

Smart for All: Consumer experiences of smart meters

Report from phase 2
of research



Department
of Energy &
Climate Change



Action for Warm Homes

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Executive Summary

Between 2015 and 2020 over 53 million gas and electricity meters will be replaced by smart meters. This ambitious programme is intended to deliver considerable benefits to the energy supply and distribution industry as well as to energy consumers through improvements to the way energy is consumed and managed.

While there is a real opportunity for significant and tangible benefits to consumers from having a smart meter installed, the roll-out is not without risk. This risk is associated with how the costs and benefits of the smart meter programme are distributed. While the benefits to consumers include accurate billing, reduced need for meter readers to call and, not least, the potential to better manage energy in the home and reduce consumption, thus reducing energy bills, there is also considerable concern that these benefits may not be realised by all consumers; particularly those considered as vulnerable or on a low income. The distribution of benefits has increased significance because the costs of the smart meter roll out are to be borne by all energy consumers through energy bills. It therefore becomes imperative that vulnerable and low-income consumers, who may be less well placed to take advantage of all the benefits that smart metering can offer, especially those associated with reduced bills as a consequence of reduced consumption, receive special attention in order for this potential inequity to be addressed.

The need for special attention to be given to this issue has been acknowledged by Government in its 2012 Consumer Engagement Strategy which included objectives to ensure that vulnerable consumers and/or low-income consumers benefit from the roll-out. It was in this context that in 2011/12 NEA was commissioned by the Department of Energy and Climate Change and Consumer Focus (now Consumer Futures) to undertake research to examine the experience of vulnerable consumers during a smart meter installation and their support requirements. Phase one of this research focused on the installation phase and support required to engage with the smart meter and associated in-home display (IHD). Following phase one, NEA was commissioned to examine more closely the support needs of vulnerable and low-income consumers that specifically relate to enabling and sustaining engagement with smart meters and in-home displays to maximise potential benefits. This second phase of research is presented in this report.

Field work for the second phase of research took place during March 2013 and involved thirty-three participants from across the North East of England, Merseyside, East Midlands and London. The research adopted a mixed-methods qualitative approach and involved twenty-five depth interviews, predominantly by telephone and two focus groups.

Installation and advice

- The removal of the need for a meter reader to regularly call at homes with smart meters and the promise of more accurate billing were the two most immediately and easily identified benefits of having a smart meter among participants in this research. In addition, for older households the smart meter

was seen as enhancing home security due to the fact there would be no need to have visitors calling at the house to read their energy meters¹.

- Despite the removal of the need for regular physical meter readings, several participants reported still having meter readers call to their home. This created some confusion and frustration, but also, in some cases worry – particularly among those who lived alone.
- The benefits of not having a meter reader call and the promise of accurate billing appear to enhance the acceptance of smart meters. Failure for smart meters to meet the expectations of consumers however, could lead to households disengaging and questioning the value of smart meters.
- With regard to more accurate billing this research suggests consumption data communicated to households via the IHD should correspond to their bills (consumption plus additional charges e.g. standing charges or environmental taxes), as some households were found to be recording their energy expenditure and budgeting accordingly.
- Providing appropriate advice on both the smart meter and IHD, including their use and how to make effective use of them is essential if households are to be engaged, encouraged to use the IHD and to make subsequent behaviour changes with regard to their energy consumption. Current practice is not uniform. While most participants appeared to have received the advice booklet, which should be provided to all households at the time of installation, a small number did not – or could not recall having been provided with one. In these cases this lack of information and advice about their smart meter and how to make best use of the IHD and the information it can provide did appear to impact or limit the extent of consumer engagement and resulting behaviour change. A lost or misplaced booklet was also an issue for some and it was found in some cases to have a similar impact as not having been provided with one at all.
- The value of the booklet, it would seem, was limited for some because the content was too detailed or difficult to digest and understand in a meaningful way. The inclusion of energy saving tips to prompt behaviour was also welcomed by some. While a detailed booklet is useful for ensuring households have all the information they may need, a smaller user friendly, quick reference guide with simple tips on how to get the best from the IHD and smart meter would be a useful accompaniment. This could be provided in a 'quick access format, such as a small booklet with a magnetic strip to attach to the fridge.

¹ At the time of the research it was not fully understood how regularly on-site meter readers will still be required any new under Supply Licence Conditions. Information available to today suggests that annual on-site meter readings will be required. In addition, Consumer Futures suggest that infrequent meter readings will still be required to ensure the smart meter is operating correctly.

- An additional barrier to engagement that could be resolved or addressed during the installation of the smart meter is any concern that might arise about the cost of running the IHD. This issue arose unprompted during the research, but was of sufficient concern for some that it meant they unplugged and did not use their IHD. This would suggest that this issue is not only covered during installation by the installer but also referenced in any literature, such as an FAQ or quick facts section.
- The overwhelming view was that the installation of the smart meter and IHD, as well as the advice and demonstration provided by the installer was very good. The value of the advice however was limited because it was felt that the depth and quantity of the information was too much to take in at one time and so could not be retained in a way that was meaningful. In addition, it was often not until after the installer had left and the householder had used the IHD that questions arose. Despite this, participants were unlikely to contact the helpline number, as they did not consider their query to be important enough as to prompt a phone call. This finding would suggest that a follow-up or courtesy call after the immediate period following installation to check with households about how they are getting on or whether there are any outstanding queries would be of value.
- This research suggests that advice provided at the installation stage about how to use and engage with the IHD is essential. A small number of cases, those who reported that they had received inadequate information at the installation stage, were found to be less likely to engage with their IHD as well as less motivated to seek out information from elsewhere.
- During the installation stage of the smart meter roll-out, and perhaps in the literature and communications prior to installation, more could be done to highlight the energy saving and energy management benefits of having a smart meter, alongside messages of accurate billing and the reduced need for on-site meter readers which appear to have been more successfully communicated.

Engagement and behaviour change

- Four interrelated factors were found to influence the range and extent of behaviour change associated with smart meter installations. These were: perceptions of energy use prior to installation; household occupancy; financial situation; and interest in and capacity to use the IHD.
- Perceptions of energy use prior to installation were found to strongly influence participants' beliefs around whether they were able to save energy. This was found to be the case particularly among those that believed they were already careful with energy; this was often associated with their financial situation, generational norms of thrift and frugality and practices akin to under-heating.
- While low incomes, alone or in conjunction with other factors such as norms and beliefs, might drive households to restrict their energy use and so leave little capacity for behaviour change to result from the installation of a smart meter, this did not mean that those with higher incomes were necessarily

profligate. The relationship between drivers for behaviour is complex and energy use behaviours are often a product of the interplay between factors.

- In households with more than one member, especially where children or teenagers were present, the IHD [where it was being used] was often used to educate or prompt behaviour change among other family members who were perceived as being more wasteful than the primary IHD user.
- The complex interplay of vulnerabilities, particularly among the most elderly and frail, often acted as a barrier to engagement with the IHD and so limited the extent of associated behaviour change. Such barriers were found to override, in some cases, any impetus for behaviour change, for example among some of the most elderly and frail respondents who had other concerns, such as their health and so were apathetic towards the IHD and engagement in energy management. In addition, some older participants blamed themselves for not understanding or grasping how to use their IHD and often they associated this with their age. While recognising that among the older population there is a wide range of capabilities, many often very active and able in all aspects of life, this research did find that it was older and perhaps more vulnerable households that were less likely to use their IHD than other groups.
- Research suggests that maintaining engagement with the IHD is problematic. Many households who were initially engaged with their IHD subsequently failed to maintain their engagement due to disruption in the home (e.g. decoration or maintenance) or because once they had established their approximate energy use, or that of key appliances, the IHD was then not referred to.
- Among research participants it was generally felt that messages received via their IHD, such as energy saving tips and messages about cheaper tariffs or time-of-use tariffs with signals for when it was cheaper to engage in 'flexible' energy practices were generally welcomed. It was also felt that such messages would encourage or improve their engagement with the IHD and changes to energy behaviours.
- Among more able or more confident households the initial demonstration and advice from the installer appears to have been significant in motivating households to engage with their IHD; often learning through doing. Even among participants who did not engage with the more advanced features of the IHD, although many were aware of these features (including gas consumption data), having the IHD on show meant just the traffic lights were enough to prompt users to look at the display as a minimum. Low understanding and confidence about the more advanced features of the IHD were the main reasons for participants' limited engagement.

Information and support

- For most participants, consumption data presented in pounds and pence was favoured and most welcomed the possibility of having up-to-date account balances made available (including all components of the bill).

- Even while engagement with the IHD was found to reduce over time, the visual nature of the traffic light system appears to be significant in maintaining any behaviour changes that resulted from the installation of the smart meters.
- The traffic light system, while effective in communicating and encouraging behaviour change (electricity only), was the source of some concern and alarm; generating fear and feelings of not wanting to use energy, even when respondents rather would/needed to. Discussions with participants suggest that IHDs, if possible, should be calibrated to an individualised baseline in order to better reflect what is typical for that household. This would allow users to see the benefit of responding to the traffic lights. This is because what is high consumption for one household may be different in a household with a different household make-up. As such some participants felt that their IHD lights were almost always orange or red and so did not feel motivated to act. Further to this, installers should take extra care to ensure that households fully understand and are aware of how the traffic light system operates. Time should be taken to reassure households that a red light does not mean appliances should be turned off; rather the lights are a useful way of monitoring and understanding more about appliances' consumption.

Behaviour change

- While engagement with smart meters and IHDs among vulnerable households appears to be limited following the period after installation, some changes in behaviour directly resulting from the smart meter installation were observed. These were, however, associated mostly with the simpler features of the IHD (e.g. traffic lights). As such, changes in behaviour were mostly confined to practices relating to electrical appliances and lights.
- For many households, and particularly older households, keeping warm was important and a priority. Despite this, under-heating did appear to be an occurrence among some participants, although for most this is not shown to be related to the smart meter installation. Rather, cutting back on heating and energy use was generally a consequence of low incomes and unaffordable energy. For a minority of participants the smart meter installation did appear to impact on their heating practices and consumption and was largely motivated by the desire to make financial savings.
- Most of the energy behaviour changes observed were small and around non-commutable or day-to-day essentials such as cooking and cleaning. It should be noted though, these changes were being put in place by households that prior to the installation of their smart meter were already using what they considered to be a minimum amount of energy to meet their needs, and were already very careful with energy. The introduction of the smart meter meant households were able to see in what areas they might be able to reduce their energy (largely electrical) use further by making energy more visible. While the changes in practices were relatively small, the motivation was to make further financial savings and the smart meter was the enabling factor.

- Overall, the research suggests that IHDs are promoting more careful and considered use of energy or no change at all among vulnerable households, rather than excessive reductions in energy consumption arising from worry or anxiety. Smart meters appear to enhance households' awareness of energy, and as such, could in some circumstances also increase anxiety over bills; however evidence for this in this research is limited.

Support preferences

- During the smart meter roll out households would appear to benefit from secondary and complementary advice pertaining to the costs and energy savings of specific domestic energy practices, such as leaving the TV on standby. It was thought by participants that this would help to communicate the benefits of energy saving and therefore promote engagement with the IHD and support long-term behaviour changes. In addition, advice about how to resolve any technical or digital difficulties that might arise as the result of advised behaviour change would also be welcomed, for example, how to re-set a Freeview digital receiver box which may have been switched off to save energy.
- While generally not a subject of conversation among participants' social networks, smart meters were discussed and in some cases an active interest was taken by participants' family members and acquaintances, particularly on the subject of savings that could accrue from changes in energy practices.
- Particular value was attached to having someone physically demonstrate the IHD to participants in their home and the value was found to be associated with being able to have a two-way conversation with an expert and to ask questions. Also welcomed was the possibility of receiving this type of face-to-face advice again in a community or group setting where advice relating to other aspects of home energy and energy saving could be discussed too, and in connection with the smart meter but not necessarily marketed solely as a smart meter event. It was felt that this would encourage greater attendance at such events as it may be felt by some that they were being 'checked-up' on or where people may feel embarrassed about not having used their IHD very much. Such events would also be useful for households for whom the installation coincided with a stressful or busy time in their life and so were unable to fully engage and comprehend the advice provided; for example bereavement, illness or upheaval in the home.
- The possibility of issuing a DVD as a more cost-effective way of delivering top-up advice and demonstrations to households was discussed and was generally welcomed. It was felt that a DVD would be a more useful and practical learning tool than just a booklet.
- Overall, the greatest impact of smart meters appears to have been in making energy much more visible in the home, often alerting households to energy use that previously went unobserved, particularly around electrical appliances. Results suggest that any financial savings accrued by vulnerable households as a result of the smart meter roll out will be associated with electrical appliances and not gas consumption, which for many is already a resource that is used cautiously, and for some is under-

consumed. Thus, any financial savings to vulnerable households as a result of the smart meter roll out are likely to be relatively small.

- While energy suppliers were largely trusted as sources of advice and support on smart meters, there was some concern and scepticism around energy suppliers and switching and receiving advice from an agency with 'vested interests.' Receiving communications from agencies with whom households have an existing relationship, such as energy suppliers, was also seen as enhancing legitimacy, this was especially important when contact was by telephone. Alternative sources of advice specified included local charities and local authorities who were perceived as more independent and able to provide unbiased support.
- For most the overwhelming preference for mode of communication was letter. Even among those with email access who would be happy to receive email communication, a paper letter would be preferred in addition to the email. The reasoning for this appears to be the preference for having something tangible that could be referred to in future.
- Receiving messages via the IHD sparked some concern about how regular the messages would be received and how demanding they would be on households' time, for example the use of persistent beeping. In addition, participants were largely unanimous that messages should not be advertising or sales, but were more welcoming of messages that included advice or messages that could produce a direct benefit to them; for example, notice of an interruption to supply. For some this included messages about new or more beneficial tariffs, but for others, tariffs were thought to be a very confusing subject and so the preference was to discuss this directly with their supplier. Caution should be taken when considering the content and frequency of messages delivered via the IHD not to detract from the key energy saving messages and objectives.
- The offer and bundling of additional 'extra help' services, such as energy saving devices and heating controls advice, into the smart meter service was generally welcomed and viewed as beneficial. This research however, suggests that this service could be particularly valuable to low-income and vulnerable consumers who may like to implement such changes in their home, but have been unable to do so due to their inability to afford the initial financial outlay. Providing such services during the smart meter roll-out could deliver additional benefits and savings to households which may find it difficult to accrue financial savings from the smart meters themselves.

Policy insights and recommendations

- While smart meters were accepted, for the majority the level of engagement with the IHD and therefore any resulting behaviour change was mostly limited. A small number of households however were more engaged with the smart meter and happy to engage with and use their IHD. Smart meters have been particularly successful in increasing households' awareness of energy use and making energy more visible in the home. This, in turn, has generated some small changes in behaviour and suggest there may

have been some reduction in energy consumption relating mostly to the use of electrical appliances and electricity-related energy practices, e.g. cooking, watching TV, laundry etc. There does not appear to have been any significant impacts on how households use gas heating systems, rather heating practices were found to be largely associated with the unaffordable cost of energy.

- All consumers should receive as a minimum an explanation in advance of what a smart meter is, why they are receiving one, its potential benefits, and a contact number to ring to find out more. Energy suppliers should carry out a thorough check of the customer's support needs, and provide an explanation of what will happen on the day of installation, including that they will receive an IHD, and a demonstration of how to use it. Where appropriate, suppliers should suggest that the primary user of the IHD should be present for the installation and demonstration. This information should be provided by letter and ideally followed up by telephone.
- The demonstration of the IHD and subsequent information materials left by the installer must cater to the full range of learning abilities and styles. The demonstration of how to use the IHD should involve asking consumers to complete an action they have been shown. A DVD with a visual demonstration should also be provided and available in different languages, including British sign language. Customers should be encouraged to ask questions at the installation and to call the helpline if any questions arise subsequently.
- The demonstration of the IHD provided by the installer should include a clear explanation of the traffic light system. The installer should also explain clearly that the traffic lights indicate electricity consumption only, and that gas consumption is also available on the IHD. Special attention should be paid to showing consumers how to switch between gas and electricity readings. The installer should also state explicitly that the IHD itself is not costly to run and provide an annual running cost.
- The IHD mandated for roll-out should include accurate account balance information, updated in response to usage to give consumers a running total of how much they are spending and how much they are on course to pay at the end of the next billing period. NEA would ideally like to see the inclusion of the account balance displayed on the IHD, but failing this, believes that this must be fully explained to consumers at the point of installation.
- Consumers identified as being vulnerable should receive a follow-up to investigate whether there are any outstanding questions, concerns or just to see how households are managing with their new IHD and smart meter.
- In areas where suppliers identify a high proportion of minority populations, especially where English is not a first language, they should work together, and co-ordinate community engagement and demonstration activities to reach out to these communities.
- Energy suppliers and those responsible for designing support literature should be more innovative in the ways by which advice booklets and information is provided to households. For example, a top-tips fridge magnet or step-by-step quick guide to get the most from smart meters should be considered to supplement the general booklet provided.

- All demonstrations and advice literature should offer a small number of key energy efficiency tips, expressed in clear and plain language. These should include information on the comparative cost of devices (for example, cooking on the hob vs. microwave) and go beyond the standard advice to 'switch off lights' or 'switch off devices at the plug', which most consumers are already aware of.
- Messaging via IHDs should not be used as the sole means of communication for important information relating to billing or service interruptions, for example. In addition, all consumers should be made aware at the time of installation of the implications for their meter should they choose to switch supplier.
- Suppliers should have in place a distinct pathway for vulnerable customers, tailored to their needs in terms of accessibility and clarity. Where appropriate, this should include allowing extra time for installations and IHD demonstrations, clear energy use advice, additional low cost energy saving devices and referrals to other sources of assistance.
- For vulnerable consumers a staged approach to follow-up should be adopted. This should include a short courtesy follow-up call occurring up to one week after installation with a more detailed follow-up at around three months after installation, when, as it was established by this research, many households have reduced their engagement with the IHD. In addition, at six months from installation and through a variety of mediums, including mail-outs, telephone calls and some limited and specific messaging through the IHD, suppliers should seek to follow-up again and gently remind households of how to get the best from the smart meter to help ensure households are re-invigorated in their use of their IHD. A free phone number, including from a mobile, should also be printed on smart meters and IHDs encouraging consumers to call for any further information, not just 'problems'.
- IHDs should be inclusive in their design and it is recommended that household screening is undertaken at the first point of contact ahead of the installation visit to ascertain whether any member of the household would have difficulty engaging with the IHD, for example, those with a visual impairment. If the latter is the case and the standard IHD is not suitable, it is recommended that a more appropriate IHD is offered at no additional cost to the household.
- This research suggests that community events which facilitate face-to-face interaction and explanation of smart meters could have wider benefits to the roll-out and be essential for sustaining engagement. NEA believes that this type of activity will provide an environment where neighbours and other householders can come together and share their experiences in a safe and impartial setting. During the focus groups for both phases of the research, many respondents commented that they felt that the group discussion, meeting other householders who had a smart meter and being able to swap experiences, habits and tips had really helped them and re-invigorated them to go back and re-engage with their IHD. This type of activity could be run and co-ordinated in collaboration with support from the Smart Meter Central Delivery Body, which would allow smaller local community groups, grassroots third sector and frontline advice partners to engage with their existing networks of vulnerable and hard-to-reach groups. These types of forums could act as an incentive to the take-up of other energy efficiency measures which may result in more direct benefits for low income and vulnerable

householders who are perhaps already just maintaining thermal comfort, or in more severe cases, under-heating.

- A strong recommendation arising from this research is that all households have clearly explained to them that there may be an interim period when a meter reader is still required to visit their property. It should be made clear that these readings are required to ensure that the meters are functioning correctly. If it is correct that meter readers will be phased out completely, or required to visit less often, then this too must be made clear. In addition, energy suppliers should ensure that their meter reading staff or contractors are fully informed when smart meters have been installed and are able to fully explain and account for their presence should they still have need to take readings. Clear, accurate and consistent information is essential with regard to this, particularly when such features of the smart meter roll out are marketed and perceived as benefits. Failure to address this matter could result not only in apathy and mistrust among households in relation to other smart meter benefits, but could also cause confusion and alarm among vulnerable householders

1. Introduction

The roll-out of smart meters is regarded as a key government priority with more than 53 million gas and electricity meters expected to be replaced by smart meters by 2020². The roll-out of smart meters along with the associated in-home display unit (IHD) is intended to provide benefits for consumers, energy suppliers and energy networks and ultimately to improve the management of energy across the network. In April 2012 the Government published a consultation on its Consumer Engagement Strategy and the Government's response was published the following December³. The strategy's high-level objectives include ensuring that vulnerable consumers and/or low-income consumers benefit from the roll-out.

Smart meters allow two-way communication between the meter itself and energy suppliers' systems, typically providing domestic consumers with close to real-time information about energy use via an IHD. The IHD is also capable of showing near real-time data on current usage, and usage over the previous 24 hours, week, or month, in either pounds and pence or kilowatt-hours (Kwh) – or both. The information for electricity usage is updated approximately every six seconds and the information for gas usage is updated every half hour. This kind of data allows customers to track how much electricity and/or gas they are using and how far this fluctuates when different energy-consuming devices are in use or during different periods of the day, week or month.

In 2011/12, in conjunction with the Department of Energy and Climate Change (DECC) and Consumer Focus, National Energy Action (NEA) undertook research on the installation of the smart meters and IHDs during the early stages of the smart meter foundation phase⁴. During this first phase of the research a total of thirty-six in-home depth interviews were conducted with smart meter customers from both E.ON and British Gas (thirty with customers considered as vulnerable and six with non-vulnerable customers). Eight focus groups were also undertaken, six groups with vulnerable customers and two groups with non-vulnerable customers. A total of fifty British Gas and E.ON customers participated in a focus group.

Results from phase one of the research found that the installation of smart meters and IHDs was an important 'touch-point' in the roll-out process and an instance when customers have a face-to-face opportunity to find out how to use the new technology; and the benefits it can bring them. More generally, this interaction offers an opportunity for households to review and take ownership of their energy usage helping them to understand better their energy consumption and bills. This phase of the research however, also highlighted that the needs

² The national roll out of Smart meters was due to commence in 2014 with completion by 2019. A recent (May 2013) government announcement however means this is now postponed until 2015 with the completion of the national plan expected in 2020.

³ Department of Energy and Climate Change. Smart meter consumer engagement strategy – consultation. Available at: <https://www.gov.uk/government/consultations/smart-meter-consumer-engagement-strategy>

⁴ Smart meters will be installed in two stages: the foundation stage and mass roll-out stage. The foundation stage started in April 2011 and will end with the start of mass roll-out in 2015.

of vulnerable and low-income consumers require additional consideration to ensure that they are able to derive a benefit from the roll-out of smart meters.

Following the first phase of research a number of additional research questions were raised or areas were identified that required further investigation. As a result this second phase of research was commissioned in 2012 to focus more specifically on the range of barriers low income and vulnerable consumers face in relation to their ability to realise the benefits of smart meters and make recommendations on what extra help or support might be most appropriate.

Due to there being a limited amount of research in this field to date, the overall aim of the second phase of research was to further enhance understanding of the experience of smart meters among low income and vulnerable customers. In particular there was a focus on the extent to which low income and vulnerable consumers engaged with smart meters and IHDs and what, if any, behaviour change resulted from this, and to identify how appropriate behaviour change with regard to energy use can be achieved to maximise the benefit of smart meters to this group. Barriers to engagement and realisation of the benefits of smart meters identified during the first phase of research were further refined during this stage of the research.

The research is intended to inform stakeholders of good practice for the roll-out of smart meters in relation to providing support for low income and vulnerable households. As such, the report includes a series of recommendations on how to overcome challenges, as well as sharing and building on positive experiences to promote long-term engagement with smart meters and realisation of associated benefits among vulnerable and low-income households.

2. Methodology

This chapter sets out the detail of the methodology adopted throughout this second phase of research, as well as summarising the approach adopted during phase one.

2.1 Approach

Both the first and second phases of the research were conducted as pieces of qualitative research. There are a number of benefits to adopting this approach. Namely, it is able to convey a richness and intensity of detail in a way that quantitative methods cannot. It enables a more detailed and nuanced investigation of issues, answering questions of meaning, who is affected and why, what factors are involved, and why and how individuals react or respond differently to one another. In this way, and through rich descriptions rather than measurement of specific variables, a deeper investigation of the issues relating specifically to the experiences of vulnerable and low-income consumers can be facilitated⁵. Qualitative analysis also places “...more emphasis on individuals, not just the observable effect of an intervention. More and more recognition is being given to the individual in the process, not just the observable effect of 'treatment' upon a 'patient'...” (Nicholls, 2011)⁶ Thus, a qualitative approach enabled the research team to elicit a deeper understanding of which parts of the process and experience of the smart meter customer journey impacted on levels of understanding, ability to engage with the technology and to make relevant and appropriate behavioural changes, and ultimately the ability to derive some benefit from the programme.

In order to effectively address the aims of the research a mixed-methods approach was adopted and included focus groups and one-to-one telephone or face-to-face interviews with low-income and vulnerable consumers who had recently received a smart meter through their energy supplier's go-early smart meter programme (the foundation phase). The use of mixed-methods was considered to provide a useful way to achieve the breadth of information and depth of understanding made possible through qualitative techniques. Such an approach also provides different involvement options, which can be important when engaging vulnerable consumers, as it enables a degree of choice over the level and practicalities of involvement, thus capturing the views of the widest possible range of participants.

2.2 Participant recruitment

As during the first phase of research, the support of E.ON and British Gas was again secured to recruit vulnerable consumers with a smart meter to the research. Both suppliers provided the research team with a sample of their vulnerable customers that had received a smart meter prior to June 2012. The individual suppliers

⁵ Morrill et al (2000) Qualitative Analysis. Chapter 10. Available online at: www.sagepub.com/upm-data/43454_10.pdf

⁶ Nicholls, C. (2011) The Advantages of using Qualitative Research Methods. Alexander Technique College.

adopted different screening methods for identifying vulnerability and therefore the data that was provided was re-screened using NEA's own criteria (see below). Most customers in the sample however, had either been in receipt of the Warm Homes Discount, were on the Priority Services Register or had been identified through a discretionary referral system by call centre staff as having characteristics that created vulnerability and therefore had been made eligible for a specific tariff.

It should also be noted that households were often considered as vulnerable on multiple criteria (where data was available) including:

- household member(s) aged over 70
- children aged under 5 in the household
- a member of the household with a chronic physical health condition or disability
- a member of the household dependent on a carer
- a member of the household experiencing mental health conditions
- a household income of less than £10,000 per annum
- household in receipt of means-tested benefits
- language or other literacy problems, including where English may not be the first language
- household experiencing difficulty keeping their house warm in the winter

Fieldwork was undertaken during March 2013 in the North East of England, Merseyside, East Midlands and London and locations were determined by the clustering of smart meter installations. To share experiences of the information and support received before, during and after the smart meter installation, subsequent behavioural changes and what further sources of support, advice and information households would have liked to receive, the sampling frame was contacted by telephone and invited to participate in the research. Each participant was given the option of taking part in a depth interview conducted on the telephone, a depth interview conducted face-to-face or a focus group discussion.

At the point of recruitment prospective participants were again screened to determine the nature of their vulnerability. All research participants met one or more of the following descriptions:

- household member(s) aged over 70
- children aged under 5 in the household
- member of household with a limiting long-term illness or disability
- member dependent on a carer
- language barriers or English not the first language
- difficulty keeping their house warm in the winter

2.3 Sample

In total, thirty-three vulnerable households took part in the research, involving twenty-four depth telephone interviews and two focus groups (eight participants). In addition, one face-to-face depth interview was conducted in London.

Focus groups were undertaken during a period of extreme weather, including very cold temperatures and snow fall. This impacted significantly on the fieldwork and reduced the sample accordingly. Indeed, the face-to-face depth interview was originally intended to be as a focus group with six confirmed attendees; of which only one attended. Similarly, in Newcastle five attendees were confirmed to attend, but only two attended on the day. While it was disappointing not to achieve the expected numbers the interviewer was able to use the opportunity to explore in more detail participants' levels of understanding and energy consumption patterns. Six participants attended the Nottingham focus group.

2.4 Research tools

The telephone, face-to-face depth interviews and focus groups broadly covered the same issues, covering aspects of information and advice provision, engagement with the smart meter and IHD and resulting behaviour change. Topic guides were used for both the focus groups and interviews to guide the discussion but to also allow participants to shape the discussion as appropriate. Copies are included in the appendices, but in brief the topics examined included:

- experiences of having a smart meter installed
- information and advice received prior, during and following the installation visit
- energy use and engagement with the Smart meter
- future support preference

3. Smart Meter Installation

This chapter sets out findings from the research that relate specifically to the installation stage of the smart meter roll-out. This includes pre-installation communication and support and the installation process itself, including the advice and support received by the household with regard to use of the IHD.

3.1 Installation

In the majority of cases, first contact with energy suppliers was by letter and/or telephone call to inform them that they would be receiving a smart meter. Where a letter was received this was usually followed by a telephone call.

While participants did not generally have an in-depth knowledge of what a smart meter is, the majority were able to recall their initial motivation or reason for agreeing to have a smart meter installed. Predominantly this was because there would be no need for a meter reader to call, as well as the assurance of accurate billing. For older households having people coming to the house was seen at best as an inconvenience, but more often as a source of concern and suspicion, particularly with regard to security. The smart meter was therefore perceived as enhancing security as it would remove the need for them to be confronted with letting strangers into the home.

“No, I didn’t know how different it was to my old meter. Of course they did explain it to us but I was just taken by the fact that nobody would be coming to read my meter again and I thought that was just marvellous.” **Newcastle focus group participant (Female, over 60, receives Warm Homes Discount)**

It was commonly reported by participants that despite being informed that there would no longer be a need for a meter reader to call to their home, since receiving their smart meter they had continued to have meter readers visit. This caused some confusion for households as they had been informed this would no longer occur, but also concern, worry and frustration. This is illustrated well in the quotes below from participants in the East Midlands, one who was 81 and lived alone:

“Yes I would [recommend getting a smart meter to friends and family] because ...its security as well. There are all sorts of people – I shouldn’t be saying this probably but I am because it’s what I think – you don’t know who you’re letting in to your house, you really don’t today because you can switch your news on and there’s too many robberies and things like that.... You know you haven’t got a meter man coming - I’m not saying meter men are anything like that, but you just don’t know. There’s knocks on the door and they say to us old people “I’m a meter man,” they show them a badge, they let them in to be robbed.” **Nottingham focus group participant (Male, aged over 70, disability present)**

“...all I can remember him saying that they wouldn’t have to come and read my meters; it would be automatically done without anybody coming to the house. But I did phone the gas board up...because there was a gas man came to the door and I’d just have my gas and electricity bill and he said “ I’ve come to read the gas and electric” – And I said “Well, there’s no need for that” because I said it’s done automatically without anybody coming to the house. “Well I’ve got you down to read your meter.” So when you get to my age you get worried a bit.” **Nottingham focus group participant (Female, aged over 70, disability present)**

This finding would suggest that good practice would be for all householders to have explained to them that there may be an interim period during which meter readers will still visit to take the readings and check that the meters are working correctly; but that this will eventually be phased out - if this is the case. This should ideally take place during the installation visit itself as well as in any pre-installation correspondence. In addition energy suppliers could ensure that their meter reading employees or contractors are duly informed of which properties on their call lists have a smart meter installed so they are able to fully explain and account for their presence.

In addition, and as was highlighted extensively in the first phase of research, information provided to householders should be clear, accurate and consistent. This is particularly important when concerning the potential benefits of smart meters. Failure to do so, particularly in the case of meter readings, may not only result in households being confused or alarmed, but may also damage the reputation of the programme. The value and power of word of mouth should not be underestimated and souring the attitudes of one householder towards the initiative may negatively affect the value attributed to the scheme by others among households’ social networks.

With regard to other benefits of smart meters, participants were able to identify (unprompted) the advantages of accurate billing. While much of the emphasis surrounded accuracy and elimination of estimated bills, this together with the reduced need for meter readers appeared to enhance the acceptance of smart meters.

Phase one of the research revealed that some households were budgeting according to their energy usage as displayed in their IHD and keeping their own records. These records however, did not account for the additional charges to the account balance, such as environmental taxes and standing charges. Ideally, IHDs should display the account balance (consumption plus additional charges), but failing this, this should be fully explained to householders at the point of installation. There was some evidence that the absence of this might lead households to become confused or concerned that their bills, or the smart meter are not accurate; thus leading them to question the benefits the smart meter holds for them.

3.2 Advice at installation

Upon installation of a smart meter, all households are supposed to be left with an advice booklet pertaining to their IHD and smart meter. A very small number of participants in the research did not recall being left with a

booklet at all and this impacted on the extent of behaviour change and/or engagement with the smart meter or IHD.

"We did not get a handbook and the gas company never contacted us afterwards. So we just forgot about it...It has made no difference to us because we don't use it."
Nottingham Interview Participant 21

While most research participants could recall being left with a small booklet, several could not recall where they had placed the booklet and so had not referred to it. Often this was simply the case of misplacing the booklet, for example, one respondent in Newcastle who had recently had their kitchen refurbished had put their booklet 'away' during the works but was subsequently unable to locate it. A similar occurrence was reported by a respondent in Liverpool who reported misplacing the booklet while decorating, which then impacted on how often he referred to the IHD. For those who reported having lost their booklet, this was often cited as a reason for not understanding or engaging with the IHD any further. This is demonstrated by the quotes below:

"I don't remember, I don't remember seeing anything, I mean they could have but I put it away somewhere. Yeah, probably must have been something there but, you know, certainly I don't refer to it." **Merseyside interview participant 13**

"The thing is that when they put the smart meter in like, the lady said they left me a booklet, right? Now I've lost that booklet so when the lady phoned me up I said to her, "I do not look at that meter because at the end of the day I've still got to pay the bill." If I keep looking at it, it ain't going to make my bill any cheaper, but if you want to cut it down because you're looking at it, you'll be turning your gas off or your electric off because you can see you're using too much. But when it comes to it I've still got to pay the bill at the end of the day. So I do not have that on to look at, only now and again, perhaps every month just to see. But because I've lost the booklet I can't read it, if you know what I mean. Because I've lost the booklet to it I don't understand the pence and pounds and all this lot when they do them because I've lost the booklet. So I don't have it on; I just wait for my bill come in."
Nottingham focus group participant (Male, aged over 80, carer and disability present in the household)

Other, though fewer, respondents had filed their advice booklet away for reference later in a known location, or kept the booklet with their IHD for easy referral, for example, on the work bench. However, even in instances when the householder had easy access to the booklet, engagement with the IHD was not inevitable. In one case in Newcastle the booklet was located next to the IHD but was not engaged with. Upon closer investigation as to why this was, it appeared that it was the content of the booklet; that is, the format or the language used was

not easily understood or easily digestible. As such, understanding the booklet itself was also a barrier to engagement with the IHD.

"Yeah, they give you a booklet but you don't understand it. I don't understand, I didn't understand the booklet and I thought to myself that was a waste of time." **Nottingham interview participant 9**

A number of other participants stated that the content of the booklet was too dense and that was a reason for them being put off referring to it. A shorter, one-page and more concise A4 document was considered to be a better format, being *"more easily digestible and user-friendly"*. There was also some enthusiasm for the literature to include other energy saving tips to prompt behaviour change.

"He left me booklets... but I can't say I took them in that much....I mean it was quite a big booklet of instructions...They could give you sort of a quick one sheet not to use the kettle silly like I did or fill less water to do certain things. They could make a short list rather than a booklet with lots of writing and lots of...because you can't always be bothered, a sort of quick look would probably be better." **Newcastle interview participant 20 (female, aged over 70, living with a long-term illness and disability.)**

Among many participants there was limited recall of the helpline number included in the advice booklet provided. To help overcome some of the challenges to engagement associated with the literature provided, the booklets could be provided with a small magnetic strip to attach to the fridge for example, or a magnetic leaflet with some basic information, including the helpline number, to attach to the fridge to act as a prompt so households can contact their supplier for information, or indeed a new booklet if theirs goes astray.

There was also some concern about the running cost of the IHD, an issue that arose during first phase of the research too. Responses from among those that discussed the running costs of the IHDs (the issue arose unprompted as it was not included in the topic guide) suggested that this issue was not covered during the installation, but households would benefit from it being so.

"Just something I couldn't remember them actually telling me at the time and since it's been turned off and put out of the way while the kitchen was being done it just crossed my mind, I wonder how much that unit itself uses." **Newcastle focus group participant (Under 60, disability present, in receipt of Warm Homes Discount)**

The running costs of the IHD also featured as a reason for switching off and disengaging with the IHD, as shown in the quotes below:

“As I say, I didn’t understand it and I thought it was using electricity and so, as I say, I’ve just folded it all up and put it upstairs.” Nottingham interview participant 6 (female, over 60)

“The installer didn’t give us much information. He said ‘see that light – when it’s on red you are using more electricity. When it’s on green you are using less...It would have been more helpful if he had told us the benefits.... We left it on for one day then thought it was just wasting electricity so we put it in a drawer and forgot about it.” Nottingham interview Participant 21

While the cost of running the IHD was a concern for some, when participants were informed that the IHD cost approximately £1 per year to run, it was felt that this amount was acceptable. Including this information at the point of installation and in supporting literature might help overcome some of the concern and reduce this barrier to engagement.

It was widely reported that the installer of the smart meter was very good, turned-up on time, was clean and tidy, and took the time to explain and demonstrate the IHD to households, showing them how to use it. It was commonly felt however, that understanding what a smart meter is and how to engage with the IHD, as well as any advice around using energy, was a lot of information to take in at one time in a way that is meaningful and can be retained. As such, the value of the advice and support was limited, particularly among the most vulnerable, or those perhaps less engaged in energy issues to begin with. This finding is illustrated well in the quotes below:

“Yes, the man who explained the little meter he went out of his way to explain and probably it was just my fault that once he’d left the house I’d forgotten what the poor man had told me but he was thorough in telling me how to use it.” Newcastle focus group participant (female, over 60, receives Warm Homes Discount)

“Well, they did explain things to me how to use it and everything. They did. There were two men here and they did explain things to me but what they explained, I can’t remember, it’s so long.” London interview participant 1

While participants noted that they would have liked more time to ‘play’ with or become familiar with their IHD, and it was after this that questions and queries were more likely to arise, respondents also said that they were unlikely to have contacted anyone since their installation regarding their smart meter or IHD. This suggests that while households would have liked some additional guidance and information in order to optimise their use of the IHD, their questions or queries do not appear to have been considered important enough to prompt a call to the helpline or supplier.

Without the prompt to do so, the priorities of everyday life do not extend to monitoring energy usage – and where they do households believe themselves to already be energy aware and so see little value in what the IHD can tell them. To overcome this, more could be done to convey to households the benefits of the IHD and monitoring energy use beyond the messages of accurate billing and no need for meter readers to call, which appear to have been successfully communicated.

4. Smart Meter Engagement and Attitudes to Energy in the Home

In this chapter findings are presented that relate to how households use and engage with the IHDs and any resulting behaviour change. Also addressed is how barriers to positive engagement and behaviour change can be overcome and desirable energy consumption patterns sustained.

4.1 Using and engaging with the in-home display

As identified in the first phase of the research, behaviour change resulting from engagement with the IHD was found to be influenced by four key factors:

1. perceptions of energy use prior to installation
2. household occupancy
3. financial situation
4. interest in and capacity to use the IHD

These factors can work with or against each other to influence how households respond to the IHD. Respondents who felt already that they were very careful with energy and cautious of what they use (typically elderly and low-income customers) were less likely to believe there were further efficiencies which they could make. This was often associated with their personal financial situation, i.e. they were on a fixed and low income that required them to be careful, and/or generational norms associated with older households' beliefs around thrift and frugality. The quotes below demonstrate this more clearly:

*"No, probably not. I mean I keep an eye on things but as I said I've always tried to, you know, be as smart as possible in keeping down to a minimum where we can but, you know, so...but as I said I can't really say that the meter's made me drastically do something different." **Liverpool interview participant 13***

*"So being on your own you're pretty conscious of it, I mean I never leave a light on in a room if I'm not in the room. And I switch lights off constantly which really annoys my son because he just flicks lights on and I go around switching them off so I'm already very energy conscious person and if you consider finances you have to be. It's just finances is what drives me I think more than anything else." **Newcastle focus group participant (Under 60, disability present, in receipt of Warm Homes Discount)***

*"Not really, no. No. You see, as I don't do much, like I make tea and coffee and I just use the microwave for my meals because I have the Wiltshire Dinners you see so I'm not using a lot of gas and electricity like that other than the heating. It's the central heating that's usually the only power I use." **London interview participant 1***

While low income plays a significant role in the degree to which households can or do change their energy consumption patterns, income alone does not necessarily drive behaviour change. Rather it operates in conjunction with the other factors, such as household composition, values and personal circumstances (e.g. illness or disability). Similarly, while some higher-income households were less motivated by financial factors to change behaviours, they were often found to be altering their habits because of their values; for example, they simply do not like waste where they regarded it as such.

Customers with younger children and teenagers often saw the IHD as a device which will help them educate their children and support their efforts to reduce waste. A similar dynamic was also observed between some couples where one is using the IHD to encourage the other to change their behaviour.

It was evident that households who had not engaged with the IHD were not adjusting their behaviour or energy use simply because they did not have the means or impetus to do so. Barriers to behaviour change were found to be more complex than this; for example, households with multiple vulnerabilities, specifically those with mental or physical health conditions, the frail elderly and customers with low literacy found changing their behaviour particularly challenging because of their greater priorities and/or needs. This was particularly true of elderly pensioner householders where there was a sense of apathy towards making behaviour changes.

*"I don't bother with all that... I haven't no...[made any changes to my behaviour since having the smart meter or IHD installed]. No not really...It's just me so I just plod on in my own little way. I've got my health to worry about" **Liverpool interview participant 99***

4.2 None to low levels of engagement

There was only a very a small number of households who felt that the information given at the installation visit was entirely inadequate and just one who had had a negative experience with the installer themselves. But in all these instances there was virtually no engagement with the technology. There was also no motivation from either of these groups to seek out additional information from elsewhere.

Overall, the research found that older households were less likely to use the IHD. There appeared to be a distinctive generational attitude among many of the most elderly who expressed a degree of apathy or in some cases helplessness. This was, at least in part, associated with generational norms, including energy resourcefulness, frugality and thrift, often characterised by reports to already using as little energy as possible and engaging in practices that might be associated with under-heating. The series of quotes below illustrate this point:

"What can I do? The bills are sky high but I can't cut down anymore." Nottingham focus group participant 4 (Male, aged over 70, disability present)

"I haven't really changed how I do things. I've got to be careful of bills so I always put on warmer clothing. It's got to be really cold before I put the heating on. When the red lights on I go and check what's on."

"I'm very conscious about my heating and I make savings wherever I can ...No, it's [the SM] not changed my ways in any shape or form, but make no mistake about it, I do not squander...I do not throw money about [at] 8 o'clock, I will switch the heating off and the room will hold it till we go about 11 o'clock." Nottingham interview participant 9 (male, over 60)

"We haven't really [made any changes to our behaviour]...no...because we were saving things before we got it you know...it doesn't bother me really because you have to use it whether it's on high or low....but it is on high a lot more what with the grandkids being here every day now so you do worry if you know what I mean." Liverpool Interview Participant 2 (male, low income and pensioner household)

For a number of older participants, while the installer had explained the IHD, their comprehension and understanding was limited and this led to disengagement or apathy, as shown in the quotes below. In addition, one participant who was registered blind, but with some vision had their engagement curtailed by their ability to see, and therefore interact, with more than just the traffic lights on the IHD.

"...As I say, I didn't understand it so I unplugged it and I've took it upstairs to the spare bedroom and I thought I can't be bothered with it." Nottingham interview participant 6 (female, over 60)

"I never bothered with it...because I don't understand it. I don't understand it so I just leave it up here... I just make sure I have enough gas and electric to keep my wife and myself warm. That's me...they bent over backwards to [leave written information] ,I mean he showed how to use this thing but you might as well turn around and show a new-born baby how to build blocks because it just didn't go in, it didn't go in. I forgot straight away." Nottingham interview participant 9 (male, aged over 70)

"It's on all the time but I only look at the traffic lights because I can only see the colours. A lot of blind people do have some vision. I can see the colours but nothing else on the monitor. Not unless it's in large print." Liverpool interview participant 33 (female registered blind)

One participant felt guilty that she had not read or referred to her booklet really since the installation, nor had she used her IHD much in that time. This had almost prevented her from attending the focus group as she did not feel she had a lot to contribute and felt bad about her limited use of the IHD.

"I am really a disgrace because I don't use it; I've used it a couple of times you know just to see now with the gas and the electrical. I have looked at the booklet a couple of times but that's about it. I am a disgrace...You know after this discussion I might sort of try to use it." **Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)**

Others also blamed themselves for not grasping the advice and information provided to them and often associated this with their age. Again the quotes below illustrate this finding.

"No I wouldn't [know how to get information from the IHD] if somebody told me or showed me I wouldn't know. I couldn't find it. We're too old for gadgets. I mean that's okay. It's no trouble at all because it's in the cupboard, but we're too old to learn gadgets...the young people they can master everything, well we old ones we can't...I just can't grasp, I'm too old, too old to grasp new things ...I'm 82...I'm a bit up in the air." **Nottingham Interview participant 6 (aged over 80)**

"Someone told me I can find out how much the bill is going to be but I don't know how. I'm too old for gadgets...I don't know if he left written information. I've put it in the cupboard now. He did tell me but it's all gone out of my mind." **Liverpool Interview participant 13 (aged over 85, male)**

"I can't remember. I mean he told me all about it and I can't remember much to tell you the truth it's all gone out my mind. I think he told me about the lights, yellow, green and red, there was nothing else, I don't think. I can't remember." **London interview participant (Female, aged over 70, low income, hearing impairment, in energy debt)**

"They did explain at the time, but I'm nearly 90 now so when things aren't used I've got to re-fresh my memory, you know I am to blame... I go back to the booklet that I've got or my family give me an extra nudge and then it comes back." **Liverpool Interview participant 40 (female, deaf, aged over 85)**

For others there was just no interest in the smart meter, this was found more often among some of the oldest participants, but as discussed above, there are often other complicating factors including people's health and well-being which impact on their ability and capacity to engage. This is illustrated in the quotes below; the first quote is in response to being asked what they thought about their new smart meter.

“No love, I’m not interested in it all.” Nottingham interview participant 6 (aged over 80)

“He showed me how to use the display. But I just said yeah yeah-yeah. I left it on for a bit then it got turned off. It was on for about 2 weeks. I didn’t understand it. I thought it was using electricity. He spent the right amount of time, but I wasn’t well – I’ve got lung cancer. I had just had enough.” Merseyside interview participant 15

These results demonstrate that it is important to bear in mind the individual circumstances of households, particularly households that might be vulnerable and those who might have other priorities or concerns that outweigh the priority they can give to their energy use. For example, one respondent in London was dealing with recent death of her son and another, as shown in the quote above, was suffering from cancer. How installers and advice providers deal with these types of situations will require careful and sensitive consideration.

Many of the participants not engaged with their IHD also referred to the IHD’s traffic lights as being a source of irritation, particularly when their level of understanding was low. This prompted some to unplug the device and put it away. For others visual impairment was a major barrier for them in engaging with their IHD.

“It’s in the drawer. It used to be by the chair where I’m sitting. That’s why I put it off – it was getting on my nerves. I looked at the IHD when I was watching TV. It was distracting because of the lights. I don’t know what the lights mean.” Merseyside interview participant 15

“He didn’t spend much time explaining – about 2 minutes. ‘press that, press this, then that happens’. It’s already working so I just leave it. He left the booklet but I’ve got Age related Macular Degeneration (AMD) so I can’t read easily. ...”

“I can see the display –it’s big enough- well, the light. But the writing is grey on black so I miss half of it with my eyesight.”

As discussed above, some older households can often be apathetic and/or uninterested when it comes to their smart meter and IHD. But as well as being associated with age, this research suggests that this is often also associated with how the initial information and advice is provided. Thus, there is a need to take into account the individual circumstances of vulnerable individuals, which in turn impacts upon how well information is retained.

4.3 Some, though limited engagement

A number of households reported to being initially engaged with their IHD and had it plugged in for a time. Their engagement with the device however was not sustained and was associated with: a) disruption in the home e.g. decoration, or b) once the user had established their approximate consumption or that of most of their appliances, the device was then unplugged. All such households believed that they had learnt what they wanted to and adapted their energy behaviour accordingly, and/or had become more aware of which appliances and practices were more costly. Some small behaviour changes in relation to cooking practices were noticed, for example using their oven differently (e.g. cooking multiple meals simultaneously, or using the hob rather than the main oven) or using different cooking appliances (e.g. microwave or halogen oven).

*“Well, how much is my oven really using?” Cause I do quite a bit of cooking in the oven. So I did put the oven on and go and check it and then put some rings on and check it just to see what the usage was for that, really.” **Newcastle interview participant 16 (female, under 60, teenage children, not low income)***

Engagement with the IHD, household energy management and behaviour change appears to be linked to a perceived need or an external prompt to act. During discussions about what might prompt households to engage more with the IHD, the possibility of receiving regular energy saving tips delivered as a message through the IHD, such as: information about cheaper tariffs / time of use tariffs and when to shift loads and undertake flexible energy-consuming tasks in the home (e.g. laundry) were generally well received. It was felt that this might encourage them to engage more with their IHD.

Those that engaged with their IHD most also reported to looking at the device at least once a month after the immediate period following installation. A small number however said they looked at their IHD more often, sometimes several times a day. These households tended to have their IHD in a location that meant it was easily viewed, e.g. work bench, and tended not to be the oldest or most frail participants. There were also reports of having made sustained behavioural changes, particularly in relation to electrical appliances, following use of the IHD. Participants report to having learned by ‘playing around’ with the IHD and testing different appliances over time. This result suggests that for the more able households the initial demonstration by the installer was significant in giving users the confidence or motivation to engage, use and begin to understand the IHD.

Even in cases where respondents report to not using the IHD, just its presence and the traffic lights appeared to act as a prompt to at least look at the IHD. It was also found that engagement with the IHD was often limited to noticing the traffic lights rather than the more advanced functions of the IHD, such as energy use over time, amount of energy used, cost of energy used etc.

*“I do look [at the IHD] when the colours come up. I don’t ignore it.” **Newcastle participant (female, over 60, receives Warm Homes Discount)***

While for many engagement with the IHD was limited to observing the traffic light system, awareness of the more advanced features of the IHD and that they could also monitor their gas consumption was fairly high; usage of these features however was low. Despite this, the limited engagement reported by participants was often sufficient to affect small behaviour changes associated with electricity consumption, and in particular, the use of appliances. It was acknowledged by many participants that had some engagement with their IHD, that if they had a better understanding of it and were more confident about its use, then they would engage more with it.

“Yes. And I know there’s like a 30 second delay so if you were using something and it stopped there’s a slight pause before that graph goes, or the light goes down or goes back to green or whatever.”
Newcastle focus group participant (Under 60, disability present, in receipt of Warm Homes Discount)

There was an element of fear associated with using the IHD and of *‘doing something wrong’* which may result in negative consequences for users. Reassurance at the point of installation and again in the supporting literature that this wouldn’t happen would help overcome this and reduce this barrier to engagement. It would also act to encourage households to use and *‘play around’* with their IHD in order to become more confident and familiar with something which, for many, was a fairly alien device.

This research suggests that there are a number of steps that could help ensure householders are reinvigorated in their use of their IHD and that engagement and any resulting behaviour change is sustained. For example, one participant in Newcastle suggested that a step-by-step, easy to use booklet would be more helpful than the booklet actually received. This was likened to a quick start guide, such as that received with other electronic devices e.g. mobile phones, outlining the main features of the IHD.

In the interim period, energy suppliers should re-contact householders at least one to two weeks after installation to check that everything is running and operating correctly and any unanswered questions, or questions that arose after the installation, can be addressed. Furthermore, a staggered approach to contact from energy suppliers, six months from installation through a variety of mediums including mail-outs, telephone calls and some limited but specific messaging through the IHD would also act as beneficial prompts. As new services come on stream through the IHD, it is also recommended that energy suppliers further communicate the benefits of consumer engagement with their smart meters and IHDs. Overseeing this represents a key role for the smart meter Central Delivery Body.

4.4 Information on the in-home display

For most participants a further advice session on how to use the IHD would have been welcomed. In addition there were particular functions, not currently available, that participants thought would be useful. Examples of this included, ability of the IHD to tell users *“since your last bill, you have used £X of energy”* and that

information in pounds and pence would be a better unit of measurement than kilowatt hours; however this is not to say that kilowatt hours were not useful to those comfortable with the unit. In addition, it was felt that it would be useful if the IHD could display monthly and/or weekly bill updates as well as consumption, i.e. including all components of the bill.

“Because it’s okay sort of saying, “Well you’ve used 47p today” but you don’t know how it compares in total from your next bill to your last bill.”

Newcastle focus group participant (female, over 60, receives Warm Homes Discount)

While the traffic lights are enough to make users more aware of roughly how much energy appliances or energy practices use, a written statement in pounds/pence providing a breakdown of specific practices and appliances would be useful to help households understand what is typical. This could perhaps have a greater impact in terms of relating behaviour to outcomes and impacts. For example, energy saved by using lids on pans.

Participants welcomed and would like to see consumption messages that relate to their last bill. It was felt that this should be in pounds and pence and not kilowatt hours. Participants were welcoming of the idea that this sort of message could appear as a message on the IHD, something that ‘*popped-up*’ monthly or so and said, “*since your last bill you have used £X – or your bill is currently £X.*” It is important to note that households often equate their bill amount as the amount they will be debited or charged and so it is important that the amount shown includes all elements of the bill and not just consumption. If just consumption is shown then this must be made very clear, not only verbally by the installer during installation, but in all literature and future points of advice.

While in the majority of cases, smart meters and IHDs are engaged with to a limited extent during the period after installation, for most households this engagement reduces over time and the IHD fades into the background of domestic life. Despite this, some of the resulting behaviour changes, particularly regarding electricity use, appear to have been more sustained, mostly stimulated by the very visual traffic light system. This is discussed further in sub-section 4.6.

4.5 Worry and alarm

For some, the traffic light system created alarm with regard to the amount of energy being consumed. Further probing however, revealed that this fear was associated more with electricity use than gas use, and as found during phase one of this research, was associated with the traffic light system which shows electricity use only.

"I mean I suppose they're [IHD] good to some extent but it makes you very, very conscious of everything you're doing. And it makes you frightened of cooking a Sunday roast in case it's on too long, the oven... I think they're really frightening to be quite honest. Makes you feel as though you don't want to use anything...You get upset, don't you?" **Nottingham focus group participant1**

"I mean if you keep looking at that you're going to turn your gas off." You can't afford to turn your gas off for old people; you've got to have it on. But I do admit the gas prices are high –Too high. They're too high but what can you do? You either eat or heat. You either put food in your mouth or warm yourself near the fire." **Nottingham focus group participant 4 (Male, aged over 70, disability present)**

"I unpacked it, had a look at it and put it back all in the box again and put it away. As I said my daughter did say to me, "What's that you're not going to use any energy, you're going to be switching things off and not using it" so basically that is the same thing and as I say my neighbours [also with a SM] over the road said, "Oh put it away because you do have a fear of watching these things as to what you using, and you just put them off and don't use them." **Merseyside interview participant 99**

To overcome some of the alarm created by the traffic light system, this research suggests that individual IHDs should be calibrated with a baseline for each household and account for occupancy. Each should also be set to reflect current consumption patterns so that households can see the benefit of responding to the traffic light system. For example, in one case where the IHD appeared to always be on orange, this acted as a disincentive for the user to respond to it. If the traffic lights never went to green, a sense of apathy developed and a feeling that there was nothing they could do.

Based on this finding it is recommended that the advice given by installers at the point of installation and any follow-up contact should include a full and clear explanation of the traffic light system. It is imperative that households fully understand what the lights mean in relation to 'their' energy use and that householders know what to expect once the installer has left the property. In addition, households should be reassured that a red light does not mean, for example, that they should not boil the kettle or use their appliances. Rather the traffic lights should be seen as a useful tool for monitoring and understanding better how much energy is used by particular appliances and practices with the aim of informing and enabling households to make more efficient use of their energy where possible.

4.6 Smart meter-related behaviour change

As discussed above, engagement with smart meters and the IHDs by vulnerable households appears to be somewhat limited, with most engagement occurring immediately following the installation. Despite this, some

changes in behaviour were observed although they were mostly stimulated by the traffic light system rather than the more advanced features of the IHD, such as historic consumption data.

While the introduction of smart meters and IHDs into the home does not appear to have had any negative impact on how gas central heating systems are currently being used, and under-heating was evident in some cases, this was predominantly driven by income and the cost of energy. Indeed, many households, particularly older households, were very concerned that they should be able to keep warm and that this was important to them, particularly in terms of health, and should not be compromised on.

"No, I put my health as a higher priority to bills. Somehow those will get paid. I'm not going to freeze to death for nothing, I'm afraid." Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

Despite this, there was rather a lot of concern about the price of energy and participants spoke about the different practices they had for keeping warm while minimising the use of their heating. For most however, this did not appear to be driven by the smart meter and was often common practice before the smart had been installed. This is shown in the selection of quotes below:

"I'm more for saying, "Turn the gas down" because I know what the price is and the wife's put it on. "I'm cold." So it goes on." Nottingham focus group participant 4 (Male, aged over 70, disability present)

"I don't think the Smart Meter has influenced the way that I use my heating; finances have influenced the way I use my heating." Newcastle focus group participant (female, over 60, receives Warm Homes Discount)

"No. Financial, my financial situation makes me much more conscious at the moment than the meter does, I'm afraid, just because my direct debit, you know they keep wanting to put it up and things because you're not covering your cost, so out comes the blanket and down goes the heating." Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

"I mean I keep an eye on things but as I said I've always tried to, you know, be as smart as possible in keeping down to a minimum where we can but, you know, so...but as I said I can't really say that the meter's made me drastically do something different." Merseyside interview participant 13

For fewer respondents however, changes to their heating practices were observed and were characterised by changes to how frequently or how long heating systems were used for. Again households were largely motivated by the prospect of financial savings.

“Yeah, me [has made changes to their heating use]. You’d think I’d be rich wouldn’t you, with all this? I live on my own, my husband’s only home 2 days a week so we have ‘gravity type’ heating in our house. So we’ve got the hot water and the heating but in the evening, come 6 o’clock, I close the curtains, I turn the heating part of it off and go upstairs because with it being gravity the radiators up stairs are red hot. So all I’m using is my hot water for my heating. So yes that is a good trick.” **Nottingham focus group participant 1**

“I like to see how much it takes to cook chips ... how much it costs you to put the heating on.” **Newcastle interview participant 50 (male, under 60, disability present)**

As summarised earlier, changes to energy practices and reduced energy consumption tended to be associated more with electrical appliance use; for example, using a clothes dryer less often, not leaving appliances on when not used etc. One participant in Newcastle said that since having her smart meter installed she never left her laptop on while she watched TV and vice versa; she would now turn one off. Interestingly, this behaviour change was being maintained despite her IHD having been misplaced during a period of refurbishment. Another commented on how she now made sure everything was turned off at the switch when she went to bed at night. The quotes below show some more of changed practices or behaviours that have resulted following the installation of smart meters.

“Well we’ve started. Well, we put the main light on if we’re dealing with boiling water or whatever, but just like having a light so when you walk through the kitchen you’re not banging into things, we’ve got like a little light over the cooker, one little bulb, instead of these ones that were costing so it is influencing our behaviour but without causing worry. I don’t sort of have to turn the heating off.” **Nottingham focus group participant 2**

“I’m getting a little bit more conscious now because if there’s a red light I maybe not put things on, you know usually I dry things off a little and then put them in the dryer, or I sometimes now put them in the airing cupboard to sort of finish.” **Newcastle focus group participant (female, over 60, receives Warm Homes Discount)**

As discussed above, for those that engaged with their IHD, there had been some changes to energy-use, particularly around appliances. Much of this was attributed to the presence of the IHD and smart meter which had made energy more visible in the home. In addition, for many households there was agreement that the changes they had made to their energy use was sustainable and practices have since become regular, or part of their daily routine. Even when asked if these behaviours would have occurred anyway, it was felt that the IHD had played a significant part in their introduction. A series of quotes are provided below to illustrate this:

Yeah, I don't put so much water in it [kettle] now. Nottingham focus group participant 2

"It makes you conscious of what you're actually using. But on the electricity side I have because at one time I would put my computer on, look at my emails and things, and just leave that computer on and then maybe I'd go and switch the television on and watch the news, so there are two lots. Now I don't do that and I switch everything off at the way at night time, you know, apart from things that have to be left on standby but everything else is switched off. Even I take plugs out of the socket and things now which I never did before." Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

I put my washing machine on a quick wash now. I don't put it in for a full wash anymore. But the time that I've had mine, I've had plenty of time to play with mine. I do put it on and see the things going like this or when you're not using anything it's along the bottom and I do look at the price of everything as well but I think that's just come with having it for so long, you know, you learn as you go along don't you really? Nottingham focus group participant 1

"It's just because you're conscious of the fact. You know for a fact that if you want to you can go and see exactly. Say if you were somebody who is really into technology or really into energy it's great because you can go and fiddle about with it but when it's not the main focus of your life and you've got other things going on but you're still conscious because you see what you're using. So it makes you think about how can I save then? So yeah, it's a good thing." Newcastle focus group participant (Under 60, disability present, in receipt of Warm Homes Discount)

"I don't know but I think it's just helped a bit be a bit more conscious of the lights." Newcastle focus group participant (female, over 60, receives Warm Homes Discount)

"My cooking now I mostly use a halogen hob. Being on my own I use just 'cause I think that's handy, it's not heating up a big oven or..." Merseyside interview participant 99

While the changes to energy practices might appear to be small, it should be noted that for many participants their capacity to reduce or limit their energy consumption was limited. As has already been discussed, many households were already using what they considered to be a minimum amount of energy and were already careful with energy. As such, changes to behaviours were limited because many of the practices were not commutable or were day-to-day essentials; for example, cooking and washing. Small changes around these practices were possible though and constitute most of the energy changes observed among participants, such as reducing the length of the washing machine cycle, alternative ways of cooking and using less of often high energy-consuming appliances like clothes dryers. Further to this, for households where money was a concern and budgets were tight, careful use of energy was already commonplace and sometimes a worry. In some cases

however, results suggest that the IHD provided assistance by making energy, or areas where money could be saved through small changes to practices, more visible in areas not previously known about. As two participants in Newcastle commented:

“Yes, because you don’t think of it at the time. You don’t think, do you? Your computer is on and you’re just doing things. That adds up over a month if you leave that on, you know, for 6 hours a day and you’re not actually using it; it’s just sitting there using electricity. So if I’m not actually doing something on it, it gets switched off. Either or is on, neither are on at the same time anymore where they used to be at one time so yeah.” **Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)**

If I didn’t have the smart meter I wouldn’t know, only a monthly or 6 monthly seeing the direct debit’s gone up. You wouldn’t know but you can see exactly how much you’re using...You think Christ Almighty how do they charge that much? I mean I’ve worked out that all I’ve got on during the day is light on, my television, I use my microwave for probably 3 minutes and the kettle once a day and it’s costing 90 pence per day electricity.” **Newcastle interview participant 50 (male, under 60, disability present)**

Overall, the picture suggests that IHDs are promoting more careful and considered use of energy or no change at all, rather than excessive reductions in energy consumption arising from worry or anxiety. Indeed, there is little evidence to suggest that smart meters increased anxiety and worry with regard to energy use. Where worry did exist regarding energy and warmth, this was usually associated with energy prices and was already present prior to the smart meter being installed. Smart meters rather, seemed to enhance households’ awareness of energy, and as such, could in some circumstances also increase anxiety over bills; however evidence of this in this research is limited.

Regarding the longer-term impacts of the IHD on behaviour and energy, this second phase of research suggests that the majority of householders, who had not been engaged, remained so. But for the vast majority of those who were engaged, initial behaviour was modified, but engagement with the IHD then tapered off. It is important to note however, that reduced engagement with the IHD did not ultimately lead to a return to former habits. Indeed, new or modified behaviours, while often small, did appear to be long-term and sustained for most.

The greatest impact of the smart meter and IHD installation, it appears, was to make energy much more visible in the home and it is this that has contributed to households being more aware of their energy use, and in some cases being more careful with particular aspects of their use.

There does not appear to have been any significant impact on how gas central heating systems are used associated with smart meters, it would appear that this is driven more by price and affordability. Rather, behaviour change resulting from the smart meter is associated more with electrical appliance use; for example using clothes dryers less often and not leaving appliances on when not in use etc. These results suggest that financial savings resulting from the smart meter roll out may be very limited among the most vulnerable and those on the lowest incomes, many of whom are already rationing heating due to cost. Any financial savings are likely to be associated with electrical appliance use and therefore relatively small when considered as a proportion of the overall energy bill.

5. Support Preferences

The support needs of households during the smart meter roll out are addressed in this chapter. Current provision of support and advice received throughout the smart meter customer journey is considered alongside requirements post-installation; on which benefits of smart meters to the householder and sustainable behaviour change may be contingent.

5.1 Additional information and support

To help bring about behaviour change and to sustain it, other information and advice about home energy use, costs and savings would have been welcomed as secondary and complementary. Research participants discussed, unprompted, such advice in relation to how the IHD was currently being used to help inform energy practices and appeared to be associated with low levels of understanding about energy consumption in the home generally. For example, interest in how much energy practices, such as leaving a TV on standby, or leaving an appliance plugged in actually costs and therefore how much could be saved, was thought to be useful information to help reinforce messages about the benefits of saving energy, which could then be observed on the IHD.

“But I don’t put the plugs up, the switches I should say, but it would be nice to know the difference doing that... I think I would be interested in seeing how much leaving the television plugged in but off through the night, how much electricity that takes. And also if you use a computer, leave it on, how much does that use as well? That would be interesting....” Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)

“Yes, it would be good if it said, ‘Keeping your fridge on all day costs; putting your iron on for 2 hours costs; putting so and so on for 2 hours costs’. That would be a helpful thing, yes, so that you know what the electrical appliance, you know, has the biggest consumption.” Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

A small number of cases (fewer than 3) expressed, unprompted, some apprehension about what impact certain energy-saving practices might have for households; for example, having to re-set a set-top box if they are switched off. While not directly acknowledged as a potential problem, in a small number of other cases, computer and technical literacy was an issue for some. Thus, any technical problems that arise from the installation of smart meters and newly introduced energy efficient behaviours could be a barrier to those behaviours being adopted and sustained. The smart meter roll-out could assist with this by providing some simple step-by-step guidance in the literature about what to do regarding this. It is acknowledged however, that literature that applies to all may not be possible.

“Because I’m a bit of a dimwit I’m always frightened to turn things off say at the wall in case it affects the setup of the TV and the DVD.” Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)

“No, I’m not very technically minded and so I just think the Electricity Board and the Gas Board read the meter and I trust them that they’re doing it right and I just leave it at that. I think if my husband had been alive he would have said, ‘Oh yeah, it’s a good idea,’ he was very technically minded.” Nottingham participant 6 (female, over 60)

As was established during phase one of the research, participants generally felt that a follow-up, either by phone or by letter, with a step-by-step guide on how to get the most from a smart meter, or the opportunity to ask any questions would have been welcomed; or participants were not averse to this idea. In terms of when this should occur, around 1-3 months after installation was specified by one respondent, explaining that this was when she felt she had stopped engaging with her IHD. It was also felt that this would act as reminder and spark interest again.

“Yeah I mean my son-in-law would probably use a booklet but I find for older people it would probably be much easier, six easy points, you know.” Newcastle interview participant 20

“I’d say 3 months because after 3 months I think I was beginning to, not ignore it, but not take as much notice of it as I had previously been. So I would say 3 months, just a little reminder...I certainly did [lose interest]. And like I said I played with it for a while and then the novelty sort of wore off and it wasn’t in my mind as much and then something else would crop up and I’d think, “Ooh I wonder...but I would never go and look back and use it to its fullest. I can honestly say I don’t think I’ve used that little display to its fullest.” Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)

I suppose I would like that, I would like somebody to come and learn me and learn me properly so that I know what I’m doing and if they could make sure that I knew what was I doing, yeah, I would take an interest in it, I would take an interest in it then. It’s only because I’m ignorant of the fact of these modern technologies, it’s only because I’m ignorant that I just shoved it on top of the boiler, if I weren’t ignorant I should look into it more. Nottingham interview participant 9 (male)

5.2 Community-based learning

Generally, participants did not see their smart meter as a conversational topic beyond ‘*what is it?*’ and ‘*what does it do?*’ For a small number however, family members were relied on to help with bills and

technology and so they would perhaps be turned to for advice, if required. While for most smart meters did not form part of conversations with others, for a small number their smart meter and smart meters generally were the subjects of conversations with neighbours or colleagues, and in some instances others seemed quite interested by what smart meters could do in terms of the energy savings that could accrue when energy practices were modified. In one instance a participant even managed to help persuade her neighbour to have a smart meter installed, perhaps demonstrating the value of word of mouth from a trusted source.

“No I showed the family at first but I don’t know anybody else in my street that has one fitted so I think I’m the only one.” Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

“I’ve mentioned it to a couple of people at work how useful it is. I think at work there’s quite a few of us that are single parent families and struggle for pennies, so talking about how you can save a bit of money and that sort of thing. Especially friends that have got dishwashers as well, I’ve had friends to stay and stuff like that and they’ve said why are you putting it on the long way and I’ve told them why and they’re pretty astonished.” Nottingham interview participant 99 (single working parent, low income)

“Well my neighbour has had a letter from Eon saying that they want to fit the smart meter in and she says, “Oh I can’t be bothered.” But I said, “You’re going to have to have it in eventually” because I know everybody’s got to have them in haven’t they? So you know I said, “It’s quite good” so she’s going to have it done now”. Nottingham focus group participant 5

“No, I’ve never discussed it with neighbours but I’ve told my family which they live in a different part of the country that I’ve had one fitted or if they have visited I’ve shown them and I’ve said everyone in the country will eventually get one.” Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)

As discussed above, some value was attached to follow-up calls or visits and these were generally viewed positively. In addition, particular value was attached to having someone physically demonstrate the IHD and be on hand to answer any questions during a demonstration. The value in this was found to be associated with being able to have a two way conversation with an expert and opportunity to ask questions and revisit elements. Among those who would welcome this type of opportunity again, the possibility of receiving this in a group or community setting was also welcome. Furthermore, where this was discussed in detail with respondents the inclusion of advice on other aspects of energy use in the home and consumption levels of appliances also received positive feedback. These views are expressed more clearly in the quotes from the Newcastle focus group below:

“It’s interesting, just as we’re talking about it, it would have been nice for someone to come back later and see how I am using the smart meter and have you remembered how to use it. I think that little bit of reminder physically rather than a letter, or someone physically showing you a reminder afterwards might be a good thing. And then it might have stuck just that little bit more than it has.” **Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)**

“But in a way if there was a discussion group on electricity and how you can use things and how much things take to run. Say if somebody stood up and went through all different electrical appliances and said, “Well, you can do this or you can do that and that might save this or that” but also to know that to know if it’s switched off, you don’t have to reset things or... it’s for the not very technically minded people.” **Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)**

One of the concerns regarding community-based smart meter events was that they should be linked to wider energy-related issues that are important and of interest to households and not necessarily marketed as a smart meter only event. For example, they might be promoted as home energy events where the public could attend and speak to others as well as professionals about how to save energy and reduce bills. It was also felt that a community-based event meant households who perhaps feel embarrassed about not having used their IHD or engaged with their smart meter, or might feel a little pressured by someone checking-up on them, could go along to a community event and engage on their own terms, learn something and be informed without feeling intimidated. This was especially the case for one of the participants at the Newcastle focus group who, upon recruitment to the research, felt a little embarrassed about not having engaged with her smart meter and IHD and so did not initially feel like she wanted to take part.

In addition, when talking about other ways that households might be better engaged or informed about how to use and access the benefits of a smart meter, several participants described a situation where they have had other things on their mind, such as a recent bereavement, upheaval, decorating in the home or illness etc. and this inhibited their engagement. For some that were in this situation at the point of installation, having some sort of event or session where you could go along and find out more about a smart meter and ask questions about the IHD when they had more time, or were better able to process information, would be beneficial.

“Yes, that [community-based event] would be a good idea. I had a bit of a play with it at first, “Oh, look at this!” you know and then never bothered again. Just thought, “That’s monitoring what I’m using.” When you get your bill you think, “Good grief, what have I done?” But then I think I would go back and see exactly what to do but up till now I haven’t had the time, I’ve had other things on my mind, I’m afraid.” **Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)**

The benefit of community groups facilitating local energy clubs would allow vulnerable householders the opportunity to share and seek advice on behaviour change and energy saving practices in a practical and trusted setting. It should be noted however that not all participants thought they needed extra advice; this is despite them not always being actively engaged with their smart meter. In addition, households with a disability, particularly mobility-related, may not find a community-based event accessible and so may require an alternative. The findings from the research suggest that for some, an environment where vulnerable individuals can talk to others directly about smart meters, as well as other energy efficiency measures, could lead to a renewed willingness to engage with the topic of energy. This may act as an incentive to take up other energy efficiency measures to benefit low income and vulnerable householders who are potentially just maintaining thermal comfort already, or in more severe cases under-heating.

Among participants at the Nottingham focus group the possibility of issuing a DVD as a more cost-effective way of delivering top-up advice and demonstrations to households was discussed. It was felt that a DVD would be more useful and a more practical learning tool than the booklet, which it was acknowledged could be misplaced. The discussion below illustrates these views more clearly:

"I was wondering whether that was a model that you could look at but a DVD is probably more cost effective." **Nottingham focus group participant 3**

"Because you could keep going back to that, couldn't you? I mean even a book, but like you say you could lose the book very easily. But your DVD you just keep putting it in and you know...But I think yeah, a DVD would be a lot better, especially for older people as well. I think yeah I think most people have got a DVD player, you know, because I think they'd get to know it more and like you say you'd lose the book." **Nottingham focus group participant 5**

"Even if the installer kind of set you off with the lights, the kind of red, yellow, green and said, you know, now watch those for a while and then we'll contact you and tell you how you can get some more information out of it." **Nottingham focus group participant 2**

5.3 Support from other agencies

Among most households their experience and relationship with their energy supplier was generally a good one. This was based on direct experience participants have had regarding bills and support received around managing Direct Debits. Energy suppliers were trusted both as a supplier and as a provider of information and support relating to smart meters, often specified as the first place households would seek out advice about their smart meter. In addition, many commented that they have been helpful in the past. There was however, some scepticism relating to switching.

"Yes. I've never found them [supplier] to be unhelpful. They've always gone out of their way to be extremely helpful which is why I won't change my energy supplier. But in the long run you don't change because everybody comes into line with whomever. If British Gas put their money up, everybody else falls into line. If somebody else puts their money up they'll all fall into line eventually, so I don't think you gain by changing from supplier to supplier and I just like to know that if anything went wrong they are really, really helpful people and that takes that worry away. That if I ring them up they're not going to say, "Well you've been an idiot; you're getting switched off." British Gas would never do that so I just love British Gas I'm afraid."
Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

While the most preferred source of information and advice regarding smart meters was often energy suppliers, this was not universal and there was some scepticism around receiving advice from a supplier that was perceived to have a 'vested' interest, or their interests were financial. Therefore, some participants expressed an interest in additional advice and support on their smart meter from independent sources.

"I know I've got the Smart meter through the company, but, I don't know, I think it would have to be somebody that's independent of the industry, to be honest with you. So it's all kosher and it's not anything to get money out of you [laughter]."
Nottingham interview participant 99 (single working parent, low income)

"Sorry, I'd probably be slightly more trustful of an independent company really, you know, offering different advice and that. I mean I'm not mistrustful of suppliers and stuff but I suppose charities, well they probably are more sort of independent and I'd expect them to give me a more honest opinion on things but I'd take every...you know, if the council or anybody that came along with information I'd probably consider it and weigh it up."
Merseyside interview participant 13

Advice from other sources was also welcome or would be accessed if it was made available, such as a telephone helpline or for those with internet access, an online service. One respondent was very comfortable looking things up online and following initial contact from their supplier regarding her receiving a smart meter found out more about smart meters herself online. For a small number of vulnerable households however, particularly among older households, their awareness of where or whom they could turn to for advice was fairly low and so they felt quite unsure about what they would do.

"Well, I don't know where I could get advice from, I don't know, I really don't know, I don't know. I've got a friend that could come round because all my friends are my age and they haven't got a clue, and in fact a lot of them have not had it in."
Nottingham interview participant 9 (male, aged over 70)

While it was often assumed that energy-related advice would come from an energy supplier it was also thought that this enhanced legitimacy. Discussions suggested that this is partly because there is an existing relationship with energy suppliers and so any communications are assumed to be legitimate and from experts. Other sources were also trusted as much as energy suppliers and included local CABx, charities and Age UK services and the local authority.

*“Because if you got something from a supplier or like a government thing maybe through the post you would know it was more kind of a kosher kind of thing.” **Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)***

While contact by telephone was not always rejected, it was important that the caller was known to the households, i.e. their energy supplier. Cold-callers were especially unwelcome, especially after 19:00 and this form of contact is much more likely to be mistrusted or thought of as a possible scam or sales call. A letter received through the post from the supplier or from the council was felt to indicate legitimacy, which could be further enhanced by a follow-up phone call; which should be specified in the initial letter from the supplier.

For many the preference was to have something tangible that they could pick up and refer to and to aid memory. Written information was more often than not preferred, and while those with email access would be happy to receive an email, they would still like something on paper in addition to the email.

*“You see I think telephone would be fine. Then again it’s about what you remember you’ve been told which comes back to paper. When it’s on paper you can’t forget what you’ve been told, you can go back and refer to it and say, “That’s the bit...” **Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)***

5.4 Messaging through the in-home display

Many participants were extremely wary when asked whether they would like to receive information or messages via their IHD. While some thought it could be a good way of communicating advice tips, there was some concern about how frequently the messages would appear and that they should not make excessive demands on households to read them; such as the use of persistent beeping. In addition, there was a strong aversion to any form of advertising or selling being delivered via the IHD, but participants were more receptive to messages that could deliver them a direct benefit, such as being informed that there was going to be an interruption to supply or that their supplier could offer them a better tariff.

“That probably would be very good [messages about supply], actually, ‘cause then you could prepare yourself couldn’t you, with like flasks of hot drinks and what have you if needs be.” Merseyside interview participant 99

Among some participants, receiving information on tariffs via their IHD was not particularly welcomed. This appeared to be associated with the complexity surrounding tariffs. Respondents felt they would rather have a detailed conversation about this with their supplier over the telephone. There was also concern about being provided with too much information meaning it was less likely to be acted upon. This finding also suggests that additional information to households might lessen or detract from the key messages around home energy use.

“I’ve never understood all the different tariffs. I don’t see why we have to have all these different tariffs. Why don’t you just get charged for using, don’t need different tariffs; everybody the same.” Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

The issue of switching was met mostly with apathy and the belief that there is little value in switching. Others simply displayed strong loyalty to their supplier. It was felt that a smart meter would not persuade them to switch even if the process was made easier through the technology, but participants were more open to receiving information about different tariffs.

Overall, messaging via the IHD was cautiously welcomed. Results suggest that the type and amount of information provided should receive careful consideration, as should the frequency and how households would be notified that a message was waiting for them. The use of a small flashing indicator light as opposed to an audible beeping was suggested as being less intrusive. Participants also expressed that there should be a clear and simple explanation of how to delete messages.

“Perhaps if it worked like a mobile phone answer machine (“press 1 to listen to your message, 2 to save it, 3 to delete it”), that would be helpful.” Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)

5.5 Extra help

Additional services, such as the provision of advice and installation of energy saving devices; for example, reflective radiator panels or advice on how to properly use and set heating controls was generally perceived as beneficial and so welcomed. For some however, they did not feel these services were needed or they already received advice or support from a family member.

"It's like everything in one visit, isn't it. He can demonstrate everything and then also give you advice. I think that would be brilliant." Newcastle focus group participant (female, over 60, in receipt of Warm Homes Discount)

"...that would be good as well so that if they...you know, they are the experts, and if they can offer, you know, see that something that can be changed to improve efficiency then again I'd take that on board." Merseyside interview participant 13

Results from this research suggest that the offer of additional services may be of particular value to low-income households receiving a smart meter or those that are particularly vulnerable or socially isolated. One participant in Newcastle, while interested in the additional things that could be done to save energy and money, the initial financial outlay was a barrier to their doing this. Assistance to access these services at no cost for those on lower incomes could be considered as a way of enhancing the benefits of the smart meter roll-out, particularly where cost savings associated with the smart meter itself may be minimal for such households.

"Yes you see, I looked into all of those, you see I'd forgotten about that now until you mentioned that. And I went online and looked at all of those things and they are very minimal cost, but still when you're living on the breadline like I am that cost is just ridiculous. You know because I thought, oh the kettle and the things behind the radiator, and I thought that all of those things would help but of course then there's the initial cost of them and I can't afford to buy them. And that was frustrating." Newcastle focus group participant (female, under 60, disability present, in receipt of Warm Homes Discount)

6. Conclusion and Recommendations

While smart meters were largely accepted by the participants of this research, for the majority the level of engagement with the IHD was mostly limited and therefore acted as the greatest barrier to any resulting behaviour change. A small number of households however were more engaged and happy to use their IHD. Smart meters have been particularly successful in increasing households' awareness of energy use and making energy more visible in the home. This, in turn, has generated some small changes in behaviour and suggests there may have been some small reduction in energy consumption. Any reduction however is likely to be associated with the use of electrical appliances and electricity-related energy practices; e.g. cooking, watching TV, laundry etc. There does not appear to have been any significant impact on how households use their gas heating systems. Instead, heating practices were found to be largely associated with the unaffordable cost of energy.

The two most acknowledged benefits of smart meters and reasons why they appear to have been so well accepted into people's homes are the removed need for meter readers and more accurate billing. Nonetheless, this research suggests that these benefits need to be demonstrated and realised if they are to be believed. As such, it is essential that households' expectations are carefully managed, especially with regard to the continued need for meter readers, at least in the short-to-medium term.

Recommendations and policy insights

While this second phase of the research makes some key recommendations around the future support needs of vulnerable households and the value of community-based learning, many of the key findings from the first phase of the research were also confirmed.

- All consumers should receive as a minimum an explanation in advance of what a smart meter is, why they are receiving one, its potential benefits, and a contact number to call to find out more. When making the installation appointment, the energy supplier should carry out a thorough check of the customer's support needs and provide an explanation of what will happen on the day of installation. The supplier should explicitly state that the customer will receive an IHD, and a demonstration of how to use it. Where appropriate, suppliers should suggest that the primary user of the IHD should be present for the installation and demonstration. This information should be provided by letter and ideally followed up by telephone.
- The demonstration of the IHD and subsequent information materials left by the installer must cater to the full range of learning abilities and styles. The demonstration of how to use the IHD should involve asking consumers to complete an action that has been demonstrated. A DVD with a visual demonstration, available in different languages, including British sign language, should also be provided. Customers should be encouraged to ask questions at the installation and to call the helpline if any questions arise subsequently.

- The demonstration of the IHD provided by the installer should include a clear explanation of the traffic light system. In particular, the installer should explain that the red light will probably appear briefly as a result of temporary high-level use (such as using the kettle) and this is usually not a cause for alarm. The advice should include guidance on instances of when the consumer cannot readily identify the cause of the red light, and that it might be worth checking if there are devices that have been accidentally left switched on. The installer should also explain clearly that while the traffic lights only indicate electricity consumption, gas consumption is also updated and available on the IHD screen. Special attention should be paid to showing consumers how to switch between gas and electricity readings. The installer should also state explicitly that the IHD itself is not costly to run and provide an annual running cost. This information should also feature in accompanying literature.
- The IHD mandated for the roll-out should include accurate account balance information, updated in response to usage to give consumers a running total of how much they are spending and how much they are on course to pay at the end of the next billing period. This should include all elements of the bill, such as standing charges and infrastructure and environmental taxes. NEA would ideally like to see the inclusion of the account balance displayed on the IHD, but failing this, believes that this must be fully explained to consumers at the point of installation.
- In areas where suppliers identify a high proportion of minority populations, especially where English is not a first language, they should work together, and co-ordinate activities to engage with these communities. This could involve smart meter demonstration and learning events, as well as providing wider information about energy efficiency. This could be done with support from the Central Delivery Body and through engagement with a variety of local community leaders, schools, grassroots community groups, job centres, cultural hubs and religious institutions.
- Energy suppliers and those responsible for designing support literature should be more innovative in the ways they provide information to households. For example, a top-tips fridge magnet or a step-by-step quick guide to maximise engagement and benefit from smart meters should be considered to supplement the general, more detailed, booklet provided.
- All demonstrations and advice literature should offer a small number of key energy efficiency tips, expressed in clear and plain language. These should include information on the comparative cost of devices (for example, cooking on the hob vs. microwave) and go beyond the standard advice to '*switch off lights*' or '*switch off devices at the plug*', which most consumers are already aware of.
- Messaging via IHDs should not be used as the sole means of communication for important information relating to billing or service interruptions, for example. In addition, all consumers should be made aware at the time of installation of the implications for their meter should they choose to switch supplier.

- Suppliers should have in place a distinct pathway for vulnerable customers, tailored to their needs in terms of accessibility and clarity. Where appropriate, this should include allowing extra time for installations and IHD demonstrations, clear energy use advice, low-cost energy saving devices and referrals to other, sources of related assistance.
- All vulnerable consumers should receive a follow-up from their energy supplier to assess whether they are experiencing any problems or require further assistance in order to derive the most benefit from their smart meter. Given that questions were found to arise shortly after installation, a short courtesy call should occur up to one week after installation. After this a staged approach to the follow-up should be adopted, with a more detailed follow-up at around three months after installation, when, as it was established by this research, many households have reduced their engagement with the IHD. In addition, at six months from installation and through a variety of mediums, including mail-outs, telephone calls and some limited but specific messaging through the IHD, suppliers should seek to follow-up again and gently remind households of how to get the best from the smart meter to help ensure households are reinvigorated in their use of their IHD. A free phone number, including from a mobile, should be printed on smart meters and IHDs encouraging consumers to call for any further information, not just '*problems*'.
- The IHD must be inclusive in its design and it is recommended that household screening is undertaken at the first point of contact ahead of the installation to ascertain whether any member of the household would have difficulty engaging with the IHD; for example, those with a visual impairment. If the latter is the case and the standard IHD is not suitable, it is recommended that a more appropriate IHD is offered at no additional cost to the household. In addition, it is imperative that the installer leaves the IHD in an accessible place for *all* householders and potential users. This means checking who else lives in the property and ensuring that it is left within arm's reach, not just in sight.
- This research suggests that community events which facilitate face-to-face interaction and explanation of smart meters could have wider benefits to the roll-out and be essential for sustaining engagement. NEA believes that this type of activity will provide an environment where neighbours and other householders can come together and share their experiences in a safe and impartial setting. During the focus groups for both phases of the research, many respondents commented that they felt that the group discussion, meeting others who had a smart meter and being able to swap experiences, habits and tips had really helped them and motivated them to go back and re-engage with their IHD. This type of activity could be run and coordinated in collaboration with support from the Central Delivery Body, which would allow smaller local community groups, grassroots third sector and frontline advice partners to engage with their existing networks of vulnerable and hard-to-reach groups. These types of forums could act as an incentive to take up other energy efficiency measures which may result in more direct benefits for vulnerable and low-income householders who are perhaps just maintaining thermal comfort or under-heating already.

- It is recommended by this research that all households have clearly explained to them that there may be an interim period when a meter reader is still required to visit their property. It should be made clear that these readings are required to ensure that the meters are functioning correctly. If it is correct that meter readers will be phased out completely, or required to visit less often, then this too must be made clear. In addition, energy suppliers should ensure that their meter reading staff or contractors are fully informed when smart meters have been installed and are able to fully explain and account for their presence should they still have need to take readings. Clear, accurate and consistent information is essential with regard to this, particularly when such features of the smart meter roll out are marketed and overwhelmingly perceived as key benefits. Failure to address this matter could result not only in apathy and mistrust among households in relation to other smart meter benefits, but could also cause confusion and alarm among vulnerable householders.

Appendices

1. Telephone interview topic guide
2. Focus group topic guide

1. Smart Meter Tele-interview Topic Guide

Background to the Research:

Thank you for agreeing to take part in this short interview. As said in the letter I sent recently I work for National Energy Action and we are a national energy efficiency charity whose main concern is ensuring that everyone can keep warm and healthy at home. This project is funded by DECC – the government department of energy and climate change and the main aim of the interview is to find out from you your experience of living with a Smart meter and how you find using it on a day-to-day basis. We are also interested to hear your opinions about any support and assistance you have received along the way and what improvements could have made the experience better.

Note that this session is recorded only for the purposes of note taking. You will not be personally identified in any report. (Agreement?)

SWITCH ON RECORDER

Discussion Part 1: Your experience of having a smart meter installed (5 mins)

First, I would like to find out about your experience of having a smart meter installed, and in particular any information that you received.

1. First of all, we'd like to hear about what happened *before* you had your smart meter installed.
 - Can you tell me a little bit about how you found out that you would be receiving a Smart meter?
 - Did you receive any information before the installer came to fit your smart meter? [What was it (telephone call, letter)? Opinions on level/type of info, any differences amongst the group. Anything else you would have liked to know/ information liked to receive?]
2. We'd also like to find out about any information you were given *on the day*.
 - Did the installer show you how to use your Smart meter and in-home display?
 - Did they leave you any written information? [If yes, what was it? Have you referred to it? Was it helpful? Opinions]
 - When the installer left, did you feel as though you had received all the information and support you needed about your Smart meter and in-home display?

3. We would also like to find out about any additional information or support you may have received following the installation.
 - Have you heard from your supplier since your Smart Meter was installed? [If yes, what was it? If no, would you have liked to have heard from them? Opinions, how valuable, anything missing?]
 - Have you had any questions/concerns about the Smart meter or in-home display during the time since it was installed? Have you used the handbook/phone number provided by your supplier? [If yes, why was this?]
 - Have you contacted anyone else apart from your supplier about your Smart meter or in-home display? [If yes, who and why? Did you get any help from friends or neighbours?]
 - Have you heard from any other organisations in relation to your Smart Meter or in-home display? E.g. council services, voluntary sector agencies?

Discussion Part 2: Energy use and engagement with the Smart Meter (15 mins)

We would like to find out about any ways in which you may have used your Smart meter or in-home display since they were installed.

4. Firstly, we would like to understand how you find using the in-home display (or if anyone doesn't use it, the reasons for this).
 - How regularly would you say you use your in-home display?
 - For those that use the IHD, how do you find it? Is it easy to understand and use? What features do you look at?
 - If don't use it much, or not at all, why is this? Is there anything that would make you more likely to use it? [E.g. temperature display]
 - Is there any information that your in-home display doesn't currently provide but that you think would be useful?
 - Do different members of your household use the Smart meter and in-home display differently, or different amounts? [Probe any differences in understanding, usage between household members]
 - Has how much you [or other household members] use the in-home display changed over time?

- Apart from this session today, have you talked to any friends, neighbours, colleagues or others about your Smart meter and in-home display? [If yes, who and why?]
5. Now we would like to find out whether the Smart meter and in-home display have made any difference to what happens in your home and how you use energy.
- Have you noticed any changes in the way you use energy since having the Smart meter and in-home display installed? [using energy differently, using less or more for different things] If yes, why do you think that is? If no, why not?
 - How much difference has the information made to specific practices? [Cooking, lighting, heating, washing, ironing/cleaning? Any specific appliances?]
 - Do you feel that the Smart meter and in-home display have changed the way you think about using energy at home, or how much you think about it? [e.g. as a resource to be careful with, thinking about it more, worrying less/more about fuel bills or energy use etc. Probe any feelings associated with the traffic light system. When the red light shows, how does it make you feel?]
 - *For those who have made changes*, has the nature of these changed over time? If for example you think back to when you first had your Smart meter installed and compare it to how things are now? [Did anyone initially make changes but then go back to old habits? If so, how quickly did you revert back to your old behaviour? Or did anyone not make changes at first but then come round to the idea later on? If so, what prompted this? Probe change over time. For anyone who has made changes and stuck with them, what do you think has kept you on track?]
 - *For those who have made changes*, do you think it has had an overall impact on your energy consumption, or your fuel bills? [Has anyone received a bill since they got their smart meter fitted?]
 - *For those who haven't made any changes*, why do you think this is? Is there anything that your supplier or other organisations could do to help you make changes? [Or perhaps you feel that changes aren't necessary e.g. if already careful with energy use?]

Discussion Part 3: Future support preferences/recommendations (10 mins)

For the final part of the discussion, we would like to reflect back on what we have talked about so far and think about whether any additional support or advice could help you to make positive changes to how you use energy at home.

6. First of all, we would like to find out about any support that you think would be helpful to households like you that have received a Smart meter and who you think you would prefer to receive it from.

- *For those who have made changes*, is there any additional information, advice or support that you think would help you to maintain the changes that you have made so far [or would have helped you keep them up, for those who mentioned reverting back to old habits]? Or would encourage you to make *more* changes? [If yes, what form would it take? Who would you want to receive it from?]
- *For those who haven't made any changes but would like to*, is there any advice or information that you think would help you make changes? [If yes, what type of information do you think would help most? What form would you like it to take? Who would you want to receive it from?]

7. For those who have suggested that they, or other households, may benefit from additional advice or support to help them make (or keep up) changes to their energy use behaviour, we'd now like to think a little more about who (or where) you would prefer to receive it from.

- What would your preferred avenues of advice be? Who would you most trust to hear information from about reducing your energy use and/or how to use your smart meter and IHD? [Energy supplier? Council? Community Groups? Neighbours? Housing Associations? Family/friends/neighbours? Place of worship? Local MP? EST? Citizens Advice? Charities? etc.]
- What would be your preferred method of communication? Would you prefer written material? A DVD? Emails? Letters? Messages on IHD? A phone call? A home visit? A follow-up call post installation? How soon after?
- What would you think about other services being provided either as part of the installation, or soon after the installation? [Examples listed below - use as probes]

E.g. In the handbook or written info provided during installation:

- o Guides on how to switch supplier/switch tariff.
- o Advice on how to improve the energy efficiency of your home

E.g. Extra Help provided during installation:

- o Someone to help you set your heating controls to make sure that they're working properly
 - o Grants (or other programmes) available to improve the energy efficiency of your home, e.g. free insulation schemes.
 - o Benefit entitlement checks to make sure you're claiming everything you're entitled to
 - o Low cost (or free) energy efficiency measures e.g. reflective radiator panels, energy efficient light-bulbs fitted, smoke/carbon monoxide detectors
 - o Any other measures that would be helpful?

[Probe any barriers, best way to reach them, whether would be suspicious of extra help/'something for nothing' or would see as a good opportunity.]

E.g. Information via the in-home display (this might be similar to a text message)

- Notices from your supplier about any planned interruptions to your energy supply or changes to your energy bill e.g. Direct Debit, payment dates/bill reminders etc.
- Advice and support related to your Smart meter and in-home display or general energy advice [e.g. independent advice agencies?]
- Advertising or marketing from your energy supplier or other services?
- Has anyone already received any information like this on their in-home display, in addition to amount used/cost? [If yes, opinions; if no would you like this type of additional information?]

Closing question:

Have you any final thoughts about using your Smart meter and in-home display, and how its benefits could be maximised by households? Anything your supplier or others could do to support you, or households similar to you? Any recommendations? Would you recommend getting a smart meter to your friends/family?

TURN OFF RECORDER

14:35 Summary, thank you and close

Thank you very much for you contributions, they have been very valuable.

2. Focus group topic guide

Background to the Research: (20 mins arrival, refreshments, introduction)

Thank you for coming along to today's session. My name is _____ and I work for National Energy Action. We are a national energy efficiency charity whose main concern is ensuring that everyone can keep warm and healthy at home. The main aim of today's session is to find out from you your experience of living with a Smart meter and how you find using it on a day-to-day basis. We are also interested to hear your opinions about any support and assistance you have received along the way and what improvements could have made the experience better.

We have been able to do this research with funding from the Department of Energy and Climate Change; the government department responsible for issues around energy use. We will be writing a report based on what we have found out from these discussion groups, but the information contained in it will be confidential and nobody's name will be included in the report.

We hope that the report will be used by DECC to help inform the design of support programmes for other people that are to receive Smart meters, and to make suggestions about any improvements or additional types of support that could be introduced which will help you to make the most of the technology.

Role of Participation:

Your participation today is completely voluntary and you are free to contribute as much or as little as you want, and are free to leave at any time if you aren't having a good time – but we hope you are! If you don't feel happy answering some questions then please don't feel as though you have to – your participation is fully up to you.

Domestics:

1. Toilets
2. Fire escape (any planned drill?)
3. Mobile phones – please turn them off or to silent
4. We will have a break half way through, feel free to top up drinks etc. No problem if need to pop out during the group.
5. So that we can ALL make a valuable contribution we ask that you please allow everyone to have their say and to listen to everyone's view, as everyone's views are equally important and valuable. Everything you say will remain confidential.

6. Note that this session is recorded only for the purposes of note taking. You will not be personally identified in any report. (Agreement?)

SWITCH ON RECORDER

Icebreaker: Who we are - I am X and my favourite book/TV programme is...

Please say who you are and if you want to your favourite book or TV programme.

Discussion Part 1: Your experience of having a smart meter installed (15 mins)

For the first part of the discussion, we would like to find out about your experience of having a smart meter installed, and in particular any information that you received.

8. First of all, we'd like to hear about what happened *before* you had your smart meter installed.
 - Can you tell me a little bit about how you found out that you would be receiving a Smart meter?
 - Did you receive any information before the installer came to fit your smart meter? [What was it (telephone call, letter)? Opinions on level/type of info, any differences amongst the group. Anything else you would have liked to know/ information liked to receive?]
9. We'd also like to find out about any information you were given *on the day*.
 - Did the installer show you how to use your Smart meter and in-home display?
 - Did they leave you any written information? [If yes, what was it? Have you referred to it? Was it helpful? Opinions]
 - When the installer left, did you feel as though you had received all the information and support you needed about your Smart meter and in-home display?
10. We would also like to find out about any additional information or support you may have received following the installation.
 - Have you heard from your supplier since your Smart Meter was installed? [If yes, what was it? If no, would you have liked to have heard from them? Opinions, how valuable, anything missing?]

- Have you had any questions/concerns about the Smart meter or in-home display during the time since it was installed? Have you used the handbook/phone number provided by your supplier? [If yes, why was this?]
- Have you contacted anyone else apart from your supplier about your Smart meter or in-home display? [If yes, who and why? Did you get any help from friends or neighbours?]
- Have you heard from any other organisations in relation to your Smart Meter or in-home display? E.g. council services, voluntary sector agencies?

----- Break 10 minutes -----

Discussion Part 2: Energy use and engagement with the Smart Meter (30 mins)

For the second part of the discussion, we would like to find out about any ways in which you may have used your Smart meter or in-home display since they were installed.

11. Firstly, we would like to understand how you find using the in-home display (or if anyone doesn't use it, the reasons for this).
 - How many people in the group regularly use their in-home display? [If yes, how often?]
 - For those that use the IHD, how do you find it? Is it easy to understand and use? What features do you look at?
 - If don't use it much, or not at all, why is this? Is there anything that would make you more likely to use it? [E.g. temperature display]
 - Is there any information that your in-home display doesn't currently provide but that you think would be useful?
 - Do different members of your household use the Smart meter and in-home display differently, or different amounts? [Probe any differences in understanding, usage between household members]
 - Has how much you [or other household members] use the in-home display changed over time?
 - Apart from this session today, have you talked to any friends, neighbours, colleagues or others about your Smart meter and in-home display? [If yes, who and why?]

12. Now we would like to find out whether the Smart meter and in-home display have made any difference to what happens in your home and how you use energy.

- Have you noticed any changes in the way you use energy since having the Smart meter and in-home display installed? [using energy differently, using less or more for different things] If yes, why do you think that is? If no, why not?
- How much difference has the information made to specific practices? [Cooking, lighting, heating, washing, ironing/cleaning? Any specific appliances?]
- Do you feel that the Smart meter and in-home display have changed the way you think about using energy at home, or how much you think about it? [e.g. as a resource to be careful with, thinking about it more, worrying less/more about fuel bills or energy use etc. Probe any feelings associated with the traffic light system. When the red light shows, how does it make you feel?]
- *For those who have made changes*, has the nature of these changed over time? If for example you think back to when you first had your Smart meter installed and compare it to how things are now? [Did anyone initially make changes but then go back to old habits? If so, how quickly did you revert back to your old behaviour? Or did anyone not make changes at first but then come round to the idea later on? If so, what prompted this? Probe change over time. For anyone who has made changes and stuck with them, what do you think has kept you on track?]
- *For those who have made changes*, do you think it has had an overall impact on your energy consumption, or your fuel bills? [Has anyone received a bill since they got their smart meter fitted?]
- *For those who haven't made any changes*, why do you think this is? Is there anything that your supplier or other organisations could do to help you make changes? [Or perhaps you feel that changes aren't necessary e.g. if already careful with energy use?]

----- **Optional break 10 minutes** -----

Discussion Part 3: Future support preferences/recommendations (20 mins)

For the final part of the discussion, we would like to reflect back on what we have talked about so far and think about whether any additional support or advice could help you to make positive changes to how you use energy at home.

13. First of all, we would like to find out about any support that you think would be helpful to households like you that have received a Smart meter and who you think you would prefer to receive it from.

- *For those who have made changes*, is there any additional information, advice or support that you think would help you to maintain the changes that you have made so far [or would have helped you keep them up, for those who mentioned reverting back to old habits]? Or would encourage you to make *more* changes? [If yes, what form would it take? Who would you want to receive it from?]
- *For those who haven't made any changes but would like to*, is there any advice or information that you think would help you make changes? [If yes, what type of information do you think would help most? What form would you like it to take? Who would you want to receive it from?]

14. For those who have suggested that they, or other households, may benefit from additional advice or support to help them make (or keep up) changes to their energy use behaviour, we'd now like to think a little more about who (or where) you would prefer to receive it from.

- What would your preferred avenues of advice be? Who would you most trust to hear information from about reducing your energy use and/or how to use your smart meter and IHD? [Energy supplier? Council? Community Groups? Neighbours? Housing Associations? Family/friends/neighbours? Place of worship? Local MP? EST? Citizens Advice? Charities? etc.]
- What would be your preferred method of communication? Would you prefer written material? A DVD? Emails? Letters? Messages on IHD? A phone call? A home visit? A follow-up call post installation? How soon after?
- What would you think about other services being provided either as part of the installation, or soon after the installation? [Examples listed below - use as probes]
-

E.g. In the handbook or written info provided during installation:

- o Guides on how to switch supplier/switch tariff.
- o Advice on how to improve the energy efficiency of your home

E.g. Extra Help provided during installation:

- o Someone to help you set your heating controls to make sure that they're working properly
- o Grants (or other programmes) available to improve the energy efficiency of your home, e.g. free insulation schemes.
- o Benefit entitlement checks to make sure you're claiming everything you're entitled to
- o Low cost (or free) energy efficiency measures e.g. reflective radiator panels, energy efficient light-bulbs fitted, smoke/carbon monoxide detectors
- o Any other measures that would be helpful?

[Probe any barriers, best way to reach them, whether would be suspicious of extra help/'something for nothing' or would see as a good opportunity.]

E.g. Information via the in-home display (this might be similar to a text message)

- Notices from your supplier about any planned interruptions to your energy supply or changes to your energy bill e.g. Direct Debit, payment dates/bill reminders etc.
- Advice and support related to your Smart meter and in-home display or general energy advice [e.g. independent advice agencies?]
- Advertising or marketing from your energy supplier or other services?
- Has anyone already received any information like this on their in-home display, in addition to amount used/cost? [If yes, opinions; if no would you like this type of additional information?]

Closing question:

Have you any final thoughts about using your Smart meter and in-home display, and how its benefits could be maximised by households? Anything your supplier or others could do to support you, or households similar to you? Any recommendations? Would you recommend getting a smart meter to your friends/family?

TURN OFF RECORDER

14:35 Summary, thank you and close (10 mins)

Thank you very much for your contributions, they have been very valuable.

Brief summary of discussions - mention a few key points that were particularly useful/ main issues to be taken forward.

What next?

We will now take your thoughts, comments and views and put them together into a report so that we can make recommendations based on what you have told us. We hope that this will help the government and energy suppliers to develop and improve awareness about Smart meters and how to support people in accessing the benefits. We are talking to people at different places around the country, so we will bring all of your views together to give an overall picture. Any views or comments included in the report will be anonymous and no names will appear anywhere, but if you have any concerns about this please feel free to speak to us about it.

If you have any questions we are pleased to take them now or you can contact us at a later date. Give details –where report will be available, how can contact us.

We have also put together some little packs for you with some information about keeping warm in winter and we also have some gift vouchers to say thank you for your giving up your time today; we really appreciate you giving up your afternoon to talk to us.

Any Final Questions/Comments

Many thanks!