Smart Meter Energy Data:
Public Interest Advisory Group (PIAG)

A policy dialogue and work programme led by the Centre for Sustainable Energy & Sustainability First

Expert Roundtable on Consumer Research
19 October 2018

Stimulus paper 6
Consumer research on access to smart meter energy data

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Stimulus paper on consumer research on access to smart meter data

1. Introduction

This note provides an overview of consumer research relevant to the question of access to smart meter data for public interest purposes and the privacy issues that such access might raise. It also identifies gaps in that research where policy makers could benefit from having a further consumer view.

The annex provides more detail on existing published research of which we are aware and which provides the evidence base for the observations in this note.

2. Smart meter data specific research

Key findings from across various customer studies are summarised below.

- While most consumers are relatively relaxed about smart meter data being shared with suppliers and network operators there is a small minority who are very concerned. In the last Energy Outlook report 4% of consumers flagged privacy as a concern with the rollout – and there is some anecdotal evidence that this might have increased following the Cambridge Analytica / Facebook issues. Earlier research for Citizens Advice found 1 in 4 people were fairly or very concerned about sharing their usage data with their energy supplier.

- Inevitably the concerns are greater when more granular data is being shared with concerns that half-hourly data could reveal lifestyle patterns of behaviour. The biggest concerns are around the data being used for marketing (creating more hassle for customers).

- Where it can be explained clearly what benefits the data delivers (to society and ideally the customer directly) then there is much more acceptance.

- While most customers are not aware of the role of networks, when their role is explained and the benefits to them of having access to smart meter data are spelled out - then the vast

majority of customers would be content with networks having access to the data (even at an individual property level).

- Similarly, while customers found the settlement process hard to understand, once explained they were generally comfortable with their half-hourly energy consumption being used for that purpose, recognising the wider benefits it would bring.

- Compared to other data energy usage data is not seen as particularly sensitive.

- However, a small minority remain concerned even about access to aggregated / anonymised data (presumably because they don't trust that process to be robust).

- More generally, there would seem to be a general acceptance that government should be able to access at least aggregated data to help in planning the energy system.

- Attitudes to privacy vary widely. The Ipsos Mori research for the ENA identified 4 customer personas which reflect these varying attitudes – Happy to share; Depends who's asking; Quid pro quo; Big brother. The most relaxed did not see energy consumption as sensitive – others were more concerned about there being clear benefits while a final group were reticent about any sharing. Though small this final group was particularly vocal.

- Although all customers should have their privacy choices explained to them when having a smart meter installed the majority of customers do not recall that happening. (Noting that this does not mean it wasn't explained to them - just that they did not recall it).

3. Wider research on consumer attitudes to data

- In general consumers have a low awareness of how much of their data is collected and how it is used. When this is explained, then the sale of data to third parties and the combining of data for profiling are particular concerns.

- That said consumers are often 'rationally disengaged' about their data because they find it a complex area, because they want the service being offered and do not feel that there is anything they can do to change how it is used.

- There are big differences across the population in how concerned and how in control consumers feel.

- There is support for increased regulation to improve the data ecosystem and allow more meaningful choice.

Stimulus Paper 6 – prepared for Expert Roundtable on 19 October 2018
Consumer research on access to smart meter energy data   Final revise – 4 October 2018

3

4. Gaps in current research ?

Areas that have not been explored to date in any particular depth - but which would be of direct relevance to support PIAG thinking - would be:

- Whether consumers feel any differently about their **gas consumption data** rather than electricity (given the latter potentially reveals more about patterns of usage).
- Attitudes towards **different 'public policy' uses** of smart meter data - and towards different public policy actors. At the workshop we will give examples of different uses and the levels of data required for each (eg historic or sample data).
- **Under what circumstances** would consumers be willing to share their smart meter data with public interest groups? eg if there was a framework that explained how it was used and what control they would have? if a public body was the only one to get access to the data (and it was not shared with others)?

Our understanding is that a number of PIAG members may also be considering / planning new research on smart meter data privacy issues, including UCL, Citizens Advice and possible BEIS.:

One particular issue that both UCL and Citizens Advice have indicated that they want to look at is the question of **how to ensure informed consent**. One particular angle UCL want to explore is the role of the individual versus other members of the household. There are also issues around the **much higher resolution data available from CADs** and smart appliances where customers may not be aware what they are signing up to.

Annex: Sources of Consumer Research relevant to the Roundtable

Studies specifically on access to smart meter data

Ofgem – Consumer views on sharing half hourly settlement data (July 2018)[1]

This work was commissioned to support Ofgem's thinking on access to half-hourly data for settlement purposes. Ofgem carried out two separate exercises – one deliberative research with their Consumer First panel (carried out by Revealing Reality and involving four groups) and the other an omnibus study (carried out by Kantar with question design and analysis by Ofgem) involving 1467 face-to-face interviews.

Key findings from the Consumer First panel were:

- Most Panel Members were happy to share their data for settlement purposes and saw this as beneficial for the supplier, wider society, and potentially for themselves, although some were concerned it might lead to higher prices for them.
- Most Panel Members assumed suppliers already had access to their data through smart meters.
- More generally customers were unsure about data sharing although they did not always feel they had a choice. They had particular concerns about financial and address details.
- Most customers were happy with sharing smart meter data with their supplier in terms of energy use and a customer ID. They were concerned if the data could be used to tell when they were home.
- While customers struggled to understand the concept of settlement, once it was explained most consumers saw sharing data for settlement as beneficial leading to longer term bill savings and a more efficient energy system. They did not expect to see immediate benefits themselves but supported the idea anyway.
- Some consumers didn't trust suppliers to just use the data for settlement and thought it would be a "slippery slope"
- Panellists were more trusting of government, regulators or others without a vested interest but were wary of too many parties being involved in the process increasing the risk of data breaches

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[1] https://www.ofgem.gov.uk/publications-and-updates/consumer-views-sharing-half-hourly-settlement-data

- While some panel members supported mandatory access to the data most felt that – as a point of principal - customers should have a choice as to how their data was used. Generally, panel members were happy with an opt-out arrangement for data access – they saw the data being collected as inconsequential and didn't want the effort of having to opt in. A small number who were more sceptical wanted there to be an opt-in arrangement.
- Panellists highlighted the importance of framing requests in the right way. Talking generally about "data" made it seem more scary. Usage data is not that sensitive.

The key findings from the Omnibus survey were:

- Consumers generally consider energy consumption data to be much less sensitive than other personal data. Around half of consumers would be willing to share their energy consumption data if they saw a personal benefit eg in terms of a bill savings.
- Almost two-thirds of consumers would be willing to share their energy consumption data if it improved the overall operation and efficiency of the energy system (for the benefit of all consumers)
- On general data sharing 48% were comfortable with the level of data they shared. This was higher for young people and those over 65.
- When it comes to personal data, financial and medical records are considered to be the most sensitive by a significant margin. Only 10% of consumers put smart home device data in their top three most sensitive types of data and just 4% include half-hourly energy consumption data.
- The survey then tested a number of consumer-facing use cases and a number of market operation use cases (in effect for settlement). For the consumer-facing use cases (eg provision of tariff or energy efficiency advice, 34% of customers would share their data in all scenarios and a further 38% in at least one scenario. 15% would not share in any scenario. The remainder were unsure.
- Willingness to share half-hourly energy consumption data to improve market operation was slightly higher than for the consumer-facing use cases, with almost two thirds of consumers willing to share in each scenario. So for example 65% were willing to share half-hourly data "To improve the overall efficiency of the energy market to help bring down costs for all consumers over the next few years". 12% were not willing to share in any scenario.
- Ofgem and suppliers were seen as more trusted to handle data than an unspecified third party.
- Across the range of questions asked internet users and those with a smart meter tended to be more willing to share data.

Stimulus Paper 6 – prepared for Expert Roundtable on 19 October 2018
Consumer research on access to smart meter energy data   Final revise – 4 October 2018

6

ENA – "Consumer attitudes to DNO access to half hourly electricity consumption data" Ipsos MORI research study report (March 2017)[2]

This study was carried out using 12 extended study groups and explored attitudes to half hourly data in the context of other data privacy issues and in particular access to that data by DNOs.

Key findings were:

- Electricity consumption data was not considered sensitive by most (compared to eg financial and health data) and many were comfortable with this being accessed provided it was not linked to personal contact information (eg phone number or bank account details).

- Once participants understood the role of DNOs they felt further reassured that access would not result in negative outcomes (marketing or increased bills).

- The use of consumption data to assist more efficient strategic planning was a benefit that resonated with many participants. However there was scepticism about there being a direct benefit (in terms of savings being passed on) and there was an appetite for further information to be provided on the additional value of individual property level data.

- There was a small group of participants who were less supportive of DNOs having access to the data – not specifically because of concerns about DNOs' keeping data safe but reflecting a more general attitude about the importance of data privacy.

- Risks of hacking were felt to be real but for most did not affect their comfort with DNOs having access to data.

The report did however find a wide range of differing viewpoints on data privacy which were classified as:

- "happy to share" – relaxed about public sharing of their information in most cases

- "depends who's asking" – comfortable sharing their data where the value of doing so is clear (whether the benefit is to them or others). This group in particular felt more comfortable as the discussion progressed and they understood more about the potential value of sharing the data.

- "quid pro quo" – comfortable sharing their data when the personal value to them is clear

- "big brother" – reticent about any sharing of their data (the smallest but loudest group).

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[2] https://ems.ipsos-mori.com/researchpublications/publications/1935/Data-privacy-and-smart-meters.aspx

- In exploring attitudes to DNOs having individual property level data the study found most people were very or fairly comfortable with the idea, some were cautiously supportive if the DNO benefits were clear (which they didn't always feel they were) and others were uncomfortable with sharing that level of data usually reflecting wider concerns about data privacy.

The sorts of concerns that were voiced about sharing smart meter data generally were fear of differential pricing (ie charging more at peak times); cold-calling to sell products or services; the data being sold on to third parties; hacking and linking of smart meter data to other personal sensitive data.

The use of the data to plan for a more efficient system in the future, which met changing needs and avoided waste, resonated with many participants. For some the environmental benefits were also important.

Ofgem Consumer First Panel Report on Smart Meter Data Privacy Issues (2011)[3]

This was a deliberative research exercise using Ofgem's standing panel of around 100 domestic customers. It was carried out ahead of the data access and privacy framework being put in place and helped shape that policy thinking.

It found:

- Levels of concern increase with the granularity of data. Granular data could reveal when the property was unoccupied and that information could (in theory) be misused by supplier employees. It was unclear whether data would be made available in real time or in retrospect which were seen as different (though not explored in depth).

- The use of the term "sharing" of data in itself conveyed an impression that data could simply be passed around. Passing data on to third parties was a particular concern with panellists who were keen to understand who these third parties might be.

- Discussing this, Panellists were generally accepting of the fact that central or 'government' bodies may make use of this data at an aggregated level to better predict future demand. A small number were however suspicious that it could lead to the state being able to 'spy' on individuals' habits.

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[3] https://www.ofgem.gov.uk/publications-and-updates/ofgem-consumer-first-panel-year-3-report-smart-metering-data-privacy-issues

Stimulus Paper 6 – prepared for Expert Roundtable on 19 October 2018
Consumer research on access to smart meter energy data   Final revise – 4 October 2018

8

- The strongest reaction to the sharing of data with third parties was however the expectation that this would mean commercial organisations and therefore a subsequent increase in the level of cold calls and marketing materials directed at consumers ("creating more noise and confusion in my life").The focus of the discussions was on use of data by suppliers and hence was coloured by issues around supplier trust as it was seen as unlikely that suppliers would use the data to benefit customers.

- There was a low level of awareness of general data protection legislation.

Other smart meter studies

Citizens Advice – Current Consumer Attitudes to Smart Home Technology 2018[4]

This research was carried out by Traverse and involved 3 deliberative events and 2 workshops with harder to reach consumers. Data and privacy issues were explored as part of the sessions.

Data privacy and data collection was not top of mind for most participants in talking about smart home technology, although some consumers raised concerns around data security (in relation to hacking) unprompted. However, when discussed, consumers became increasingly aware of the amount and types of data current technology is already collecting about them. By the end of the session this was a key concern.

Consumers accepted that to get some of the benefits of the technology, they have to share their data with companies. For the most part, they were happy to share information like their interactions with the device or their preferences – or their energy usage. But they became more concerned where information shared contained personal details or could build a picture of how they live. They were particularly concerned about any implications for their physical safety and security.

Consumers were not instinctively worried about data manipulation, but as the discussion progressed, questions were raised about how data correlation/aggregation would be used for or against them

From the consumers' point of view, data collection should be a matter of informed consent and giving consumers overall transparency and control over their data. Knowing how the data is stored and protected would also make consumers more open: they expect safeguards to be in place from responsible parties.

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[4] https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/current-consumer-attitudes-to-smart-home-technology/

Stimulus Paper 6 – prepared for Expert Roundtable on 19 October 2018
Consumer research on access to smart meter energy data   Final revise – 4 October 2018

9

Citizens Advice - Early consumer experiences of smart meters 2018[5]

Whilst data wasn't the focus of this research, consumers were asked how they felt about sharing energy usage data and whether they were asked for explicit consent by their energy supplier (to access data more regularly than once a day). Consumers were also told about the data access and privacy framework and asked if the protections included made them feel reassured.

The report found:

- 26% felt fairly or very concerned about sharing energy usage data with their supplier, with younger people typically more concerned
- 59% felt reassured by the protections included in the data access and privacy framework
- 35% did not remember their supplier explaining their data options to them or asking for explicit consent
- 71% of consumers, who had their smart meter installed for over a year, did not remember their supplier contacting them again to ask if they'd like to keep their current data sharing options.

Smart Energy GB – Energy Outlook March 18 (fieldwork 2017)

This is a survey of around 10,000 energy consumers. In the most recent research 4% of consumers quoted privacy issues as a concern with getting a smart meter.

BEIS – Smart Meter Early Learning Study – Ipsos MORI 2015

This found less than 2% of smart meter customers expressed concerns about issues relating to data privacy (but worth noting that these people had already accepted a smart meter).

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[5] https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/early-consumer-experiences-of-smart-meters-2018/

Citizens Advice - Smart and clear – Customer attitudes to communicating rights and choices on energy data privacy and access (January 2014)[6] .

The focus of this research was on what information should be provided to customers about smart meter data. The conclusion was that there should be a one-page Data Document written in clear and easy to understand language. Including a government kitemark would provide reassurance that uniform standards were being applied. Those concerned about security wanted to be reassured about the transmission of the data, and the security provisions in place; those concerned about privacy were keen to understand who would have access to their data, and whether they had a choice in this.In the discussions it was clear that customers generally didn't see the data as particularly sensitive although when they started to think about it showing when they were in or out, for example, did recognise that there could be risks if it got into the wrong hands.

Most consumers felt that any link to personal details made the whole subject more important. Specifically, this covered name, contact details including address and phone number and bank account details. However, the report acknowledges that energy suppliers hold all this information now.

Consumers were also concerned about their data then being shared onwards with third parties.

The research noted the wide range of views on privacy with some not really caring and others very concerned.

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[6] http://webarchive.nationalarchives.gov.uk/20140522163010/http://www.consumerfutures.org.uk/reports/smart-and-clear-customer-attitudes-to-communicating-rights-and-choices-on-energy-data-privacy-and-access

Stimulus Paper 6 – prepared for Expert Roundtable on 19 October 2018
Consumer research on access to smart meter energy data   Final revise – 4 October 2018

11

General data sharing

Which? - Control, Alt or Delete? consumer research report on attitudes to data collection and use by Britainthinks (June 2018)[7]

The research involved over 2000 telephone interview, a number of focus groups, one to one interviews (with vulnerable customers) and deliberative workshops.

The research showed most people had only a partial understanding of how data was collected and used. They generally believed that transactions were bounded (ie you agreed to share data with a particular company in exchange for a service) and were not aware of the extent of third party data sharing and profiling. As they learned more they became more concerned.

Most people judge the acceptability of data collection by the impact that it has on them which means it is important to spell out the potential impacts. Generally people found it easier to conceptualise the potential benefits than the harm.

As a framework for exploring the impacts of different products (from smart tv to public wifi) the report looks at the level of control consumers have, the relevance of the data that is collected to the provision of the product, the benefits to the customer and the potential harms.

People were pushed into what was termed "rational disengagement" because of the effort of working out what is being collected and trying to control it. People felt powerless as they are dependent on the technology and see no alternative but to accept the terms.

People want to have meaningful control over their data – or at least for the overall system to be controlled to protect them. People were surprised there wasn't more regulation.

That said levels of concern about data collection and use vary widely. Vulnerable customers were most concerned because they had the greatest fear of a tangible detriment.

The majority (81%) were concerned about organisations selling even anonymised data to third parties. The concerns included the potential for de-anonymisation or the scope for discrimination based on aggregated data around ethnicity, religion, sexuality. That said the primary concerns were where data could be traced back to them or where inferences are made based on certain data (except for things like recommending Netflix movies where people felt there was a benefit to them). A particular concern was where whole profiles were being shared.

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[7] http://britainthinks.com/news/control-alt-or-delete-consumer-research-on-attitudes-to-data-collection-and-use-a-report-for-which

That said attitudes and behaviours don't necessarily align. While people were concerned about third party selling of data they didn't necessarily take any action to prevent that.

The report presents a segmentation that it suggests could be used by policy makers. It breaks down attitudes into:

- Tolerant 35% (accept everything except third party sale of data)
- Concerned 29% (worried but feel they can control)
- Anxious 23% (worried and not sure they are able to control)
- Liberal 13% (accept everything).

These categories are then sub-divided on the basis of behaviours (eg how often social media is used). Young people seem to be potentially more extreme in their views (ie either liberal or anxious).

Royal Society and British Academy project

This project included a literature review of past consumer engagement exercises on data and its use[8] from 2009-17, which highlighted low levels of awareness (of the technology, of how much data is collected and of the regulatory protections in place), the importance of transparency, and different views on use of data by commercial bodies versus public sector.

It notes a general desire for people to have greater control over their data and to know who was holding data on them. Transparency and clarity are important for building trust. In addition, studies have shown that people are generally much more comfortable when data is anonymised and aggregated and cannot be traced back to them or used to target them.

Studies also showed that greater acceptance and participation in research studies can be gained if there is an output which leads to perceived benefits at the individual, local, regional or national level.

However, it noted the range of views on privacy issues and different typologies that a number of studies had identified.

Concerns were raised about organisations holding data for longer than they should, inaccurate data, selling of data and the use of linked administrative data to justify controversial policies such as the Bedroom Tax. Mixed views were recorded on the idea of surveillance. The ability of organisations to keep data securely was vital for trust and there was a lack of trust in particular for commercial organisations.

Ipsos-Mori Data Dialogue (2014)[9]

The research involved 136 individuals involved in a 2-day deliberative event. The aim was to explore the role and arrangements for the new Administrative Data Research Network (ADRN). Questions were also were posed as to why the ADRN was necessary, as participants had assumed that government administrative data was already linked and shared across departments and services. There was some scepticism about the value of social research.

There were also concerns about operational aspects of the ADRN initiative, though the strict processes that will be in place provided reassurance. By the end of the second day of dialogue, most participants had concluded that they supported administrative data linkage via the ADRN, if three main conditions were met:

- The data is fully de-identified as per the process described in the workshops

- The data is kept secure at all times

- The data is linked for socially beneficial purposes, broadly defined

In many cases, participants needed extensive information and discussions with experts and researchers in order to be satisfied that these conditions would be met by the ADRN. Participants also indicated that the public should be consulted before any extension of the scope of the ADRN, particularly with relation to access to linked administrative data by private companies in order to help them make a profit. However, given the complexity of the issues I was not expected that they would be exposed to the population at large. The use of language was important.

Participants were reassured that there would not be a "super database" and that data would be destroyed after use.

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[8] https://royalsociety.org/~/media/policy/projects/data-governance/data-governance-public-engagement-review.pdf?la=en-GB

[9] https://www.ipsos.com/sites/default/files/publication/1970-01/sri-dialogue-on-data-2014.pdf

Royal Statistical Society – Data Trust Deficit a report by Ipsos MORI (2014)[10]

This research looked at levels of trust people have in different organisations using their data. It revealed a significant "data trust deficit" where people were less trusting of almost all organisations in terms of data than they were of those organisations generally.

The report shows high levels of trust in universities (albeit still with a data trust deficit) and low trust in government. The ONS is relatively highly trusted.

The reasons for a lack of trust in relation to data are around the data being used for purposes that weren't disclosed, data not being kept safe and data not being used to benefit those whose data it is.

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[10] http://www.rss.org.uk/Images/PDF/influencing-change/rss-data-trust-deficit-Ipsos-Mori-RSS-charts-slides-2014.pdf

Stimulus Paper 6 – prepared for Expert Roundtable on 19 October 2018
Consumer research on access to smart meter energy data   Final revise – 4 October 2018

15