Progress on smart meter rollout

Written evidence submitted by Citizens Advice

4 November 2014

1. Citizens Advice provides free, confidential and impartial advice to help people resolve their problems. The service aims:
   - To provide the advice people need for the problems they face.
   - To improve the policies and practices that affect people’s lives.

2. We are the statutory watchdog for energy consumers. We undertake research and track concerns raised by consumers through our website, helpline and bureaux to make the case for better protections and better service.

Executive summary

3. Citizens Advice welcomes smart meters, expecting they will deliver accurate bills, less inconvenience and better information for consumers. We do not think bill savings are a quick or easy win, particularly in vulnerable households. Nor do we take risks such as data privacy lightly. We are also concerned about potential gaps between design and delivery: will information be accurate, what about those missing out on connectivity, and when will prepayment consumers really benefit?

Recommendations

4. While many Citizens Advice clients are often highly energy literate, the barriers to taking control of their energy use are high – a mix of high upfront costs, uncertain benefits, complex finance or grant mechanisms, contract types, and disinterested landlords. The Smart Meter Installation Code of Practice may need to specify actions required of suppliers to ensure vulnerable consumers share the benefits of the programme they are helping to fund, and for now its Vulnerability sub-group will monitor activity. This must be supplemented by actions by Smart Energy GB to engage these consumers, and by Government to make links with supporting energy efficiency programmes.

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4 Ibid.
5. Citizens Advice recognises the potential of smart meters to improve the experience of prepayment meter users, who currently suffer higher tariffs, lack of choice and inconvenient payment options. The Government and regulator need to facilitate delivery of these benefits wherever appropriate, so that prepayment meter consumers are not the last to benefit from smart meters.

6. Government must intervene to ensure a coordinated approach where it can deliver cost savings:
   a. helping vulnerable consumers to benefit from smart meters
   b. addressing particular infrastructure challenges such as those found in multi-dwelling units
   c. making links between the smart meter rollout and energy efficiency programmes

7. In-home displays are the visible part of the smart metering system, and better information is wanted by consumers to help them with their budgets. It also helps them to reduce unnecessary energy use. Citizens Advice is concerned by continuing claims that their functionality can be delivered through apps on smartphones or tablets, which are fundamentally different. Instead we recommend efforts refocus on the consumer need for accessible hardware and clear information.

8. Data privacy remains a real concern for consumers and a reputational risk for the programme. Citizens Advice recommends Government undertakes an independent evaluation of suppliers’ and networks’ access to and use of data, with a particular consideration of consumer needs, reputational risks, and unfair competitive advantage. We also want consumers to have access to an independently-hosted data dashboard, so they can see and manage who can access their personal data.

9. A rush to roll out demand-side response could undermine consumer confidence. Consumers need clear and comparable offers; protections need to limit consumers’ liabilities; and as all consumers are funding this rollout, benefits must be felt by all. A good start would be a clean-up of Economy 7 which currently leaves 38 per cent of users paying more than they would on a standard tariff.

10. Micro and small businesses have a higher average consumption per premise than domestic users, and are more likely to respond to feedback. We therefore recommend they are offered an energy display and access to their data alongside their smart meter, at no upfront or additional cost.

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5 Public Accounts Committee (2014) Committee publishes report on Update on preparations for smart metering, http://s.coop/1v2b0
Costs

11. The competitive market will not keep costs in check. Efficiencies can be delivered through collaboration, and where benefits are expected, we are sceptical that suppliers will pass these on in full to consumers, given their track record on reducing retail prices in response to falling wholesale energy costs\(^7\).

12. Certain costs do not appear to have been captured in the Impact Assessment (IA) while other cost savings may be over-estimated. For example: there may be new costs associated with additional home visits due to wireless communication problems and costs associated with the transition from the current prepayment infrastructure to smart wireless prepay. Meanwhile the energy savings are reliant on consumers’ ability to take control of their energy use. This may be limited by a range of barriers such as health, property type, presence or type of heating controls, working patterns or tenure.

13. Multi-million pound benefits that could result from greater co-ordination risk being missed:

- Coordination of installations whether on a regional or community level could result in billion pound savings\(^8\).
- The DECC IA estimates a conservative £10 efficiency saving per household if gas and electricity are installed at the same time\(^9\).
- Around a third of customers do not have dual fuel contracts. A coordinated approach would help minimise disruption and inconvenience to customers\(^10\).
- 22 per cent of installations will be non-standard\(^11\), potentially requiring network support which could be delivered through ‘floating help teams’.
- 19 per cent of all households live in multiple dwelling units\(^12\) for which a coordinated approach to reduce the costs of installation, in terms of time and assets; reduce inconvenience for residents and property-owners; avoid interference between systems, and reduce testing costs.

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\(^7\) See also Public Accounts Committee, (2011) *Preparations for the rollout of smart meters*, http://s.coop/1v2b7
\(^8\) Frontier Economics (2008) *Less is more? How to Optimise the Smart meter Roll-out*, http://s.coop/1v2bb
\(^9\) Due to reduced travel time between visits, and time saved from connectivity testing and wider checks only having to be carried out once.
\(^10\) Waiting in for the meter man results in loss of earnings, disproportionately impacting those on low incomes who are paid by the hour; in days taken off sick with a cost to the economy; and causes inconvenience and annoyance for customers, TOA Technologies (2011) *UK Cost of Waiting Survey*, http://s.coop/1v2c8
\(^11\) Energy Networks Association
\(^12\) Siemens
14. It is widely understood by industry\textsuperscript{13} and third parties that suppliers cannot lead co-ordination under what is fundamentally a competitive meter installation approach.

15. The Government must evaluate where coordination will deliver cost savings, and lead that coordination.

**Smart meters and demand-side response, including time of use tariffs**

16. In DECC’s latest impact assessment, the benefits of demand-side response (DSR) account for slightly over 5 per cent of the total expected benefits. This assumes 20 per cent of consumers will choose to take up static Time-of-Use (ToU) tariffs by 2020. If this is to become a reality, Government needs to be proactive in ensuring DSR services are accessible, affordable, and fair\textsuperscript{14}

**Accessibility**

17. Consumer Focus research\textsuperscript{15} suggested that nearly 40 per cent of consumers on Economy 7 are on the wrong tariff, and may be getting no benefit from it. This indicates a strong likelihood that many will be left worse off by new TOU tariffs, and savings envisaged by the smart meter programme will not be achieved, so we recommend:\textsuperscript{16}

- a phased, gradual introduction of DSR to build confidence and the development of tariffs that deliver real benefits. Introduction of complexity could be costly for individual households and counterproductive to the reputation of the programme.
- Ofgem’s Retail Market Review (RMR) introduced steps to simplify the energy market, but these will need to be adapted for DSR, as will comparison tools.

**Affordability**

18. DSR is supposed to save money but trials have shown that some consumers could end up paying more. Working with the Smart Grid Forum’s Workstream 6, Citizens Advice is encouraging potential service providers to agree a protections toolkit to avoid this.

19. New ‘smart appliances’ will need new product standards and labelling to ensure claimed savings are credible and that consumers are informed of potential issues relating to interoperability or remote

\textsuperscript{13} Energy Retail Association (ERA) Newsletter *Smart Comment* July 2009 Issue 4
\textsuperscript{14} Citizens Advice (2014) *Take a Walk on the Demand Side: Making DSR work for domestic and small business consumers*, http://s.coop/1v2ba
\textsuperscript{15} Consumer Futures (2012) *From devotees to disengaged*, http://bit.ly/1x3KkKE
\textsuperscript{16} Citizens Advice (2014) *Take a walk on the Demand side: Making DSR work for domestic and small business consumers*, http://s.coop/1v2ba
automation. Such information will need to be delivered in conjunction with the EU Energy labelling and Ecodesign Directives to avoid consumer confusion, and we recommend clear, comparable and credible information provision is agreed prior to the introduction of DSR services.

**Fairness**

20. Experience from other countries suggests that insufficient attention to vulnerable groups such as those on low incomes, renters or non-Internet users, can lead to wide inequalities from DSR. To understand this further, Ofgem should complete a distributional impact of DSR that takes account of different demographics and behavioural responses.

21. Citizens Advice is particularly concerned that 38 per cent of users of existing DSR services such as Economy 7 tariffs or radio teleswitching schemes are left paying more than they would on a flat tariff\(^\text{17}\). This must be addressed to give consumers confidence in new DSR services.

22. For those who do not want to take part, DSR should have no adverse effects, as some system benefits should be shared. Citizens Advice also think TOU pricing should never be mandatory, and DECC and Ofgem should monitor the effect of DSR on non-participating consumers.

**Consumer engagement**

23. Our concerns about consumer engagement focus on two issues. Firstly on the importance of in-home displays and their accessibility; and secondly the ability of vulnerable consumers to use this better information to take control of their energy bills.

**In-home display**

24. The in-home display is the visible part of the smart metering system to consumers.

25. We know that the costs and benefits of providing an in-home display are being questioned by suppliers and the Public Accounts Committee\(^\text{18}\). We strongly question whether undermining consumer access to better information is the right way to build confidence in the rollout:

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\(^{17}\) Consumer Futures (2012) *From devotees to disengaged*, http://bit.ly/1x3KkKE

\(^{18}\) Public Accounts Committee (2014) *Committee publishes report on Update on preparations for smart metering*, http://s.coop/1v2b0
a. the main benefits in trials are coming from in-home displays\textsuperscript{19}, although more may be learned from DECC’s research\textsuperscript{20} into early smart meter installations.

b. It has the clearest payback of any aspect of the programme, paying for itself in just over one year

c. an in-home display is fundamentally different from a phone or tablet app

- 4 million households do not have internet access (smartphone, tablet or computer)\textsuperscript{21}
- The display can remain visible to all residents, and the at-a-glance traffic light allows consumers to note unusually high usage, and take action as necessary.
- It is a prompt, not a source for occasional reference
- It does not leave the room with the device owner/user

26. These benefits come at a cost of around £15 out of a total £400 per household. If savings are to be made they should be through an area-based approach to the rollout, and to efficiencies in the delivery of energy saving obligations.

27. The cost and value of the in-home display can also be affected by its design and we will continue to monitor the usability of in-home displays alongside other aspects of the smart meter rollout. Features that make products more usable for people with disabilities can often make them easier to use for everyone\textsuperscript{22}.

28. Information provided on the display must be clear. We strongly recommend that IHDs display the name of the tariff a consumer is using, matching that used on the consumer's bill. This requires the definition of a field in the HAN specification to carry the tariff name, not an unintuitive code as is currently the case. This will be particularly important for consumers on time of use tariffs, for example Economy 7 consumers who will need to know when they are on day and night time rates.

**Meeting the needs of vulnerable consumers**

29. SMICOP requires engagement, installer training, appointment scheduling, the location of the in-home display, system demonstration and provision of energy efficiency guidance to meet the needs of vulnerable consumers.

30. However, it does not address the vulnerability that comes from not being able to use information. The barriers to taking control of energy

\textsuperscript{19} European Smart Metering Industry Group (2012) *Empower Demand* reports and http://s.coop/1v2ay and http://s.coop/1v2az

\textsuperscript{20} Due to be published late 2014

\textsuperscript{21} ONS (2014) *Internet access – households and individuals 2014*, http://s.coop/1v2cb

\textsuperscript{22} Consumer Focus (2012) *Industry Usability Good Practice Guide*, http://s.coop/1v2ax
use are high for consumers who are vulnerable to a mix of high upfront costs, uncertain benefits, complex finance or grant mechanisms, and disinterested landlords. We want vulnerable consumers to get extra help as part of the rollout, to ensure they share the benefits of the programme they are helping to fund.

31. Citizens Advice is asking energy suppliers to report to SMICOP’s vulnerability sub-group as to how they will support vulnerable consumers through the rollout. We think this should be in the form of seamless support and the provision of energy saving advice and basic measures.

32. Smart Energy GB is looking at working with independent energy advice providers and energy efficiency practitioners (national and local) to see how they can embed smart meter messages.

33. There remains a significant gap: how will the smart meter rollout link up to other energy-consumer funded or taxpayer-funded programmes such as ECO, Nest, Arbed and HEEPS? Citizens Advice is keen to understand what that link could look like and recommends that suppliers, government and potential delivery partners develop a mechanism to build those links.

34. Citizens Advice is currently campaigning for a fair deal for prepay meter (PPM) consumers. The introduction of smart meters should improve the competitiveness and attractiveness of prepayment tariffs, through the reduction of costs-to-serve and more convenient top-up options, but it is not clear that PPM consumers will be early beneficiaries of the smart meter rollout.

35. The Citizens Advice Service has put forward the experience and needs of PPM consumers for consideration by the Competitions and Market Authority (CMA) investigation of the energy market. We are calling on all suppliers to produce consumer offers for affordable and flexible pay-as-you-go tariffs, to improve the service these consumers receive and reduce the prices they pay. The Government and regulator must work together to ensure that the benefits of smart pay-as-you-go are delivered, alongside programmes to improve energy efficiency of homes and opportunities for income maximisation (for example benefits

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26 ibid
27 Our current campaign ‘fair play for prepay’ [http://www.citizensadvice.org.uk/fairprepay](http://www.citizensadvice.org.uk/fairprepay) argues for a better deal for prepayment meter users both now and in a smart world.
checks). It is essential to ensure that consumers who currently self-ration or are at risk of self-rationing in a way that might endanger their health and wellbeing do not use less energy than is necessary.

Consumer benefits

36. Citizens Advice identifies the main benefits of smart meters as accurate bills, less inconvenience and better information.

Accurate bills

37. The promise of accurate bills has a direct benefit to consumers, and an indirect benefit due to resultant falls in complaints, and the cost of handling them. However, according to a Citizens Advice information request earlier this year, many domestic suppliers are delivering estimated bills to more than 10 per cent of smart-metered customers.30

38. A stronger incentive is needed to ensure accurate billing. Citizens Advice recommends:

- A prompt commitment from suppliers to keep consumers with a smart meter informed when bills are not accurate, and to take all reasonable steps to provide accurate bills by other means.
- A new licence condition to end back-billing more than 90 days after a smart meter is installed.
- New guaranteed standards with compensation if consumers with a smart meter do not receive regular accurate bills.

Less hassle, lower costs

39. E.on and Age UK report that interest in smart meters amongst older consumers is often driven by the wish to avoid meter readings. This may be to avoid waiting in, or concern about rogue meter readers. The avoidance of annual meter reads is expected to save each consumer around £13 a year on their bill, in addition to the removal of the inconvenience.

Better information

40. The importance of in-home displays (IHD) is covered in our consideration of consumer engagement.

41. Consumers who are told about or already use an IHD consistently assume that the account balance displayed on their IHD represents what they will be paying. This impression is strengthened by communications in supplier advertisements and on the Smart Energy GB website. Many suppliers’ IHDs in fact display an estimated cost that cannot factor in all variables such as credits, discounts or debts.

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30 Variations in the way suppliers define whether their meters are 'smart’ requires some caution about the precision of this figure, but the final figure is nevertheless significant.
42. Citizens Advice wants industry to ensure that the balances displayed on IHDs are accurate, and at a minimum suppliers and Smart Energy GB are clearer in their communications about the accuracy of the IHD display. If consumers feel they cannot rely on what their IHD tells them then faith in the rollout and the energy-saving benefits will both be at risk.

43. The Consumer Access Device (CAD) will allow consumers to access their detailed near real-time usage data directly, and avoids the risk that suppliers become the gatekeepers to a consumer’s data. They may then choose to share that data to access a range of services such as tariff comparison and switching sites, energy advice, remote healthcare and home security systems.

44. Part of making this work will be ensuring the interoperability and interchangeability of equipment and use of open standards. Proprietary solutions which can have the effect of excluding innovative new market entrants should be avoided and the embedding of existing providers must be avoided. The required use of Zigbee for the smart home area network is a step in this direction, though the existence of an annual charge to join the Zigbee Alliance may represent a barrier to some smaller entrants.

45. The CAD also provides an opportunity for the growing independent market of Home Energy Management Systems (HEMS). The data made available by the CAD may help make currently expensive HEMS more affordable and increase their functionality.

46. We would also welcome the integration of IHDs with heating controls, allowing consumers to immediately react to information on their IHD and also making heating controls more usable and engaging. At present 70 per cent of homes do not have a full set of heating controls\textsuperscript{31}, and we would welcome interventions that encourage and enable their uptake and efficient use.

\textbf{Smart meter coverage and interoperability}

\textbf{Connectivity}

47. Problems with connectivity to the Home Area Network (HAN) and the Wide Area Network (WAN) will be among the main operational barriers to a successful rollout. Loss or intermittency of either network will interfere with meter readings, IHD use, price changes and prepayment top ups, and to the development and take-up of new services.

48. Establishing the HAN will be particularly difficult in Multi-Dwelling Units (MDUs). Various solutions are being explored, such as the use of

\textsuperscript{31} Consumer Focus (2012) \textit{Consumers and domestic heating controls: a literature review}, http://s.coop/1v2cc
repeaters, but this poses a further commercial challenge. To avoid major inefficiency, suppliers in a given MDU should be able to share a single infrastructure of this kind. This requires intervention by Government to ensure collaboration, within the confines of competition law.

49. Even with a solution for MDUs, this would leave a missing 5 per cent of consumers without a HAN, and there is a parallel situation regarding WAN. Under contracted WAN coverage levels, 0.5-1 per cent of all households (more than 150,000) are excluded indefinitely. These gaps need to be filled, and in the meantime consumers without HAN or WAN should not face spiralling costs or declining service as suppliers' pre-smart infrastructure becomes uneconomic, especially for prepayment.

50. Citizens Advice has received complaints from consumers who have been promised a smart meter only to be let down when suppliers realise there is a gap in coverage. Suppliers need to make consumers aware of the need for a pre-installation check.

Interoperability

51. Interoperability problems are likely to result in increased customer inconvenience, additional waste and higher costs for consumers. In addition negative customer experiences during Foundation risk undermining engagement in wider smart meter roll-out which could increase costs and result in missed benefits for consumers. For example, Citizens Advice has received calls from consumers who do not want a smart meter as they understand it will restrict their choice of tariffs and ability to switch.

52. Full interoperability will not be in place until the DCC is operational. At present if a customer switches supplier they could lose smart functionality, have to have their meter replaced, or in the worst cases be prevented from switching to a particular offer.

53. Even then, customers living in properties with non-compliant or SMETS 1 systems may find they are not able to access new products and services which become available in the market without incurring the cost and inconvenience of having their system upgraded or exchanged.

54. Ofgem will need to monitor the effectiveness of new licence conditions around effective switching to ensure that customers who have received early smart meters are not disadvantaged.

Privacy and security

55. Under the Data Protection Act, as little data as possible should be accessed and collected to complete the task at hand.

56. In addition to the legal requirements, consumers are increasingly aware of the value their data holds, and whilst their attitude to ‘what is private’
may differ, they consistently say that they want transparency and control over how it is used.\footnote{Consumer Focus, ICO and Demos (2010) \textit{Private Lives: a people’s inquiry in to personal information}, http://s.coop/1v2b2 and Consumer Futures (2014) \textit{Smart and clear: customer attitudes to communicating rights and choices on energy data privacy and access}, http://s.coop/1v2b1}

57. This control is specified under the Government’s privacy framework for smart meters, except where suppliers and networks require it for delivery of ‘regulated duties’.

58. At present suppliers can access daily data unless consumers object.\footnote{DECC (2014) \textit{Smart meters: consumer privacy}, http://s.coop/1v2cg} Consumers can opt-in to

- to share data on a half-hourly basis
- to allow the use of their data for marketing purposes
- provide data only on a monthly basis, the minimum requirement for receipt of accurate bills, though this is not referred to on DECC’s consumer guide
- operate the meter in “dumb” mode i.e. as a standard meter that requires manual readings.\footnote{This will affect system benefits, and it is unclear how the costs of supporting ‘dumb’ meters will be met, either where they are used by choice or necessity (due to poor connectivity).}

59. However, we consistently hear suppliers making the case for additional, more detailed data, or the expectation that data collected for one purpose (eg settlement) will be available at household level and can be used for other purposes. This risks undermining our confidence in the rollout, along with the confidence of consumers. We cannot state strongly enough the importance of a firm foundation for data privacy and protection prior to the full rollout and the development of related services.

60. We therefore recommend Government undertakes an independent evaluation of suppliers’ and networks’ access to and use of data, with a particular consideration of consumer needs, reputational risks, and unfair competitive advantage and whether the data being requested is appropriate and necessary for the service being provided.

61. Such an evaluation must not rely on industry input alone, and we welcome DECC’s move to invite an independent expert to join the security sub-committee to the Smart Energy Code Panel. We recommend this expert has a particular responsibility to promote and protect consumer interests, particularly those most vulnerable.

62. We also want consumers to have access to a “data dashboard”, so they can see and manage who can access their data. At present sanctions are unspecified for the misuse of personal data, in practical terms the wider system could not support the barring of a larger
supplier from use of the DCC, and there is no check by the DCC that suppliers or other DCC users have a customer’s permission to access their data. This is at odds with the approaches proposed by the Government’s Midata programme which is seeking to check consumer consent through the use of security tokens and/or other verification methods.

63. Whilst we remain uncertain about how data will be used and verified, our recommendation is that customers opt out of the daily data read and share only their monthly meter read to ensure accurate bills, opting in to more detailed data provision only where a useful service is offered in exchange. We are keen to encourage consumers to take up energy advice and management services, from suppliers or third parties, but advise they shop around as new services enter the market and to check data will only be used for the specified purpose.

Small and Micro-businesses

64. This response has largely focussed on the needs of domestic consumers. There are some additional and different challenges facing non-domestic consumers, who often face the same barriers to energy saving as domestic consumers.

65. In the non-domestic Impact Assessment, energy savings make up £1.75bn of the estimated £1.76bn consumer benefits. DECC project that this equates to average customer savings of £191 by 2020\(^35\). We are increasingly doubtful of whether this is realistic:

- Suppliers are not required to offer small business customers an IHD or access to data for free.
- Only a minority of small businesses seem interested in having a smart meter and when they do the priority is accurate billing not demand reduction
- A minority of suppliers (smaller suppliers generally) have charged for data access.
- Anecdotal feedback suggests there is not a great appetite among industry to use the DCC for non-domestic consumers. The net effect is that the customer is locked into their supplier for the provision of services with the resultant negative impact on choice, cost and wider competition. This is particularly pronounced given the larger number of non-domestic suppliers generally.

66. This is a missed opportunity as smaller non domestic users have a higher average consumption per premise than domestic users, and are more likely to reduce gas consumption in response to information feedback\(^36\).

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\(^35\) DECC (2011) Smart Meter Implementation Programme: non-domestic impact assessment

\(^36\) Carbon Trust (2007) Advanced metering for SMEs, http://s.coop/1v2cl
67. We recommend small business customers are offered an energy display and free access to their data alongside their smart meter at no upfront or additional cost. They should also have access to a data dashboard outlined in paragraph 62, or equivalent information where the supplier has opted out of the DCC.

68. Finally, we are concerned as to whether domestic consumers who are subject to non-domestic contracts will benefit in full from the rollout. There is a risk they will not be protected by SMICOP, and may also be at risk of remote disconnection because they do not have the protections that relate only to consumers with domestic contracts. We recommend DECC assess the issues facing these consumers and ensure that all consumers in residential properties are protected, whether or not they have a domestic contract.