [Qq 128-144](#)

11 [Qq 3-13, 122-127; C&AG's Report, paras 4, 9, 12, 2.5, 2.8 and 2.27](#)

12 [Ofgem Press release dated 26 June 2014](#)

13 [Qq 110, 122](#)

different groups. The Department also stated that it would work closely with Ofgem to capture and analyse information on distributional impacts during mass roll-out and that it was developing its methodology so that it has the data it needs to monitor the Programme, and make sure that it is delivering the business case set out.¹⁴

8. The Department confirmed that all smart meters would be able to accommodate prepayment but not all energy suppliers have yet developed viable systems to allow them to offer prepayment services to customers.¹⁵ The Department told us that it was very important that prepayment customers were capable of benefiting from smart meters and it was confident that, by the end of 2015, all major suppliers would be ready to offer a prepayment option.¹⁶ However, while the Secretary of State for Energy and Climate Change has urged suppliers to provide smart meters to prepayment customers by the end of 2016, it is not a regulatory obligation for them to have prepayment options available.¹⁷ The Department said that a regulatory requirement could be introduced if suppliers were not making sufficient progress, but believed there were strong commercial incentives for suppliers to provide smart meters to prepayment customers, because the cost of providing the service through traditional meters was much higher.¹⁸

9. The Department and Ofgem expect smart meters to facilitate switching between suppliers and encourage take-up of new tariffs.¹⁹ The Department said that since 2010, 12 new energy suppliers had entered the market and there were now 19 independent suppliers in the domestic market.²⁰ The Department told us that smart metering technology provides for interoperability so that when consumers switch suppliers, the new supplier will be able to use the existing smart metering equipment and will not have to replace the equipment with its own. But this may be a particular issue in cases where the smart meters installed are rented rather than owned by the supplier. The Department considered that there were strong commercial incentives for suppliers to carry on using the existing equipment when consumers switched, rather than installing £200 worth of new equipment. However, neither the Department nor Ofgem could confirm that existing regulatory requirements would prevent suppliers replacing smart metering equipment when customers switched from one to another.²¹

14 [Qq 107-110; C&AG's Report, paras 16 and 2.10](#)

15 [Qq 95-103; C&AG's Report, paras 15 and 1.20](#)

16 [Q 95](#)

17 [Qq 99, 106; C&AG's Report, paras 15 and 1.20](#)

18 [Qq 98-99, 103](#)

19 [C&AG's Report, paras 5 and 2.5](#)

20 [Qq 48-50](#)

21 [Qq 59-63, 68-77](#)

2 Managing the programme

10. The Department has overall responsibility for the Programme and has overseen its implementation since 2011. As the Programme moves towards mass roll-out the Department expects the transition to enduring industry-led governance to take place progressively over the next two years or so. Suppliers will be responsible for roll-out, and Ofgem will oversee suppliers' and other industry participants' compliance with their licence and Smart Energy Code obligations.²²

11. The Department stated that it was ultimately accountable for the Programme and that it would devolve responsibility to Ofgem once the transition to industry-led governance was complete. However, the Department confirmed that there would be no changes to the accountability framework until it was confident that Programme risks had been sufficiently reduced.²³ Ofgem told us that it would deal with complaints relating to smart meters, where consumers were not satisfied with their supplier's response.²⁴

12. The Department has mandated suppliers to take "all reasonable steps" to roll out smart meters to 100% of the market, and the central communications service provider is contracted to provide a network that will enable smart meters to be reached in 99.25% of premises. Some suppliers have asked the Department to reduce the requirement to, say, 80% roll-out because of the additional expense of achieving the last 20% of installations. The Department told us it was resisting these requests very strongly, particularly as it believed that these last 20% might include a disproportionate number of vulnerable consumers, and it does not want smart meters to be rolled out at the suppliers' convenience. It was for Ofgem to determine whether suppliers had taken all reasonable steps to achieve 100% roll-out. Ofgem has not provided guidance on what all reasonable steps will mean for suppliers, but told us it was very likely that it would do so in due course.²⁵

13. Under the Programme, a home area network is required to allow in-home displays and other devices to connect to consumers' smart meters. However, the radio system currently in use for the home area network operates at a frequency of 2.4 GHz which is not suitable for up to 30% of premises, mainly high rise flats and buildings with thick walls. Suppliers are developing an alternative solution using a different radio frequency but this will still not work in 5% of premises.²⁶ Suppliers are working on a range of further solutions for these remaining premises, which may include wired connections, and these must be ready to allow roll-out to be completed by the end of 2020.²⁷

22 [C&AG's report, paras 6 & 7](#)

23 [Q 147](#)

24 [Qq 148 & 152](#)

25 [Qq 114 – 116](#)

26 [Q 94](#)

27 [Q 94](#)

14. We asked the Department whether it was necessary to have an in-home display in every home, and whether savings could be achieved by not providing an in-home display to households who wanted to use other devices such as smart phones or tablets to receive data from their smart meters. The Department told us that in-home displays cost £15 each and noted that all available evidence showed that in-home displays lead to additional energy savings of between 2% and 4%, bringing substantial cost savings for the consumer.²⁸ There is also a danger that the Government favours an existing technology when technologies are changing fast—leading to consumers paying for investment in a systems which is already out of date.

15. The Department told us that it had spent £19 million on running the Programme in 2013-14. Of this, around £14 million had been spent on external experts. In 2014-15, it expects to spend £12 million, of which around half will be spent on external experts. The Department explained that, during 2013-14, it ran four major procurement exercises for the data and communications services, so it had been crucial to have the technical and commercial expertise necessary to be able to engage effectively with commercial companies and safeguard consumers' financial interests. The Department told us its procurements had delivered a reduction of several hundred million pounds relative to the estimated cost of the central communication system in the impact assessment.²⁹

16. We asked why the Department was relying so heavily on consultants to progress the Programme rather than developing its own in-house expertise, given it has a large portfolio of projects that require an ongoing commercial capability. The Department said it was building its in-house capability, but that the Programme required a lot of expertise over a short timeframe, and it would not be practical to carry this expertise within the Department in the longer term.³⁰

17. We also asked whether the Department had examined the approach taken by the Ministry of Defence of setting up a new organisational structure that allowed permanent civil service staff to be employed and paid outside traditional pay structures. The Department said it had not looked at the Ministry of Defence's initiative, but it believed that a degree of pay flexibility was necessary to enable the Department to bring in the commercial expertise it needed, because not doing so would mean reliance on consultants that would cost more, and whose knowledge and experience would be lost to the Department once their work is completed.³¹

18. The Major Projects Authority reviewed the Programme in 2011, 2012, and 2013. The Department told us that it had not published the MPA's assessments as they are designed to facilitate a frank discussion of the Programme, to review Programme management and processes, and to provide confidential advice to the Senior Responsible Officer on the delivery of the Programme. The Department maintained that it had followed Cabinet Office advice and was constrained by Cabinet Office rules from placing these reports in the public domain as the reviews were conducted on a confidential basis, and expressed the

28 [Q 89](#)

29 [Qq 33- 157](#)

30 [Qq 158 – 161](#)

31 [Q 163](#)

view that publishing the reports would remove the confidentiality of the process and inhibit frank contributions to the review.³²

Formal Minutes

Monday 1 September 2014

Members present:

Mrs Margaret Hodge, in the Chair

Mr Richard Bacon
Guto Bebb

Austin Mitchell
John Pugh

Draft Report (Update on preparations for smart metering), proposed by the Chair, brought up and read.

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

Paragraphs 1 to 18 read and agreed to.

Conclusions and recommendations agreed to.

Summary agreed to.

Resolved, That the Report be the Twelfth 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 Wednesday 3 September at 2.00 pm]

Witnesses

Wednesday 9 June 2014

Page

Stephen Lovegrove, Permanent Secretary, Department of Energy and Climate Change; **Daron Walker**, Senior Responsible Officer, DECC; and **Dermot Nolan**, Chief Executive, Ofgem

[Ev 1](#)

List of printed written evidence

- 1 Department of Energy and Climate Change ([SMA0005](#))
- 2 Department of Energy and Climate Change ([SMA0006](#))
- 3 Opower ([SMA0007](#))

List of Reports from the Committee during the current Parliament

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

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Sixth Report	Adult social care in England	HC 518
Seventh Report	Managing debt owed to central government	HC 555
Eighth Report	Crossrail	HC 574
Ninth Report	Whistleblowing	HC 593
Tenth Report	Major Projects Authority	HC 147
Eleventh Report	Army 2020	HC 104