

Ofgem Consumer First Panel Year 3

Report from the third set of workshops

Smart Metering Data Privacy Issues

June 2011



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1. Background and objectives

The Office of Gas and Electricity Markets (Ofgem) is the economic regulator for the electricity and downstream natural gas markets in Great Britain. It has the key objective of protecting the interests of all current and future consumers. Ofgem's 'Consumer First' initiative is a programme that includes a range of primary market and social research to help the organisation ensure that policy development is consumer focused and that consultations are aligned with the abilities of consumers to respond effectively. As part of this programme, Ofgem has set up the 'Consumer First Panel', a diverse group of approximately 100 domestic energy consumers recruited to take part in a series of research events and surveys, to be 'the voice of the consumer' and a unique resource for Ofgem. Each year, Panellists are refreshed and locations changed. The Panel is now in its third year.

The Panel was designed to enable members to discuss issues from a consumer perspective with the advantage of a rounded view of how the industry works and knowledge of the business models involved. Participants are called upon regularly to feed back their views and opinions on key energy topics and regulatory issues.

As with the previous two years of the Consumer First Panel, the third workshop was set up as a three hour deliberative evening event in each of the locations.

The following is a report based on the findings from the third set of events for the third year of the Ofgem Consumer First Panel, which were held in January and February 2011 with reconvened Panellists.

A total of six deliberative workshops, each lasting 3 hours, were held around Great Britain, structured to cover two main topic areas:

1) Panellist views on issues of data privacy and the use of smart meters:

- What customer data do suppliers currently hold?
- What is this data used for and what are the benefits and drawbacks of this?
- How might the type and use of data change with the move to smart meters?
- What are the benefits and drawbacks of these changes to the use of customer data?
- What mechanisms and reassurances would mitigate against any concerns?

This topic was covered primarily to help inform Ofgem's work on any protections that may need to put in place for early movers prior to the Government's mandated smart meter roll out. **Opinion Leader**

2) To understand Panellist knowledge of the risks to GB gas supply continuity and to explore options for securing this in a more robust manner, through exploring the Value of Lost Load (VoLL) to consumers:

- What are the current risks to GB gas supply continuity?
- How would consumers react in the event of planned and unplanned interruptions?
- How can risks be minimised?
- Where does responsibility lie?
- What are Panellist's responses to the introduction of a system of compensation?
- What is the willingness to pay for such a system?

This report focuses exclusively on the first topic (Smart Metering data privacy issues). The VoLL report is published as a separate document.

The agenda and content used at this year's third workshop (for the Smart Metering aspect only) can be found in the appendices.

2. Executive Summary

The need for exploration of customer issues surrounding data privacy and the sharing of customer information arose from discussions about the communications and support requirements for customers in Panel 3.1. During these sessions, a number of questions and concerns were raised about the types of data that would be recorded by smart meters and by whom this data would be accessed and for what purposes. In order to help inform Ofgem's work on any protections that may need to put in place for early movers prior to the Government's mandated smart meter roll out, the topic of data privacy and protection was covered in more detail. A number of important questions and concerns were raised, with implications for specific protections required and the approach to communicating how data will be used. Following on from Panel 3.2 where it became apparent that Panellists find the retail energy market and tariff system overwhelmingly complex, there were also concerns highlighted that implied smart meters should not be allowed to complicate matters further.

In order to set the scene for the discussion, Panellists were first asked to consider the types of personal data that suppliers currently held about them. Panellists first pointed to 'necessary' data requirements in order to be able to provide a service, these being:

- Contact details: name, address, telephone number and in some cases email addresses
- Payment information: method of payment, frequency of payment and bank details (for those paying by direct debit)
- Usage data: typically the number of units rather than actual patterns of usage, in order that consumption can be billed

There were other types of household data raised by Panellists about which there was less certainty and agreement:

- Household characteristics: e.g. age of property, number of tenants, number of rooms
- Demographic data: e.g. date of birth, age, occupation
- More detailed energy use data: patterns of use and existence of specific appliances
- Historical supplier data: previous suppliers and addresses

There was less certainty about whether some of this data was held by suppliers, though some recall providing information (particularly household characteristics) to their suppliers. While some acknowledged that this data may be used to help them select a more suitable tariff (perhaps in light of tariff discussions in Panel 3.2), others were less convinced of the benefits to them of suppliers holding this data, and some even felt it could be an invasion of privacy.

Considering customer bank details in more detail tended to split Panellists, Unsurprisingly, those that pay by direct debit tended to be more comfortable with this (and some noted that it was actually a benefit in that payments are made automatically); those paying by other means noted that they would feel uncomfortable sharing these valuable details with suppliers.

Discussions on the use of customer data by suppliers were frequently punctuated by negativity about the receipt of cold caller sales activity, which in turn highlighted that there are varying levels of comprehension about the Data Protection Act:

- Knowledgeable about how data can and cannot be used
- Aware of the Data Protection Act, but less understanding of what it comprises and trust that it is adhered to
- No awareness of the Data Protection Act, with an assumption that commercial organisations take advantage of this data wherever they can

These discussions highlighted the fact that even before the topic of smart meters are introduced, there are existing concerns and myths that may impact upon responses and attitudes to the sharing or release of personal data. Typically, Panellists feel that they have little control over their personal data in general (rather than specifically within the energy industry).

Trust in energy suppliers and the way their suppliers treat their data is characterised by a somewhat fatalistic attitude – one has little choice but to trust them. This is not necessarily negative however; for some there is a begrudging trust, but for others there is simply acceptance or 'implicit' trust. This only tends to be disrupted in the event of a negative experience. This is best explained by a Panellist who, after switching supplier, continued to also be billed by his previous supplier. While this did not necessarily make the Panellist think that his old supplier was 'stealing' from him, rather that if it is possible for customer data to be misused in this way, whether accidentally or not, then the systems and technology that control the data cannot be trusted.

In comparing the energy industry with other industries with which consumers typically interact (e.g. supermarkets, mobile phone companies, water companies), Panellists do not have any greater or lesser trust with regard to the treatment of personal data, with the exception that some expect financial institutions to have more robust security measures in place than other industries.

Having considered the issues around supplier use of personal data, Panellists were given an overview presentation of smart meters, how they operate, and the potential benefits to consumers, suppliers and the energy industry as a whole (this was a re-cap of a presentation they had received in Panel session 3.1). The issue of how the amount and type of data shared with energy suppliers would change with the advent of smart meters was then considered. While some were not able to spontaneously think of major differences, others typically reiterated what they had heard in the presentation, that consumption data would be more accurate and immediate – more granular and visible to them and energy companies.

When considering how these differences could benefit various parties, responses typically reflected the overview benefits given in the presentation, namely:

- Better supply/demand management by government¹ and industry of national energy • requirements
- In home feedback on energy consumption helping households to save money through being more energy efficient

Thinking about the benefits to the consumer of sharing this more accurate consumption data with suppliers was more difficult. After discussion, some Panellists could see that suppliers may be able to feed back targeted energy efficiency advice to them, and some even talked about being able to access more suitable and tailored tariffs as a result. This was especially true of some Panellists that are on existing 'time of use' tariffs such as Economy 7. These Panellists better understood how the use of energy can be varied to achieve cost benefits. However, this understanding was not shared by all Panellists. As previous Panel sessions have shown, there is a healthy degree of cynicism towards energy companies, and many Panellists find it hard to believe that energy companies would actively use this information for the direct benefit of the customer, with some even noting that suppliers could use the data to design more profitable tariffs and products.

There were also mixed views on how frequently data should be 'shared' from customer meters. Asked to compare and consider the benefits and drawbacks of taking daily readings, half hourly readings and readings every ten seconds, most Panellists were clear that the

¹ Panellists rarely make the distinction between central Government and local government, and in many cases they allude to government when they talk about Ofgem. For the purposes of this report we have used the noncapitalised version of government, and attempted to clarify the bodies meant by this wherever possible **Opinion Leader** 7

more frequent the readings, the more accurate they would be. This is turn means that areas of inefficiency can be better highlighted. There were however groups of Panellists who simply felt that readings every ten seconds is 'overkill', and others that felt that frequent readings in general would be an invasion of privacy given the insight it would give on what is happening within the home – "it's a bit of an intrusion isn't it?"

Given examples of how higher frequency readings might help to identify areas of inefficiency (e.g. energy companies being able to identify usage patterns of white goods and advising on how to better harness time of use tariffs), some could see how this would benefit them, though many are still uncomfortable about this lifestyle detail being available to suppliers.

It was noted at this point in discussions that the use of the term 'sharing' when related to customer data was perhaps not helpful terminology, especially when the exact method of data collection was not fully explained to participants (i.e. it was not confirmed to Panellists whether data would be viewed in real time by energy companies or collected and viewed in retrospect). In addition, use of the word 'sharing' generically as a term for data being collected or recorded may have resulted in Panellists reacting more negatively, the connotation perhaps being that any data on customers that is held can be moved around freely without adequate governance. These points are useful learning in considering how information about smart meter use and functionality is communicated in future.

Earlier during the overview presentation, when Panellists were told that data may be shared with 'allowed third parties', there were a number of immediate questions and concerns raised in advance of the scheduled discussion, highlighting the importance of this issue. Discussing whom these third parties might be, Panellists are 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 are however suspicious that it could lead to the state being able to 'spy' on individuals' habits (though no examples were given as to why the state may wish to do this). 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. Most Panellists are clearly against this happening, and are only open to being approached by organisations when there will be a clear and identifiable benefit to them, and where they have given consent for their data to be shared for such a purpose.

Given the example of having control over one's data (e.g. permitting your supplier to release your historical consumption data to an independent energy efficiency consultancy) was generally received positively – in that the choice resides with the consumer as to how their **Opinion Leader** 8

data is used, and this prompted further discussions on the level of control that customers have over their own data. While a small number are comfortable with current data protection regulations and how their data is used, many others are keen to see an 'opt in' model, where the consumer has the final say on what data is shared with what party and for what use. Throughout the discussions, Panellists indicated that they had misgivings about whether any organisation could be trusted to broker customer data in a fair and transparent manner. Given the underlying mistrust in energy suppliers in general, many would like to see visible reassurance that their data will be handled in a clear, sensitive and transparent way, especially as the data in question will be to a level of detail not previously available to the energy industry.

It will also be important for suppliers to be clear about exactly what data *is* shared; even after discussion there are some Panellist who are less than clear about what data is shared and with whom (e.g. is it just consumption data or does this also include address and bank details?)

Overall the question that consumers seem to be considering when they think about whether their data should be shared (even with the potential resulting benefits to them) is (paraphrased):

'Will the sharing of my data create more noise and confusion in my life?'

This reflects well the outputs of Panel 3.2 that highlighted the overwhelming complexity of the retail energy market and tariff system; the advent of smart meters should not increase this level of complexity.

Although questions and concerns were raised by Panellists throughout the discussion about the security of data and the resilience of the smart meter technology, these issues were discussed in detail at the end of the session. The main issues concerning Panellists are:

Failures and errors in the smart metering network/system

Several Panellists pointed out that the enhancement of an existing system with additional layers of technology could in effect increase the potential number of points of failure resulting in a lack of trust in the technology. This raises questions for Panellists, namely

- How will I know that the meter is recording my consumption accurately?
- What happens to my data if there is a network or meter failure?
- If there is a failure in the system and consumption data is not recorded accurately, how will energy suppliers work out what is owed? Might I pay more than is necessary? **Opinion Leader**

While some Panellists acknowledged that they are possibly looking for the 'worst case' scenario as a result of being asked to communicate their concerns, these issues are real for some people and will need to be addressed at the point of rollout.

Compromise of smart meter networks

A concern raised by many Panellists was whether the smart meter wireless network could be compromised with criminal intent. This question took two forms. Firstly, a simple query as to whether it was vulnerable, but secondly, and more importantly, queries about whether any sensitive customer details could be accessed this way. This highlights the lack of clarity at this stage as to what personal details will actually be stored on the meter and moved around the network. Again, an issue for consideration at the point of rollout, and a valid query against the background of news items such as those reporting that Play.com and Lush's systems were both compromised in Q1 2011, leading to the loss of some customer details.

Other, more minor concerns relate to engineers 'tampering' with the devices, or sensitive information being accessed this way. Potential motives and gain from such an activity was not made clear by the Panellists who raised this.

Visibility of customer data to supplier employees

A concern raised by many Panellists was the fact that information on energy consumption would provide considerable visibility into what is happening within a dwelling at any given time. Where frequent readings are taken, this could effectively highlight where a property is empty. Some raise the point that supplier employees may have access to energy information and addresses, providing opportunities for this information to be misused. While no direct accusations were made that this would lead to criminal activity, it did make a number of Panellists nervous.

Finally, Panellists were asked to reflect on how their concerns raised about data security sat in context with similar concerns in other industries. On balance, most responses highlighted that concerns were no more pronounced than in other industries in terms of the governance of data. Some Panellists even go as far as to point out that in other areas (e.g. PayPal, eBay and other online shopping sites) there are more concerns (and there are a number of Panellists who do not like to shop online because of concerns about security). However, this does not mean that reassurances are not required, as the concerns remain real; particularly as energy companies will be collecting a 'new' form of data. Some Panellist admit that they *may* be over-reacting with some of the issues and concerns that are raised over the course of the discussions, and that they expect that only relevant data will collected and shared. But sharing data is a topic of concern to many, and where high profile brands are appearing in the media for having sensitive customer data compromised on their systems, there are a number of clear issues arising from this research that will at least require effective communication in order to alleviate some of the main concerns that may arise in the early stages of smart meter implementation.

- 1. Sensitive 'personal' data will not be stored on or transmitted by the meter
- 2. Customers want control over how their data is shared with third parties
- 3. Data will only be used by suppliers to help them become more energy efficient
- 4. Systems will be subject to the strictest governance and security

3. Methodology

Overall Panel 3 methodology

The illustration below shows the overall structure of the third year of the Consumer First Panel:



Workshop events can be used to explore topics in depth, and optional interim surveys are able to quickly and cost effectively get feedback on specific issues.

Sample and recruitment

In order to ensure a representative sample of consumers in Great Britain, and also to avoid many of the frequently researched population centres, Panellists are drawn from six locations to ensure everyday consumer views are captured.

The members of the Panel change each year and this year involved new consumers from different locations. This year the Panel was held in six different locations in Great Britain. This was to give a fresh perspective and reflect the views of both rural and urban consumers.

This report details the findings from the third meeting of the third year of the Ofgem Consumer First Panel which consisted of a representative sample of 100 consumers across 6 locations in Great Britain.



Participants had been recruited purposively for a set of 3 workshops. This meant using approaches of door-to-door, on-street and 'snowballing' (i.e. developing contacts from those already recruited). They were all given information about the purpose of the Panel and of the commitment required at this stage – i.e. they would be taking part in up to 3 workshops over the year, with the potential of being asked to take part in other research in between. They were also told that an Opinion Leader member of staff would contact them for a short discussion prior to the first event (this was to ensure that they were committed to attending and is outlined in the next section). The groups were recruited using a specification based on National Statistic census data for Great Britain (2001) including the following criteria:

- Gender •
- Age •
- Ethnicity •
- Socio-Economic Group (SEG) •
- Tenure •
- Fuel poverty •

- Rural vs. Urban
- Supplier
- Electricity only vs. Gas and electricity
- Payment type
- Employment status
- Family status •

While the Panel was represented to be as nationally representative as possible, in each location certain demographics were raised or lowered according to the surrounding region. Demographics were up-weighted to ensure certain groups were represented:

Black and Minority Ethnic (BME) – overall, these areas are not wholly reflective of the ethnic mix of Great Britain. To compensate for this we up-weighted the representation **Opinion Leader**

of BMEs in London and Reading to ensure that the overall sample broadly reflects the ethnic profile of Great Britain.

- Age due to higher levels of drop out in this demographic, we up-weighted the proportion of younger Panellists.
- **Rural** we up-weighted those living in rural areas, including those living off the gas networks, predominantly from locations around Kendal and Inverness, but also from in and around Norwich.

The Panel was over recruited to cover a potential drop out rate of 10%, which is common in research. The table below shows the overall target sample for recruitment along with those who were recruited and those that actually attended the third workshop:

Sample	Target	Achieved	Attended
Gender			
Male	52	51	45
Female	56	60	55
Total	108	111	100
Age			
18-24	20	17	15
25-44	37	42	36
45-64	30	31	30
65+	21	21	19
Total	108	111	100
Ethnicity			
White British	80	92	83
White Other	3	2	2
Black or Minority Ethnic	25	16	14
Total	108	110*	99*
SEG			
АВ	23	25	23
C1	34	39	36
C2	24	26	23
DE	27	21	18
Total	108	111	100
Rural vs. Urban			
Urban	93	93	85
Rural	15	18	15
Total	108	111	100
Electricity Only			
Electricity Only	17	15	13
Electricity and gas	91	96	87
Total	108	111	100

Tenure			
Owner Occupied	63	65	59
Social Rented	27	23	20
Private Rented	18	23	21
Total	108	111	100
Fuel Poverty			
Yes	19	14	12
No	89	97	88
Total	108	111	100
Employment status			
Employed	61	74	66
Unemployed	6	11	11
Student	8	5	5
Retired	26	18	16
Looking after home / family	7	3	2
Total	108	111	100
Long term condition or disability			
Yes	22	15	15
No	86	96	85
Total	108	111	100

* one participant refused to state their ethnicity

Ensuring attendance and engagement

Once again, Panellists received a telephone call thanking them for their attendance and contribution at the second workshop, which had aimed to understand their views on the current structure of tariffs and potential models for a new tariff structure. Panellists were informed about the action taken by Ofgem in response to this and other research undertaken on the subject; its announcement that it had told energy firms to offer simpler tariffs to better help consumers to compare prices was communicated to each Panellist. This news was welcomed by many of the Panellists and proved to be a motivating factor in their ongoing participation for the Consumer First Panel.

Panellists were again given advance notice of the third workshop either via email, telephone, or text message. This was later followed up with a more detailed invitation letter giving them a brief outline of the workshop's content and emphasising the importance of their involvement. Closer to the workshop, Panellists were sent reminder calls and/ or emails and were encouraged to interact with the friends and neighbours to seek their views and experiences of the home energy sector, as part of their role as 'Citizen Researchers'. Particular attention was paid to those Panellists who had acted as 'top-up' Panellists following the first workshop, with the result that 17 out of these 18 attended the third workshop in the series.

Once again, Panellists were pro-actively asked for their feedback following the second workshop, and were also encouraged to give feedback at any time to a member of the team. A number of Panellists responded by sending through their most recent communication or recounting their experience with their energy supplier. This helped to increase their engagement at the third workshop, and give them a real sense of their input and involvement as a member of the Consumer First Panel before and after the workshop.

4. Current attitudes to supplier holding personal details

In order to explore current awareness levels surrounding energy suppliers and customer information, and to set the context for further discussion, we first asked Panellists to consider the current information they think their energy supplier holds about them, and explored how they felt about this information being held.

Some of the pieces of information that suppliers hold were seen to be obvious to Panellists. Typically, they noted details such as:

• Contact details

- Name
- Address
- Telephone number
- Email address

• Payment information

- Method of payment (direct debit, quarterly bills, pre-pay)
- Regularity of payment (based on payment method)
- Bank details (if <u>not</u> pre-pay customers)
- Usage. At this stage, when Panellists talked about "usage", they were commonly referring simply to the number of units used. Some Panellists on Economy 7 style tariffs suspected their supplier might know more about their 'patterns of usage' but only because of the tariff structure they were on.

For the most part, Panellists understood why it was necessary for suppliers to hold these details about them. They could see that they were required to provide them with a service, and there was little controversy over this.

"The information is essential to contact you and to provide you with a service"

"It's the information that you would expect them to have"

Additionaldetails and "lifestyle" information

There were many other pieces of information, however, that Panellists were more uncertain about than those outlined above. They commonly showed a tendency to either assume their supplier held additional information about them, or to even rhetorically question whether their supplier 'might' hold such information. The additional details they commonly mentioned were:

• Household characteristics

- Period of their property
- Number of bedrooms
- Number of occupants
- Tenure type

• Demographic characteristics

- Date of birth
- Age
- Gender
- Occupation

• Energy use

- Patterns of usage
- Appliances used

• Historical data

- Supplier history
- Supplier loyalty (length with supplier)
- Address history

When exploring how they felt about their supplier holding additional details about them, which they often couched as "lifestyle" information such as household characteristics and usage information, Panellists tended to fall in to one of two groups. Some took quite a considered approach, and felt that there may in fact be some benefit to the consumer of these details being held. They thought, for instance, that it might help to inform the supplier about the type of tariff the customer should be on.

"Maybe they can tell if you're on the wrong tariff"

"They would know your usage and whether you're on the right tariff"

It should be noted, however, that some of these Panellists may have been influenced by the previous discussions we have had with them, particularly the workshops we held earlier this year to inform the Retail Market Review (Panel 3.2), in which we explored the complexity of tariff structures. This may not therefore represent the 'typical' consumer view. Indeed, some other Panellists, rather than seeing the benefit in the supplier holding these additional details, felt quite defensive about it, primarily because they simply couldn't understand why the additional details were required – they seemed be beyond what the supplier required simply to provide them with the service they wanted. Without being able to see an obvious use for the details, some Panellists started to question why they were needed, and moreover, what the supplier was using them for.

"What can they do with my date of birth... email address... it's just irrelevant... I don't feel comfortable, I don't know why"

For some, this led to the feeling that their privacy was being invaded unnecessarily, too much data was being gathered and kept about them, and they found this threatening.

"You haven't got privacy in your own four walls anymore"

"If they know you're coming over 50, they can start bombarding you with stuff... with schemes for over 50s"

Bank details

It is worth noting here, for the purpose of contextualising the later discussion with Panellists about information sharing, that at this stage of discussion some Panellists felt notably sensitive about their supplier holding their banking information. This largely depended on their payment method. Direct Debit customers were more likely to be accepting of their supplier holding their bank details, since they recognised this benefited them in terms of the hassle of arranging payments in another way.

"As a supplier they have to know it and it's not a problem"

But for those with pre-payment meters, and those on a quarterly billing arrangement, who arrange their bill payments independently, it was seen as less acceptable for the supplier to require banking information in the first place. For some, bank details were seen as the prime piece of sensitive information that they felt uncomfortable having to share.

"I have concerns about anyone holding my bank details apart from me. The other details I'm not as bothered about, but certainly my bank details"

Sales activity and data protection

In all of the workshops, this initial discussion with Panellists about the information their suppliers held was heavily permeated by suspicion and negativity surrounding sales activity. Many Panellists recalled stories of "cold-callers" telephoning them trying to sell them a product or service.

"More solar heating companies are now contacting us"

"People trying to sell insurance for your gas central heating system breakdown cover"

"Harassment and debt for people who get bombarded and succumb to these calls"

It became clear throughout the series of workshops that the level of understanding of the Data Protection Act was very varied:

• Some Panellists were quite **knowledgeable** about it, and showed less concern about their details being passed elsewhere.

"You have the Data Protection Act, so they [suppliers] should keep it to themselves"

• Some were **aware** of it, but had **little understanding** of it and were therefore usually more suspicious and **less trusting** of it. These Panellists were often suspicious about how their personal data was protected, and who it might be shared with.

"I'm not sure what the rules of Data Protection are, but one suspects that they can't pass on your details...?"

 Some were unaware of the Data Protection Act and any protection on their personal details, therefore suspecting that energy suppliers and other commercial companies that held customer data were at liberty to pass the information on as and when they likes.

"All data is being shared without us knowing anyway" Opinion Leader Beyond Data Protection, Panellists also conveyed confusion over their energy supplier's role in the brokering of their customer data. Many were uncertain exactly what their supplier was allowed to do with their details, and what protocols were already in place for the protection of their information.

"There should be an option like with junk mail with a box to tick"

"Suppliers should have some sort of code of responsibility"

This being the case, Panellists commonly felt very confused and unclear about what happens with their customer information, which details might be shared, and why. This uncertainty culminated in a common feeling of a lack of control over their personal information and how it is used.

"Do customers have any control or choice over how much information is shared?"

Trust in energy suppliers to be responsible with customer data

When asked to consider how much they trusted their energy supplier to look after their personal data, Panellists tended to describe an implicit, passive level of trust. This was usually because they felt it was a necessity to provide the details the supplier requested in order to be provided with the service, and they were therefore in the position that they "had" to trust them.

"You have to trust them and assume they must be keeping it [customer data] safe"

"Don't have a choice – without trusting them with your information you wouldn't have any energy"

This passive trust, however, was, for some Panellists, affected by negative customer experiences with their supplier. One Panellist, for instance, described a scenario in which he continued to be billed by his previous supplier after moving house and switching suppliers. This negatively impacted on his perception of how his data was treated, and it was clear across several groups that even this implicit level of trust that most Panellists showed, relied heavily upon an ongoing positive customer experience.

"I would think that I can trust them up until the point that they [did something to make me mistrust them]"

"I have no reason to mistrust them [because I haven't had an experience where something went wrong]"

It should be noted that the energy industry was not singled out as being particularly unscrupulous with customer data. Indeed, this passive level of trust was common across other commercial organisations that held their customer data, such as supermarket loyalty card schemes and mobile phone providers. The only distinction that was commonly made referred more to data security than trust, where several Panellists noted that they might expect their banks to have higher security measures in place to protect their data. This was more about how their data was kept and stored, rather than their expectations as to how their data is used, which was common across all commercial organisations.

5. Understanding of and attitudes to how the sharing of information will change with smart meters

Panellists were provided with a summary presentation to remind of them of the main functions of smart meters and a broad overview of how they operate (this can be seen in appendix 2). It is important to note that smart meters had been discussed in detail at Panel event 3.1 (the focus being on perceived benefits and drawbacks of smart meters and of consumer information needs during the national rollout). As outlined at the end of chapter 1, this particular piece of work was conducted to help inform Ofgem's work on protection mechanisms that may need to be put in place for those that opt for a smart meter prior to the Government's mandated smart meter rollout.

Changes in the amount and type of information being shared

The views of Panellists on how the amount and type of information that suppliers hold about them might change with the introduction of smart meters were mixed. It was assumed by many that greater detail would be held in some form or another, with spontaneous comments largely focusing on the accuracy of consumption data (although this is something that had been covered with the summary presentation).

"Does the type of information change? It's just the same information but more accurate."

Others were less able to think of major changes.

"There won't be any difference."

"I think it will stay the same"

Few Panellists raised the issue of frequency of readings unprompted. Some comments noted they simply anticipate consumption data would be available continuously or instantly.

"The information will be more detailed – real time data."

"It is more immediate."

Benefits and drawbacks of information being shared

When asked to think in more detail about the benefits to them that sharing consumption data may bring about, Panellists generally reiterated that it would effectively mean an end of estimated billing. This had been discussed during the smart meter presentation. While estimated billing is not considered to be a 'problem' per se by all Panellists, the overall consensus was that this would be a welcome benefit.

"We wouldn't get estimated bills!"

Another benefit that was previously outlined to Panellists and re-iterated by some was the benefits to industry and Government (generally seen to be Ofgem or other relevant central Government departments) of being able to interrogate more accurate consumption data. Some Panellists expect that this will allow them to better manage the supply and demand of energy at a national level. A small number also noted that this would also be of use in reducing the nation's carbon footprint (although how this would help was not detailed in depth by Panellists). As above, these points had also been mentioned in the smart meter presentation.

"Future prediction of how much the country needs."

"I can understand the Government having the information to project how much we need as a country."

After some consideration, many Panellists also voiced the benefits that having better consumption information (via In-Home Displays) available to them will, in many cases, allow them to save money by using this feedback to be more energy efficient.

"If you've got all this information, you know what's using the electricity – it gives you the ability to decide what to use and when."

"It will benefit us. If I turn the shower on, the electric one and then the combi one, it will allow me to know which one is using the most power."

When asked to think about the benefits of customer consumption data being collected and held by energy companies, some Panellists could see benefits in terms of energy efficiency advice being fed back to them by suppliers. Some also thought that it would enable suppliers **Opinion Leader** 24 to design more appropriate tariffs for individuals (perhaps as a result of Panel 3.2's focus on tariffs).

"No. 87 is using less electricity and No. 89 is using more – let's sends them some information about insulation."

"They will be able to see if you are using the right tariff and communicate that to you."

Those Panellists that are on existing 'time of use' tariffs were particularly conscious that using energy at specific times of day can achieve cost benefits. They were typically more likely to consider the opportunity that more detailed energy consumption data could lead consumers to more appropriate tariffs.

However, there is a degree of cynicism from a number of Panellists as to whether energy suppliers will actually use this information for the good of their customers. Some felt that suppliers would be unlikely to use the information to help customers save money, and some questioned whether the information would be actively used against them to design more profitable tariffs.

"If they use it to our benefit then I wouldn't mind, but they don't ring me up to help save energy, they are self serving."

"They could use the information to bump up tariffs."

In addition to considered benefits and drawbacks related to sharing of energy use data, early on in the conversations there were some concerns aired about 'personal' details being held and transmitted on a wireless network. While it is unlikely that the smart meter itself would hold any of a customer's personal details, it is possible that some individuals may have a misconception that is the case, and that their name, address and bank details may be somehow accessible though the network.

"Can it be hacked into?"

Given the recent high profile news stories about customer details being stolen from the PlayStation Network (although this occurred post-workshops), these issues of data safety are likely to remain in people's minds for sometime. Security concerns are discussed in more detail in chapter 7.

Views on the frequency of data sharing

Panellists were asked their views on how frequently consumption data should be shared. In order to help to stimulate discussions, the workshop facilitators drew charts to represent how the resulting data might appear as collected at different frequencies.



Figure 1: Example of customer data being collected at different frequencies

Those Panellists who had considered the frequency of energy consumption data sharing tended to assume that real time data would be available to the energy companies (even if not necessarily shared in real time – i.e. a detailed breakdown sent once a day). These Panellists were however in the minority.

Many Panellists were clear that the more frequently information was shared, the more accurate and useful it would generally be; more frequent data shows more detailed patterns of use, and so areas of inefficiency can be better identified. There were however three distinct views that emerged; firstly, those that see how more frequent feedback could be used for their benefit.

"More frequently means that you can monitor information more closely and do something about it."

"Might as well just be automatically sent 24/7 so you know all the time what you're using."

Secondly, there were those who felt that 'frequent' was good, but that the example given of data being recorded every ten seconds was potentially 'overkill'. While specific frequencies that were acceptable and unacceptable were not detailed by Panellists, there was a sense that frequency data showing the use of individual appliances was a little too much detail.

"Probably a bit much – not much is going to change every half hour?"

"[It's] overkill."

Finally there were those who felt very uncomfortable that data may be shared with such frequency, with the view that this would give third parties too much information on what was happening within a private dwelling.

"It's a bit of an intrusion isn't it?"

"You haven't got privacy in your own four walls anymore."

Where Panellists were given an example of how high frequency consumption data could be used (the example given was the ability for energy companies to identify the usage patterns of white goods and provide advice about making better savings through time of use tariffs), some could see the benefits of getting this level of feedback. There did however remain a number of Panellists who were still uncomfortable about this data being available in such detail to suppliers. Some of the concerns about this (including consumption data potentially showing when dwellings are empty), are discussed in chapter 7.

It was noted at this point in discussions that the use of the term 'sharing' when related to customer data was perhaps not helpful terminology, especially when the exact method of data collection was not fully explained to participants (i.e. it was not confirmed to Panellists whether data would be viewed in real time by energy companies or collected and viewed in retrospect). Another observation is that the use of the word 'sharing' generically as a term for data being collected or recorded may have resulted in Panellists reacting more negatively, the connotation being that any data on customers that is held can be moved around freely. These points are useful learning in considering how information about smart meter use and functionality is communicated in future.

6. Attitudes towards information sharing with different bodies

As part of the overview presentation given to Panellists (shown in appendix 2), it was explained to Panellists that *"Customers' information will be shared with energy suppliers, network companies and allowed third parties"*. There were concerns raised about this at the point at which the presentation was given, prior to any scheduled discussions. Panellists were reassured that the sharing of data with other parties would be discussed later in the session, and the findings from these discussions are reported below.

At the beginning of the discussion, when asked which bodies *should* have access to energy consumption data, a number of Panellists were able to reiterate the benefits of data being shared with 'government'. Upon probing, Panellists again talked about 'government', which to them means Ofgem, and in a very small number of cases, DECC. It is worth noting that this is likely in part to be due to the fact that these organisations have been discussed together in the context of smart meters in a previous smart metering workshop (Panel 3.1), and this is likely to have influenced these responses. But it is clear that some are able to see the 'bigger picture' and imagine the benefits that more detailed and timely consumption information can have in looking forward to managing future energy supply and demand.

"I can imagine the government having the information to project how much [energy] we need as a country."

"In a move to make Britain more energy efficient, that kind of information would be useful."

At this stage it is important to distinguish between personal (individual level) and aggregated data. Most Panellists who raised the above point did so in the context of national demand and energy use (as in the quotes above) – patterns of use nationally or by region – that would be acceptable for scrutiny.

"I wouldn't mind if it was passed on without any names or addresses linked to it –they get the info but they don't know who it is."

Only a very small number of individuals raised the issue of government looking specifically at individual customer habits, though they did not provide an explanation as to why this might be the case.

"Would worry me if there was a graph somewhere in a government office and they were looking at it specifically."

"I think it will be used against us."

A small number of Panellists were of the opinion that the ability to share data with energy suppliers other than their own may have benefits in that this would 'enhance competition', although there were a number of objections to this from others who responded negatively – this may result in a considerable increase in the amount of what is (for the majority) unwanted marketing activity, specifically cold calls (either on the doorstep or over the telephone).

"I think it should be available to competitors, they could be more competitive and come and approach you with offers."

"So we'll get more telesales!"

"Too much hassle and information – it's all about money."

When asked what kind of organisations Panellists expected the allowed third parties to actually be, many assumed these organisations would be either government, as discussed, or other commercial organisations such as retailers and those selling energy efficiency measures. Given that some Panellists have varying degrees of understanding about the Data Protection regulations, there are some who believe that their data may be made available to organisations that may create a surfeit of unwanted sales contact.

"Just people trying to sell insurance for your gas central heating system!"

"More direct marketing? You would be able to opt out of that... hopefully."

"We are saturated with information and we won't listen to third parties so maybe there should be another way of communicating with customers."

These reactions gave rise to comments about whether customers would be able to opt in or out of receiving direct marketing or sales activity – a clear indication that they would wish to have control over this.

Panellists were then given examples of the types of organisations that may be allowed access to their data in some form or another (these being 'other energy service providers, e.g. energy efficiency companies providing insulation, micro generation, etc.').

"Solar panel installers- if companies came to you with genuine offers it might be good."

However, these examples still resulted in some negative comments, suggesting that this would still nonetheless result in unwanted sales activity.

"Sales calls would not be welcomed."

In order to try and consider some of the benefits of sharing information with third parties, Panellists were given the example of the ability to authorise the release of your energy use data to a home energy efficiency consultancy or similar organisation. This type of arrangement was received more positively by Panellists, as it shows how the data could be used to the customer's potential benefit, while still having control over whom it can be shared with.

"You could go yourself and put data into a website which then brings up offers."

The above examples prompted discussions on the level of control that consumers would have over what parties see their data, as well as being clear that it should be shared only in situations where it can directly benefit the consumer. Concerns about how customer data would be brokered by energy companies are fuelled by earlier discussion about the level of control individuals have about how their data is used by commercial organisations. Given that some Panellists are concerned about having such detailed energy consumption data being shared with suppliers (as outlined in chapter 5), and in combination with there being a certain level of mistrust in energy companies, there is an appetite for clearly defined guidelines about how suppliers broker their data that are biased towards the customer.

"I'd rather not give it to them automatically... I could ring [supplier] up and ask them to hand over my details."

"Happy to authorise, as long as I am in control of sharing it."

"It's in the way they approach you. It needs to be beneficial to me."

Typically, Panellists are keen to see an 'opt in' information sharing model, and many note that they would like 'allowed third parties' to be registered or approved in some cases by 'government' (and in some cases Panellists suggested 'government' or Ofgem as the body that should have oversight of this). The key is different levels of opt in, or the ability to decide which information is shared with which organisation.

"Do it like a doctor's set up, so it can only be passed on with your permission."

"They should write and ask if they can send it on – you can say yes or no."

"Want one company to contact you and the Government approves them... Needs an Ofgem or Government stamp on it."

As outlined in chapter 5, there are some Panellists who are confused about the kind of data that is under discussion as being potentially shared. After discussion, it is made clear by some that it is only consumption data plus any necessary contact details that should be made available, and when permitted. Bank details and any other sensitive personal details should not under any circumstances be made available to any other party by suppliers.

"The amount of energy that I am using, but apart from that, nothing."

"My address and energy use, but not my bank details."

Overall, there is some agreement that the sharing of energy consumption data with third parties on an ad-hoc and customer driven basis would be an acceptable scenario. Nonetheless, there are some reservations about 'third parties' and other suppliers in general. Previous Panel 3.2 work has shown how overwhelming and complex the market is at present, and there is a clear demand from consumers for simplicity. It seems that the underlying question being considered by customers in these discussions is 'will the sharing of my data create more noise and confusion in my life'? If the right protection can be put into place to ensure that consumers can significantly benefit from this, then this could go a long way to allay these concerns.

7. Security and other concerns over smart meters and the sharing of data

The previous chapters have highlighted, where relevant, areas in which Panellists have indicated concerns over the security of data during the course of the discussions. The final parts of the discussions focused on security concerns specifically, and asked Panellists whether these were genuine concerns given the ways that personal information is shared in other industries. Previously discussed security concerns and additional concerns are consolidated and discussed in detail in this final chapter.

Failure and errors in the smart metering network/systems

A number of Panellists raised the issue that the enhancement of an existing system with additional technology could increase the potential for failure. While this was not the exact terminology used by Panellists, there was a clear indication from some that they do not entirely trust technology.

"People put too much trust in computers."

"What if the network goes off? What if there is an error on the meter?"

"There's always going to be potential for problems with anything that's electronic."

The main concern arising from comments of this nature was around potential inaccuracies in consumption data and therefore the impact on a household's energy bills. Typical questions/worries were:

- How will I know that the meter is recording my consumption accurately?
- What happens to my data if there is a network or meter failure?
- If there is a failure in the system and consumption data is not recorded accurately, how will energy suppliers work out what is owed? Might I pay more than is necessary?

At the same time, there were some that were relatively unconcerned about this, or admitted that these issues might not normally be top of mind.

"We are just forcing ourselves to think of things."

Nonetheless, given that past Panel research has shown that some people can be wary of sharing data electronically (e.g. using the Direct Debit service), it is clear that these are concerns that need to be considered and addressed by suppliers in the event of some form of error or outage (even if this simply involves reassuring customers that their meter has a back-up battery in the event of power failure, or, as mentioned by some Panellists, that the accuracy of meters is checked on a periodic basis).

Compromise of smart meter networks

A related concern, and one that was raised in all Panel locations, was the potential for the smart meter network to be compromised with criminal intent. A number of Panellists question whether 'hackers' would be able to access the system.

"I'm sure someone would make it their job to hack into it."

These questions were of two forms – firstly, simply whether the system was vulnerable to attack, with no clear reasoning for why this may be an issue (i.e. what hackers would be able to achieve by accessing consumption information). Secondly, concerns arose about whether sensitive customer details would be able to be accessed in this way. This re-iterates some of the confusion about what kind of personal details are actually accessible through the network (e.g. are name, address and bank details actually stored on the mater itself). It is a reasonable conclusion for a customer to come to against the background of news items such as those reporting that Play.com and Lush's systems were both compromised in Q1 2011, leading to the loss of some customer details.

"Bank details may get passed on or hacked – it's part of everyday life."

The more recent high profile theft of customer data from the PS3 network (reported after Panel workshops had taken place) may serve to further make consumers wary of the potential for data theft unless the right assurances can be made about how sensitive data is safeguarded.

Other concerns relate to meters being 'tampered' with or sensitive information accessed this way by 'dishonest' individuals or even supplier employees, although it was not made clear by Panellists what the real motive would be for somebody to attempt this.

"Someone tweaking the machine?"

"Could someone tamper with it? Everything can be got to."

As a result of these concerns, some Panellists stated that they would expect to see the highest level of protection (one Panellist mentioned encryption) for both network access and data.

Visibility of personal data to supplier employees

One issue that was of considerable concern to a number of Panellists was the potential insight that detailed energy consumption data would provide into what is happening in a dwelling. There are concerns that if real time information (or as close to real time in the case of data sharing every ten seconds) is available, this will be able to highlight where properties are empty. In combination with the fact that supplier employees will be able to access this data alongside property addresses, there is a worry that dishonest employees may be able to misuse this information.

"This will allow them to know when there is nobody in your house."

"If you go on holiday they will know when your house is empty."

While there were no direct accusations that this could eventually form part of some organised criminal activity, it did make Panellists feel uncomfortable in some Panel locations.

Comparison with concerns on data security in other contexts and industries

Over the course of the discussions on security, it was acknowledged that in some cases Panellists were raising 'worst case' scenarios just because they had been asked to think about drawbacks and concerns. It was therefore important to moderate the discussions at the end to ensure that any concerns were considered in the context of concerns about other similar industries where sensitive data is also stored and shared (e.g. mobile companies, banks, online commerce).

On balance, most responses highlighted the fact that concerns were no more pronounced than in other industries. The 'implicit' trust that consumers have in brands and services (the fact that there is little option but to share details in order to receive products and services, and that there is little anxiety until a problem occurs) means the issues are relatively consistent across industries.

"There's a lot more stuff people could get off my laptop."

"It's probably no more of a risk than usual."

Many Panellists even go beyond this to comment that there are other issues that concern them more (and which are current).

"I'm much more concerned about Paypal and eBay."

These comments do not mean that reassurances to customers are not required, but there is acknowledgement from some Panellists that given the right information, they are unlikely to be overly concerned and some are even adamant that they think the benefits from sharing data will outweigh any potential drawbacks.

"As long as they submit the right level of information and if the meters are only transmitting usage and not constantly transmitting other information, that's OK."

"I can only see positives. People make such a mountain out of these things!"

"Smart meters will only show usage, not bank details."

Overall, some Panellists admit that they *may* be over-reacting with some of the issues and concerns that are raised over the course of the discussions. However, this does not mean that some of these issues are irrelevant. In an age where sharing data is a topic of concern to many, and where high profile brands are appearing in the media for having sensitive customer data compromised on their systems, there are a number of clear issues arising from this research that will at least require effective communication in order to alleviate some of the main concerns that may arise in the early stages of smart meter implementation.

- 5. Sensitive 'personal' data will not be stored on or transmitted by the meter
- 6. Customers want control over how their data is shared with third parties
- 7. Data will only be used by suppliers to help them become more energy efficient
- 8. Systems will be subject to the strictest governance and security

8. Appendices

Appendix 1: Smart metering agenda



Ofgem Consumer First Panel Year 3, Panel 3

Smart metering data privacy agenda

[NOTE: VoLL discussion material 7.05-9.00pm deleted as this forms part of a separate document]

6.00-6.05pm 5mins Introduction

Discussion session I: Smart Metering Information Sharing

6.05-6.20pm

15mins

Current information held by suppliers on customers

- What information do you believe your supplier currently holds about you? Spontaneous then probe (and flipchart):
 - Personal information
 - Information about your energy use
- What do you think the different elements of information are used for?
- What do you think the benefits are to you of your supplier holding this information?
- What do you think the drawbacks are to you of your supplier holding this information?
- Do you have any (other) concerns about the information that your supplier holds about you?
- Do you trust your supplier to keep your information and personal details safe? Why? Why not?
 - Are there any experiences you have had that have informed this view?
 - Do you trust suppliers more than other organisations? PROBE banks, supermarkets

6.20-6.30pm

5-10mins

Presentation / re-cap of how Smart Meters work

6.30-7.05pm

35mins

Smart Meters – changes to the type of and the way that information is shared

- Thinking about how Smart Meters work/operate, do you think there will be any changes in:
 - The type of information that your supplier holds about you? How might this change?
 - The way in which the information your supplier holds about you is used? How might this change?

Appropriateness and benefits/drawbacks of sharing information

- Thinking about the different functions that Smart Meters can perform (prompt on personal use and supplier use):
 - Why do you think there is a need to share information?
 - What elements of personal information would you feel comfortable about your supplier holding? Why?
 - What might be the benefits to you of your supplier receiving this information from your Smart Meter? PROBE tailor energy use to individuals, accurate energy monitoring / readings, relevant and timely communication from suppliers
 - What elements of personal information would you NOT feel comfortable about your supplier holding? Why not?
 - What might be the drawbacks to you of your supplier receiving this information from Smart Meters?
 - How frequently do you think data should be shared about your personal energy use?
 - How do you feel about it being shared (a) daily, (b) every half hour, (c) every 10 seconds – explain monitoring usage at different levels (i.e. every 10s = granularity of when each appliance is being used vs. daily = overview of usage)
 - Benefits and drawbacks of each?
 - How should the information being shared be treated / looked after?

Accessing and sharing the data

- Who should have access to the data?
- Who do you think are appropriate third parties mentioned in the presentation are? *PROBE Government, other private companies*

EXPLAIN: Third party generally means other energy service providers, e.g. energy efficiency companies providing insulation, micro generation, etc.

- Where information needs to be shared by agreed third parties:
 - Do you think there would be benefits by sharing this information with third parties?
 - What elements of information would you be happy to have shared? For what purposes? *PROBE usage sharing*
 - What elements of information would you NOT be happy to have shared? For what purposes?
- Are there alternatives to having data shared automatically with everybody, including suppliers, agreed third parties or network companies? *PROBE opt-in/opt-out system*
 - Under what circumstances would you wish to opt in/opt out?
 - How should such a system work?

Security concerns for sharing information and need for reassurances

- Do you have any other security concerns about the way Smart Meters work? **Gauge spontaneous reactions as much as possible** *PROBE:*
 - Possibility that you might be advised to use energy differently/more efficiently
 - Potential that you may receive more direct marketing
 - Concerns about the security of your data
 - (for all of the above) What types of people would be most concerned by this?
 - On reflection, thinking about other ways that you share information, is this actually an issue?
- As a customer, what reassurances would you need that your data was being used correctly?















Re-cap of Smart Meters

Examples of in-home displays (IHD)



opinion leade

What is an IHD?

- It is a portable device
- That will be provided to all domestic consumers

What type of information will it display?

- Current and past usage in kWh and how much it is costing/costs
- Visual information on current high and low usage
- Accurate information about your account balance

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[NOTE: VoLL slides deleted as this forms part of a separate document]