



Energy and Climate Change Committee

Oral evidence: [Progress of smart meter roll-out](#), HC 665,
Tuesday 2 December 2014

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Written evidence from witnesses:

- [British Gas](#)
- [Skanska](#)
- [E.ON](#)
- [Ovo Energy](#)
- [National Energy Action](#)
- [Secure Meters Group](#)

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Members present: Mr Tim Yeo (Chair); Mr Peter Lilley; Christopher Pincher; John Robertson; Sir Robert Smith; Graham Stringer; Dr Alan Whitehead

Questions 1-89

Witnesses: **Jorge Pikunic**, Managing Director of Smart Metering, British Gas, **Robert J Murray**, Sector Director, SMART Grids, Skanska, **Don Leiper**, Director of New Business, E.ON, **Melissa Gander**, Managing Director of In-Home Technology, Ovo Energy, **Jenny Saunders**, Chief Executive, National Energy Action, and **Sanjaya Singhal**, Chief Executive Officer, Secure Meters Group, gave evidence

Examination of Witnesses

Witnesses: **Jorge Pikunic**, Managing Director of Smart Metering, British Gas, **Robert J Murray**, Sector Director, SMART Grids, Skanska, **Don Leiper**, Director of New Business, E.ON, **Melissa Gander**, Managing Director of In-Home Technology, Ovo Energy, **Jenny Saunders**, Chief Executive, National Energy Action, and **Sanjaya Singhal**, Chief Executive Officer, Secure Meters Group, gave evidence.

Q1 Chair: Good morning and thank you very much for coming in. Would you like just very briefly to introduce yourselves; just the briefest possible description of what you do? Maybe starting at your far left there.

Sanjaya Singhal: I am Sanjaya Singhal. I am the entrepreneur behind Secure Meters, which is a smart metering equipment provider, but also the entrepreneur behind a small independent energy supplier, Utilita. The reason for this combination was that when the mandate was being discussed we thought if it was about customers saving money we needed to understand customers better before we could make the right equipment for them, and therefore we invested in a supplier to understand the customer's perspective and the supplier's perspective. That is my background.

Jenny Saunders: Jenny Saunders, I am Chief Executive of National Energy Action and we have been involved in a number of studies and trials in the foundation stage for smart roll-out.

Melissa Gander: Melissa Gander. I work for Ovo Energy. I am Managing Director of In-Home Technology, which is Ovo's smart metering subsidiary. I am sure you are familiar with Ovo Energy, we are a small independent supplier with just over 400,000 customers.

Don Leiper: Don Leiper, Director of New Business at E.ON and my responsibilities cover energy efficiency—eco and warm homes discount and things like that—as well as IT and change productions and our smart metering programme for the purposes of today, as well as some other responsibilities.

Robert Murray: Good morning, I am Robert Murray. I am the Sector Director for Skanska on SMART Grids, smart metering construction. We are an installer constructor. I am representing a joint venture between Skanska and GE called Smart Grid Enterprise.

Jorge Pikunic: Good morning, I am Jorge Pikunic. I am Managing Director for British Gas Smart Metering, which is the unit of British Gas that is responsible for rolling out smart meters in residential properties.

Q2 Chair: Thank you very much. As we go through you need not all feel obliged to respond to every question. Some of them may be much more specific to one or two of you, but I would like to start with a general question and that is how do you think the roll-out of smart meters is going so far.

Jorge Pikunic: There are some things that are going very well. We continue to roll out smart meters. At British Gas, for example, we have rolled out over 1.5 million meters but 1.1 million are for residential customers, so that is quite positive.

The benefits to customers of smart have become apparent and that is some of the new news. If you look at, for example, our customers with smart are getting some insights on their consumption. They are starting to reduce their energy consumption and we see some consumption reductions on average of over 2%, and some customers are saving a lot more than that. To do that we not only deploy, for example, their in-home displays but we have developed a smart energy report to help them understand their energy a lot better.

In the infrastructure sense, it is also going very well. We continue to make progress on foundation and we are now moving towards the enduring phase of the roll-out.

So overall where we are today in the roll-out compared to when the Committee last looked at this, the big difference is that there is the volume of smart meters out there and the customer has already seen the benefits of that.

Melissa Gander: We have rolled out so far 25,000 meters, mostly this year; so in November we rolled out 5,000, so our roll-out is increasing. We found that there have been some challenges so far, mainly around installer capacities. We would like to roll out more meters but there is a challenge with capacity at the moment in the market. We are also a bit concerned going forward around the impact that the DCC may have on our roll-out but so far we feel it has been successful. We receive positive feedback from our customers on our meters and the installation experience.

Don Leiper: I would echo my colleagues here in that we have rolled out 350,000 meters now at E.ON and we are seeing the customer benefits starting to hit now. Our customers are much happier with the service they get when they have a smart meter than when they have a traditional meter, and that is reflected very clearly in terms of how they interact with us. They interact with us less frequently; there are fewer problems arising on their accounts; their satisfaction ratings are higher; their desire to leave us is lower, which is an endorsement; and we are also seeing energy efficiency in that they are reducing their consumption very well.

So all of the customer-related aspects of the smart roll-out are being proved very well in the foundation phase and the sooner we can progress to the full roll-out the better.

Jenny Saunders: Could I just add that the roll-out in the foundation stage has been delivered more to confident consumers. We are still waiting to find evidence that all and more vulnerable customers can take advantage of what smart might bring, and some early trials have shown that, yes, people have changed their behaviour use but not necessarily long term, and they do need an awful lot of support through that. We are finding there is growing evidence but we are not convinced that everything is in place yet to make us confident that all customers are going to have access and will equally benefit from smart.

Sanjaya Singhal: From our perspective the SMETS 1 roll-out—the foundation-phase specification—is going well. Utilita supports the bottom three deciles of the income spectrum and with over 150,000 customers being served with smart meters at the bottom decile. Using the most expensive equipment Utilita is able to offer the cheapest prices.

Customers are not seeing the energy reduction that one anticipated, but customers still love the product because of the convenience and their ability to manage their energy better and more conveniently. So things like vending over the telephone, vending from iPads or smartphones, that sort of thing, is what customers appreciate. We are getting traction in the prepayment space, no doubt about that. Utilita is growing at the rate of 3,500 customers a week on the back of this product.

Robert Murray: We would like to see more sharing of the foundation phase, the lessons learnt so far. There is a lot of good knowledge there, which has not been shared yet.

Q3 Chair: It has been suggested to us that having smart meter roll-out led by multiple suppliers rather than a small number of DNOs means there is more incompatibility in the systems. Is that anybody's experience?

Sanjaya Singhal: DNOs I do not think could roll them out because we already have two. We have gas and electricity as different distribution network operators. 70% of the homes are dual fuel with gas and electricity, so anyway you have two agencies.

For customers to develop and get the best benefits they need to understand that product and, as suppliers, one of our jobs when we do the install is to spend time with the customer training them. DNOs may not have that same incentive. I do not see how a DNO roll-out would be either cheaper or more effective; I really do not.

Melissa Gander: I would echo Sanjaya's comment. I think that you could potentially stifle innovation through DNO-led roll-outs. I think it is a supplier's place to be able to engage their customers and offer innovative propositions from the back of smart meters, and I do not think a DNO-led roll-out would deliver that.

Q4 Chair: Is the DCC the right body to do its work? Are there delays being caused by their performance so far? Is it costing suppliers to adapt their existing systems to the DCC system?

Don Leiper: The DCC is not responsible entirely on its own for the proposed delays. There have been some delays in reaching some of the specifications upon which their system development will be based, so there have been some precursors to the DCC that have led to some of this delay.

My personal view and our view at E.ON is that, yes, it is the right answer. We would much rather interact with one entity than multiple entities. This is a complex process in the energy industry around changing supplier and changing meters and those kind of things, and to have to have our system adapt to work with multiple third parties to co-ordinate that would be challenging. Downstream there are also very significant benefits not factored into the impact assessment that we would expect to come because the DCC will create some central control on data and data distribution. Complex industry practices are expected to get very much simplified downstream from the smart roll-out, so there is a further set of benefits to come because the DCC hopefully will exist on time.

Q5 Chair: Is there an issue about tower blocks and multiple-occupancy buildings?

Don Leiper: Absolutely.

Q6 Chair: Do you want to just enlarge on what the problem is?

Jorge Pikunic: The issue with tall buildings and so on: that is one of the bits of technology that needs to come up further—so back to what Jenny was saying. What is important now at this phase of the roll-out is to make the roll-out more and more inclusive. One of the things that we have to do to get there is first of all developing the prepayment technology—which we are already trialling right now with customers and we are planning to deploy that scale next year—but then in addition to that we will need additional technologies for tall buildings and buildings that have poor connectivity. What we probably need there is an industry solution. An industry solution will be a lot less expensive, a lot cheaper, than having each supplier going into a building installing their own technology. What we need to do for that is, for example, for DECC and the Government to take the lead in co-ordinating all industry parties to make sure that that industry solution is reached.

Don Leiper: We echo that extremely strongly. There are very different perspectives in the industry about when suppliers would like to start smart in earnest. We have very different strategies. We compete on this. We are doing what we do because we believe we can gain some competitive advantage on it—that may be subject to some other activities going on at the moment—but there are some areas where relying on the industry participants to solve problems, such as the one you refer to, is a little naive. We need DECC/Government to take a leadership role, not just in co-ordinating but driving as strongly as possible such issues as the tower blocks or multi-dwelling units, as they have become known.

Robert Murray: We work in multi-occupancy buildings every day and there are solutions there already that could be taken advantage of—existing technologies that are in buildings, which are not now being used. I think the marketplace will innovate and come up with a solution.

Q7 Chair: You said earlier that there was not enough sharing of information about what is happening. Is there anything that can be done to improve that?

Robert Murray: There could be a forum of all the industry players, installers and so on, to share the learning from what has been done so far.

Q8 Chair: Jenny, going back to what you were saying about some vulnerable groups not necessarily immediately getting the benefits of smart meters; I think your written evidence said that older people were coping better with this.

Jenny Saunders: Yes, where the trials have happened there has been quite a lot of advice and support, and where that has happened older people are responding to time-of-use tariffs, special designed tariffs, because they are at home, they are able to adjust. The problems have been more with families, young children needing peak time, not being as flexible when the demands for electricity, in particular, are there.

What we are saying is if you are designing special time-of-use-tariffs—it is probably a little bit further down the line—let us learn the lessons from Economy 7. We know that lots of people already on Economy 7 are not using that to their advantage necessarily, so we need to have some more advice and guidance and recognise that while there is a code of practice for the installs—SMICoP—that sets out energy advice that should go alongside installs. The way in which that is

interpreted could mean that we just have simple signposting, not the full help, support and pathway that E.ON have shown that they have been able to develop in their trials. I think a lot more focus on the different segments of the market is going to be needed

Q9 Chair: Should meter suppliers give people more guidance about how they can use their meter to promote greater energy efficiency?

Sanjaya Singhal: I think we are all doing that. As suppliers we are all, in our own ways, doing that.

Don Leiper: It is an important part of our customer journey. At the point of installation we will take the customers through the best use of technology that is put into their house. But we also have trained every single one of our customer service agents with an NVQ on energy efficiency and that is deliberately linked into when customers maybe have not taken it in on the first visit so we can then explain. Any one of our agents can then have those conversations with customers after the event as well.

Q10 John Robertson: I want to just clarify a couple of things before I go into my other questions. Would it be fair to say that the commonality between you all is that most customers basically do not understand smart metering—some do, but most of them do not? Is that a fair assessment of smart metering?

Melissa Gander: Customers do not understand smart meters?

John Robertson: Yes.

Melissa Gander: From Ovo's perspective I would say we have incredibly engaged customers.

Q11 John Robertson: You have 400,000 customers who choose to come to you, so the chances are they are there for a financial reason anyway, so with the best respect it is more E.ON I want an answer from; one of the bigger companies.

Don Leiper: I think there is not yet through the whole country a clear understanding of smart metering.

Q12 John Robertson: Whose fault is that?

Don Leiper: We have not yet got to the point of mass roll-outs so I do not think it is anybody's fault yet. The method of communicating to the country is twofold. First, through Smart Energy GB, we have a mandate effectively to do what the campaigns around digital switchover did for digital switchover; so that is their role. Then energy companies have a role at the point when they are preparing to do their own roll-outs to further that education process. Where we are interacting with customers for installing smart meters—so customers who have got it—I think they understand it very well. Where we have customers with whom we have not yet interacted to offer it to them, because we are not in the full roll-out yet, then maybe that knowledge is not yet fully there.

Q13 John Robertson: My next question is a general question. You all do your own roll-outs. Do you ever find you are working next door to each other?

Don Leiper: Not really.

Q14 John Robertson: Is the monitoring of how the roll-outs are going good enough? I know E.ON has an opinion on this but others; how do you feel? Do you think the roll-outs are good, bad, indifferent?

Sanjaya Singhal: We promise to get the customer on smart meter within two months of his supply starting and we succeed in doing that, wherever the customer may be.

Jenny Saunders: On the monitoring side of things it is the different customer groups. Ofgem have said that they are requiring companies to register priority-service-registered customers only. We think that they could capture a wider group—people who receive warm home discount funds. We do not want all this collection of information for the sake of it, but we think it could be used for follow up. At post-installation, do we know that those customers can be helped and linked into other schemes?

Q15 John Robertson: I will get to vulnerable customers later, but overall do you find you are working in your own areas, or do you find that you could have engineers in the same area that, say, British Gas and E.ON are working? That seems like a waste. It does not sound very clever to me to have a lot of companies working in the same area. Would it not be better for each to agree to take on a certain patch and then do it?

Don Leiper: The industry is organising itself to an acceptable and good level of efficiency anyway. E.ON have areas where maybe 30%, 35% of the customers have either electricity or gas from E.ON or both, and in those cases, from an efficiency perspective, it is no more significant a hardship to go from one house to one three down the road than one next door. Where we do not have sufficient economies of scale and density ourselves we will outsource it to a third party who may well have, and at the moment we do work with others.

Q16 John Robertson: So you might be using the same third party?

Don Leiper: We may well be using the same third party to gain those efficiencies.

Q17 John Robertson: My question then has to be: do you all work the same rules and guidance to your third party?

Melissa Gander: There are standards that are in place. There is the Code of Practice called SMICoP that is the foundation of what we should be offering, but there would be challenges

around anything innovative that you want to offer to the customer in a different experience in the home.

Q18 John Robertson: So you are all working on the same Code of Practice?

Don Leiper: Yes.

Jorge Pikunic: Same Code of Practice, yes. And slightly different strategies. For example, British Gas has a national legacy, and we prioritise meters that are at the end of their life. Because we have that density at a national level we can afford to have our own workforce working efficiently. That is what we have: over 1,200 smart energy experts who work across the nation replacing these meters.

Q19 John Robertson: On the roll-out in general, have you looked at other utilities, such as water, and how they rolled out their meters to see if you can learn anything from them? How to improve it, I would hope. But have you learned anything from these?

Don Leiper: We probably learn more from other countries than from the water industry in the UK.

John Robertson: As we did.

Don Leiper: Because tens of millions if not hundreds of millions of smart meters have been rolled out worldwide.

Q20 John Robertson: Okay, it is probably just as well staying away from the water. Jenny Saunders, this is a question to you. What is your view on the current methods of monitoring roll-out to vulnerable customers—which you touched on earlier—and low-income users? I look at them differently, and I find a lot of the companies that are present here come to see me about vulnerable customers. What is your opinion on that?

Jenny Saunders: We ran some workshops as part of a study and a number of stakeholders engaged. Some told us that companies that are using third-party agents to call up to make appointments will not have access to the priority-service register, so we are concerned that at some point that is captured adequately, and we need to look at that.

The monitoring so far is telling us that customers will respond. I do not know if I am getting confused with the monitoring required or other research.

Q21 John Robertson: Let me help you. You said earlier that vulnerable customers do not understand the benefits.

Jenny Saunders: I do not think that they do automatically, no.

Q22 John Robertson: The really need to. We are changing these meters, and maybe that is a question going back to earlier: who does benefit from these smart meters? Is it the customer or the companies?

Jenny Saunders: The efficiencies of introducing smart meters are supposed to be split. There are £8 billion of cost efficiencies expected to processes within the companies that they should be passing through to the customer eventually, and then there are energy savings that potentially customers can get if they are told how to use the meter to save energy.

If you are a low-income user and you are already rationing use you are not going to save much. You are not going to be able to get those energy-efficiency savings to the same degree. But what we should be seeing is some of the system savings once we have full roll-out. It is too early to see all of those savings yet. We have seen the costs added on. The savings will come later if we get the companies to pass that through.

Q23 John Robertson: You said that older people understand better, but, in effect, most of the vulnerable customers, the majority, will be elderly.

Jenny Saunders: I disagree. Some have families with young children, some will have special disabilities.

Q24 John Robertson: No, I did not say they would all be elderly. I just said compared with other areas the elderly are the ones who will be most vulnerable, particularly as they get older, and as more and more people are living for longer.

Jenny Saunders: They do represent a very high percentage of vulnerable groups. What we are saying is where they have had advice and handholding through this process they are able to respond. But they are not necessarily going to be saving lots and lots of energy. They might just have better comfort. They might use the controls more efficiently if they are getting energy advice at the same time. It is not just the smart meter. It is about what the display is telling them, the advice that goes alongside the roll-out, and whether they engaging better and understanding how they are using energy.

John Robertson: Mr Singhal, you said that customers do not understand and they need educating. Is this the same thing you are talking about? How do you get the education of people, particularly when, if you are using a third party, they will be governed by how many meters they put in?

Sanjaya Singhal: Yes, but that is very much a part of the contracts we place. There is the responsibility on the installer, whether it be our own or the third party installer, to provide an initial level of training, which is getting the customer familiar with the equipment, what it means and how they can use it and understand it. That is the time that every installer, contracted or our own, has to spend.

Q25 John Robertson: What check-ups do you do to make sure that they have done their job?

Sanjaya Singhal: There is a quality assurance process in the background and the secondary, the proxy, is the number of calls we get back because customers did not understand their equipment. Those are very, very few.

Q26 John Robertson: So therefore Ofgem have a job here of collating the information for failures to meet the deadlines, and also perhaps of a customer being left without the knowledge to understand the device that has been put in. Is it important therefore that Ofgem do this job? At the end of the day what do they do with the information they have been given? How do they make sure that companies, or third parties that are working for your companies, do the right job?

Jenny Saunders: I understand that Ofgem are not requiring very much collection of data. For example, we suggested that they should be asking the companies to report on the failure to take up meters and the reasons why, to try to understand and work then with the companies to improve take-up and access. I think the reporting, as I understand it so far, is that you report on priority-service-register customers but I am not sure.

Q27 John Robertson: E.ON have already said that you—let me find the quote—“There are clear consequences for those failing to achieve their plans with regard to monitoring roll-out,” so what exactly—

Don Leiper: Could you just repeat that?

John Robertson: Sorry, I will do it slower. It is the Scottish accent. “There are clear consequences for those failing to achieve their plans with regards to monitoring roll-out.” What do you envisage by that?

Don Leiper: My understanding of the expectations of Ofgem is that we need to report to them how many meters we are going to deliver in the roll-out process as opposed to your question, which is more about how well are we educating customers at the point of roll-out. So there are two different things there.

Q28 John Robertson: We will hammer on Ofgem on that one anyway to find out why they are not checking.

Don Leiper: From our perspective, in terms of how well we deliver the requirements of the Code of Practice, we take the responsibility to make sure we do our best to educate customers around the energy efficiency so they can get the benefits of the roll-out at the point of installation and afterwards. I am not aware of anything absolutely specific that Ofgem have got in mind to monitor how well that is done other than the general responsibility to comply with the code. They can always come and audit us on the code and apart from the fact that it is an appropriate responsibility for us to do this well, Ofgem are certainly getting to the point of being quite happy to fine us for almost anything that we do not do that we are meant to be doing at the moment.

We would take it very seriously anyway and that certainly adds an additional layer of need to comply.

Q29 John Robertson: Companies like British Gas and E.ON have always hidden behind the statement—whatever the information that has been asked for—that it is commercially sensitive information and therefore they do not give it. Can we be assured that in response to any questions that are asked to do with this roll-out you will supply the information without falling back on the gambit of sensitive material?

Don Leiper: Ofgem have the right to ask for anything anyway; the question is whether it is publishable.

John Robertson: Yes, but we might want to ask it.

Don Leiper: There are commercially sensitive things that might be asked. We will compete around the products that derive from smart metering and so we may not want to broadcast exactly what it is we want to do before we have started doing it, but in general, in terms of customer benefits and those kinds of things, of course.

Q30 John Robertson: Let me ask one last question on vulnerable customers. Why are you not fitting vulnerable customers' smart meters first? Why are you not doing that?

Sanjaya Singhal: That is exactly what we are doing.

Q31 John Robertson: You are doing that?

Sanjaya Singhal: We are doing only that. We are only serving the bottom three deciles of the income spectrum.

Q32 John Robertson: You get a tick in the box then. What about the rest of you?

Melissa Gander: We are fitting—

John Robertson: You cannot have too many. I cannot imagine you having too many. It is easy for you to say that.

Melissa Gander: At the moment we are taking on hundreds of prepayment customers a day. We have one of the cheapest prepayment tariffs—

John Robertson: Hundreds out of 400,000 is not a lot, is it?

Melissa Gander: It is a growing part of our business and, so, yes, we are fitting smart meters for vulnerable customers.

Q33 John Robertson: What about the rest of you? Mr Murray, you are nice and quiet there.

Robert Murray: I do not have any customers at the moment. What we have tried to do is to de-risk this programme so that we finance it, we manufacture the meter, we supply the meter, we

install it and then we run it for 15 years guaranteed. So customers that have our service will have a guaranteed service for 15 years.

Q34 John Robertson: This is nothing to do with what I have been asking questions on, but the meters themselves are always progressing, new technology comes along, and the first lot of meters that we had bear no resemblance to the second lot of meters. Where are we in that? What grade of meter are we installing? Is it the state of the art or are we going back to the first meters when we made a lot of them and we do not want to do with them?

Robert Murray: The traditional meter has not really changed other than improvement in manufacturing processes for 40, 50 years. I have SMETS 1 smart meters fitted in my property. They totally changed the way my family and I behave. We have become much more energy conscious. You mentioned something very interesting earlier about outcomes. All we are focused on at the moment is outputs—the number of smart meters that have been fitted. What we should be looking at now is outcomes, things like energy reduction and carbon reduction, because these are the big advantages that derive from smart meters and nobody is paying much attention to that at the moment.

Sanjaya Singhal: If I may respond to you?

Q35 John Robertson: Can I just—Ms Saunders, you said families do not look at these energy reduction savings. To be honest, why should they? It is hard enough running a house and a family, why should they have to worry about that as well? You are putting an awful lot of pressure on parents.

Jenny Saunders: Most families on low incomes do try to manage their household budgets and they do manage very well. If they see an opportunity to make savings they will take it. What we are saying is how flexible can they be? How can they respond better? We have not seen enough of the change that might happen—time-of-use tariffs—that might be beneficial to them or cost savings coming through to them. But yes, a lot of people are pulling out the plug and telling people to turn off—

John Robertson: That is just to get the bill down.

Jenny Saunders: They are trying to do that but whether or not they need a smart meter and whether that in-home display is the best way of helping them do that, there are other ways in which you can help.

John Robertson: Mr Singhal, I interrupted you, I apologise.

Sanjaya Singhal: Sorry, I was responding to the level of technology that is being deployed today. My worry is that the technology that we are deploying today is about two or three years old.

Q36 John Robertson: Would you agree then that monitoring of the situation has to be done by DECC? Whether it is Ofgem that are doing it for them or not but DECC has to keep a close eye on what is happening.

Sanjaya Singhal: In fact my concern is even more serious than that. Fundamentally the DECC programme is a moratorium on innovation for the next three years. That is basically what it is. It will just not allow new metering technology to be deployed, even if it were available, or new communications technology, if it were available, for the duration of the lifetime of these products and that is a fundamental weakness of the programme.

John Robertson: That is a good point for me to end on.

Q37 Sir Robert Smith: And it feeds on to questions of interoperability. With a traditional meter when you phone up and change suppliers no one comes and swaps the meter around. What happens if I switch from Centrica to E.ON; does someone have to come and swap the meter round or do they take over that smart meter?

Melissa Gander: That depends on the choice of the supplier. So Ovo have successfully inherited smart meters from other suppliers and are able to obtain the data from those meters and serve the customers through those meters. It can be a challenge and it varies from supplier to supplier as to whether they can overcome that challenge.

Jorge Pikunic: We have slightly different systems now during the foundation phase, so in order to operate those meters as smart, any meters that we gain, we then need to make the systems compatible so we can then use that data and operate the meters as smart.

In the enduring phase with the DCC the interoperability will be made a lot simpler.

Q38 Sir Robert Smith: So the DCC are making it simpler because they are handling all the data rather than the actual compatibility of the meter?

Don Leiper: The role of the DCC is to ensure it can interact with all the meters on behalf of any given supplier, so at the point of change of supplier—it does not matter which supplier—so long as you can work with the DCC and the DCC can work with the meters, which is why they need to be to a particular specification to ensure that that is possible, then at that point there is no issue. At this point, before the DCC is in play, there are some issues and customers can find that if we inherited a meter from British Gas, we might struggle to interact with that meter. British Gas do offer a service, but it is our choice as to whether we take that service or not.

Sir Robert Smith: So they will provide a management—

Don Leiper: On an interim basis until the DCC is in place. We all have to offer a basic service to each other.

Sanjaya Singhal: In the foundation phase the concept of the smart meter service operator, an SMSO, could do effectively what DCC will do in the roll-out phase. So SMETS 1 and SMSO do the same thing and, provided all the suppliers could exchange SMSOs, interoperability would not be an issue at all.

Don Leiper: But not all suppliers wanted to interact with every SMSO because it is a heavy-duty IT change when we have plenty of other things that we regard as perhaps more important.

Jorge Pikunic: I will echo that. So at the moment different suppliers prioritise which SMSO to interact with. With each SMSO there are some interfaces that need to be built and so it is up to

each supplier itself if you build that interface to accommodate customers that you are gaining from a different supplier? In some cases supplier X and supply Y may use a very similar system in which case it is very easy. But there is always a cost-benefit balance to make sure we are doing this cost efficiently. When the DCC is live, that will all be much simpler.

Q39 Sir Robert Smith: When the DCC goes live will it work with already foundation-installed equipment?

Melissa Gander: That has not been confirmed.

Sanjaya Singhal: That is the theory. I think the practice will be very difficult. But that is the theory.

Q40 Sir Robert Smith: So the foundation people could find themselves—

Don Leiper: There are two types of meters within the foundation period. One where an energy company may have chosen just to do some work to understand what they can do in smart, where they know they are going to have to change that meter out because it can never be made to work with the DCC. There is another stage of meters where DECC have confirmed that DCC must, what is called, enrol those meters provided the suppliers can confirm that they are enrollable. Nearly all the meters that we install now are in that second category, but we do have some in the first category.

Jorge Pikunic: We would like to see that feasibility study to begin the enrolment of SMETS 1 meters or foundation meters started, kicked off, to make sure that enrolment into the DCC can happen as early as possible. That is, for two reasons. The first one is to ensure that this interoperability happens as soon as possible. But then secondly, the longer we leave that going on all suppliers will have to operate basically two infrastructures; paying twice for infrastructure. So the sooner we can ensure the enrolment of those meters to the DCC the better it is for customers.

Robert Murray: As a customer currently, if I switch from my energy supplier my SMETS 1 meters effectively become dumb meters, so it does inhibit me switching or losing the benefits of having smart meters that my family have derived so far. The most powerful thing I want to leave you with today is this: the longer we delay the mass roll-out the harder it becomes. Customers will become disenchanted with it. So we need to focus now on delivery. The time for revisiting planning is over and we should start focusing on delivery, and people gain the full benefits of smart meters.

Q41 Sir Robert Smith: How compatible are the current products with smartphones and other means of interacting with your energy use? Is it the meter that has to be compatible or is it the data centre that has to be compatible?

Melissa Gander: I do not want to get too into the technical details. If the meter can communicate to an in-home display, so the device in the home, theoretically it could communicate to another device that can then transmit the data directly to a smartphone or through the customer's

broadband connection and around back through to the smartphone. So if it can communicate to an in-home display theoretically it should support smartphone usage.

Sanjaya Singhal: The answer is it ought to but in the SMETS 2-world—which is the roll-out world—first, an in-home display is mandatory. Every supplier will have to incur that cost even though they offer the same information or even better quality information on their mobile phone. Second, how exactly that is going to happen is still work in process. We still do not have the specifications in the SMETS 2-world on how that is going to be delivered. There is this concept of a customer-access device, which is part of the work in process of the specifications.

What we have with the SMETS 2 programme is specifications evolving along the lines of making sure that each device on each home's wall is compatible with one another and in order to do that it has to specify every last detail, and a number of last details are not specified yet. In theory it should be possible. Practically, wearing my engineer's hat and all my experience of smart meters, it is going to be very difficult.

Don Leiper: The technology world is evolving all the time so by the time, in the terms you have just described, those final bits of the jigsaw are put in place, there will be a new jigsaw to play and there will be a SMETS 3, a SMETS 4 and a SMETS 5, and the way that those meters in future will be able to interact. But meters are expensive, like they are in the current world, they cost money, they get amortised over time. We cannot keep swapping them out at short notice because technology moves on quickly. Sometimes we have to allow that cost to be spread over an acceptable period of time. We have to take a cut at some point that says, "This is what we are going with" and the sooner we learn that and get on with it the better and then it will evolve again after that in due course. We will not get it perfect.

Sanjaya Singhal: But that evolution is going to be very expensive. DCC already is a very expensive thing and the more we evolve and put in more technology it is going to get even more expensive at a point where the cost to serve for the supplier will just not be worth it, which is why I call it a moratorium on innovation.

Q42 Sir Robert Smith: Did Ovo have the idea that rather than worrying about the meter it is more the data?

Melissa Gander: To take it back to the question around smartphones, it is theoretically possible now. The technology is there and we can use it to be able to give customers their data on a smartphone. The challenge is that we are still mandated to provide an in-home display so that cannot enable the smartphone usage. We have a choice. Do we give the customer an in-home display and the piece of kit that allows the customer to see the data on a smartphone and have that additional cost? There is the challenge. It is just adding more and more cost to the programme. We want to innovate and we want to be able to give customers their data in the format that best suits them. That might be an IHD or it could be another device to allow them to see data on a smartphone, but the mandated roll-out at the moment is to offer them an in-home display.

Sanjaya Singhal: You will find this difference between small suppliers like Ovo and us compared with the big ones, because we are more innovative and we have the better ideas or quicker ideas.

Q43 Sir Robert Smith: Because the in-home display being available to everyone seems a positively inclusive process but forcing—presumably if the person does not want it—

Melissa Gander: You are still mandated to offer it. So a customer theoretically could choose both.

Q44 Sir Robert Smith: The only question I have there is if you have a high-tech person living in a house and they then move and a low-tech person moves in, do they then get an in-home display if the high-tech person refused it?

Melissa Gander: It is possible to send out an in-home display. You do not need to send out an engineer to be able to install that. You can send that, you can pair it quite easily with the meter.

Don Leiper: It is important to get a balance into this discussion. Customers are not the same. Customers will require different things over the course of time. A very important part of the impact assessment for smart metering is customers' ability to understand their energy better and save money, reduce their energy consumption. The in-home display devices are a strong means of doing that. They are not the only means of doing that. Our analysis shows that where we have been installing in-home displays now for several years, 90% of customers are still using them a year or two years after they were originally installed. So it is not that they are a hopeless device by any means.

If we can prove that we can make the savings necessary for the impact assessment on a universal basis, or even on a partial basis, to a selected sub-demographic of the country by means of an iPhone access or a tablet access, then DECC, and all of the energy companies, will be very willing to say, "Okay, we have just evidenced something through a new method," but just to hope that it will work is inappropriate.

Jenny Saunders: The danger is if we go that route that it is an easy option; that the suppliers will not offer the in-home display and will just assume that everyone can manage. They will not make that decision and, at this stage, it is very important that everybody is proactively encouraged to have an in-home display rather than an app until we understand rather better how apps are being used.

Jorge Pikunic: We are developing a virtual in-home display and the idea is to test it early on next year, and to get some of the facts around that. Many of our customers, not only the tech-savvy ones, tell us that they would love to have access to the information from their smart meters on a near-real-time basis on their iPhones or their mobile phones, so we are developing that. In addition to that it could be a mechanism to make the roll-out more cost efficient. But, as my colleagues were saying, it is important to leave the choice to the customer so that if a customer does not want an in-home display they absolutely can get an alternative to a physical in-home display where appropriate.

Robert Murray: May I draw a parallel? On one of our contracts we have over 30 apps in place and 90% of those apps have been from the workforce saying, "If I had an app to do this it would make me that much more efficient and improve," so I think the customer will—but you need that platform in place for the customer to be able to say, "Well, I could do with this now," and I think

that is the way it will happen. But without the platform in place you will not get any more innovation.

Melissa Gander: Within a year of roll-out of our smart meters, almost a third of our IHDs we cannot communicate with now, which means they are not in use, so they are switched off. So although E.ON might have found that 90% of theirs is still in use, we have already found a third of ours are not. What we are looking for is the customer to be able to make that choice. At the moment the IHD is mandated; we have to offer that to consumers.

Q45 Sir Robert Smith: How often does the data flow from the meter to the centre that could then come back through the broadband? Do you have to have a direct link to the meter to be most interactive or can you manage your data with a phone app that talks to your supplier's data centre?

Melissa Gander: In terms of the frequency of the data that is received?

Sir Robert Smith: Yes.

Melissa Gander: It can be the same as an in-home display—live.

Q46 Sir Robert Smith: So is that not the solution to the tower block problem?

Jorge Pikunic: For our virtual home display to work what one does is put a customer-access device instead of a physical IHD and that then communicates to a communication hub that communicates to the meter, and then that gives the customer on the device of their choice, a smartphone, for example, the information on their consumption in pounds and pence in real time. If we were going to get that information from the supplier we get the message from the meter about once a day, so we will then be able to provide that information back to the customer in real time.

Melissa Gander: Theoretically it could be that you could use a similar technology to solve the tower-block problem. The issue would be if there are consumers in that block that do not have smartphone access, they would not be able to access the data, but that is a shrinking number of customers. Yes, there are the exceptions there and we can work to be able to offer them solutions, but in the case of the tower blocks it could be solutions that are not using the newest technology to be able to deliver the data, and that is adding additional cost.

Sanjaya Singhal: The differences we have heard are the differences between the SMETS 1-world where Ovo is able to get near real time information to customers on their iPads or mobile phones, but in the SMETS 2-world that is just not going to be possible.

Jenny Saunders: That is one of the functions of an app, but the in-home display also provides a traffic light system. It sends out information to customers about appliances they are using. I do not think that you can easily replace that with just an app that might be about your bill popping up or whatever. We have to get over that. The talk about it being an unnecessary cost: there are other cost inefficiencies that perhaps could be looked at before the in-home display disappears, because this is the one piece of kit that we think has through foundation stage helped customers engage and save money and get the benefit.

Sir Robert Smith: Thanks very much.

Q47 Graham Stringer: Can I ask British Gas first? In your written evidence you say that customers quickly lose interest in smart meters once they are installed. Is that the case and why does that happen?

Jorge Pikunic: Is it that customers can register interest? Is that right?

Graham Stringer: Lose interest. Basically install it and take no notice of what is happening there. That it is effectively—it is the opposite of what was said earlier that 90% of people use them in a detailed way. What is your experience? Your written evidence seems to suggest that 90% of them do not use the meters.

Jorge Pikunic: Use the in-home display?

Graham Stringer: Yes.

Jorge Pikunic: In our own experience after a year of installation over 60% of our customers still use the meter once a month. You are right to say there is a decline in interest over time, but the number of people that use their in-home displays on a regular basis, even a year after installation, is still more than half of our customers.

Sanjaya Singhal: Our experience in IHDs is mixed. We heard E.ON say 90% continue to use them. Melissa said a third are not in use. Utilita's experience is somewhere between 30% and 40% are not regularly used. In Australia where they offered in-home displays the market just collapsed as soon as the Government withdrew subsidies from it, which means—and this was a market-led thing—customers do not value it so much. So the jury is still out on an optional use for an IHD—if it is only providing information and you are not forced to use it on a regular basis. In Northern Ireland for instance, where it is only a prepayment deployment and the only way you interface with the metering device is through your in-home display, and you have to use it week in, week out, you get the savings. If you are not forced to use it, it is a good thing to have, but in a few weeks, a few months many families lose interest. So there is a mixed bag of research and experience out there.

Q48 Graham Stringer: That is very interesting. Not British Gas's written evidence but written evidence elsewhere suggests we have the most expensive meters when using international comparisons—compared with Spain, Italy, Texas, India, China? Are our meters between twice and five times the cost of elsewhere? Is that the case?

Sanjaya Singhal: I do not think it is. First and foremost this is the most complex deployment of smart meters anywhere in the world because it is dual fuel.

Graham Stringer: Because?

Sanjaya Singhal: It is dual fuel, gas and electric, both—most deployments are just single fuel: electric only or gas only or water only—and it involves this in-home display. The costs of our proposed deployment could be lower, but because of the way the architecture has been constructed with a fourth box called the Independent Communications Hub, it has become more expensive. It could have been cheaper, but because of the desire to make every device swappable in the house at any time in the future, getting to that device-level interoperability, we have ended up with something that is more expensive.

The costs are where the impact assessments expect them to be. So if you make comparisons say with Spain or with Australia or with America it is usually single-fuel deployments. Dual fuel is a completely different kettle of fish because the gas meter becomes very expensive. You cannot get electricity to a gas meter so it is battery operated. All those things make it more expensive.

Don Leiper: I agree with that. I definitely do not recognise being twice as expensive let alone five times more expensive. That just does not gel with our experience at E.ON in multiple countries. It is nothing like that.

Q49 Graham Stringer: When I am listening to what you are saying and you start talking about additional challenges and theoretically this is possible, and it is very complicated, and the complications lead to greater expense, it sounds to me like we are heading for another major national IT disaster. Mr Singhal, do you think that?

Sanjaya Singhal: I am very concerned about that. I seriously am. DCC, which should have been here in 2013, we recently heard will probably now be here in autumn 2016. This is a plan that is built on paper. We do not have communication devices yet. We do not have meters to SMETS 2 yet. The rubber hits the road when there are physical devices to play with and they are not there yet. On paper the programme looks good. Anybody with experience in metering knows that things can go wrong when meters get into customers' premises. With Utilita we are now in our third generation with SMETS 1. We started with Generation 1, stabilised it, improved it, and each of these transitions take six to nine months. So for us to transition from SMETS 1 to SMETS 2 is going to take that level of time. As an IT programme it has already suffered big delays. The costs of the IT programme are 80% more than budgeted so far, and this is when there are no devices yet. So that to me is a serious area of concern. It could be one of those IT programmes that you just have to continue and never know when to pull the plug on. It could go that way and it is a risk we need to recognise and do something about.

Having said that, we already have a challenge on our hands. If DCC is not going to be available until the middle of 2016 or late 2016, assuming it does go ahead, we are all, as suppliers, faced with the deadline of 2020 to install all the meters and that is not going to happen. Just not going to happen. But 2020 is enshrined in law. There is not the installation capacity, so the only way we can work today is to put more SMETS 1 meters on the wall and if we put more SMETS 1 meters on the wall then we have a problem because DCC and SMETS 1 will both need to co-exist and that part of the programme, as far as DCC is concerned, is still work in process. It is still being conceptualised I think honestly.

Q50 Graham Stringer: Does anybody disagree with Mr Singhal?

Robert Murray: I disagree because we are focusing on the wrong thing here. Smart meters are only the start of smart grids and without smart meters you will not have a smart grid. You will not have all the benefits a smart grid would bring to UK PLC. So I do beg to differ. It is not that big a technology thing to solve. We have just managed to land a probe on an asteroid, millions of miles away. This is nowhere near as complex as that. It is existing technology; it just needs to be deployed and the sooner the better.

Jorge Pikunic: I would agree as well with this view. If we look at the programme as a whole it is quite important to see that this is a major infrastructure programme. In terms of the energy

sector it is probably larger than, or comparable to, the conversion to natural gas, when we converted heating to natural gas. So there will be challenges along the way and what is quite important is that there are millions of customers already out there, or at least more than 1 million, benefiting from the technology and it is important that we continue to observe these challenges, address the challenges and continue. Yes, there are delays with the DCC but we are installing some of the SMETS 1 meters already. What is important is that the SMETS 1 meters are enrolled into the DCC when the DCC is live. But in the meantime we, as suppliers, can continue to install meters that are SMETS 1.

Jenny Saunders: There is an important point here, which is that in the whole roll-out programme there is no cap on the costs and they will come through to customers. The point has been made that we are 80% over budget without seeing anything yet. So there is a concern as to how much and what control over that kind of contract the Government is placing. So that would be a concern for customers who may be picking up additional costs.

Melissa Gander: I do not think there is any dispute about the benefits of smart meters to suggest that we should delay or cease the roll-out. With the DCC the timescales have moved. The actual scope of what the DCC will deliver has been reduced and what we would suggest is that it was reviewed to make sure that it is still appropriate and is still the most cost-effective way to deliver the programme for consumers. We do not think it is too late to have that review, and we think it could be beneficial.

Q51 Graham Stringer: That is very interesting. There seems to be complexity upon complexity everywhere you look. The smart Energy Code with DCC I am told runs to 1,000 pages. Is that right?

Sanjaya Singhal: 922. I read it in the car coming up.

Q52 Graham Stringer: You do not have to have been around long to realise that if you have a 1,000-page code there are going to be lots of disputes and the code, I am told, is also getting larger rather than smaller. You have that on one side. You can't use this in 25% of dwellings, flats, multiple-occupation places, which might increase to 40% if the broadband range changes and interferes with the ZigBee network. We have a real disaster on our hands, don't we?

Don Leiper: I don't think it is anything like as black a picture as you are painting in terms of—

Graham Stringer: I am asking a question. If you think I have the facts wrong, I am happy for you to tell me that my facts are wrong.

Don Leiper: In terms of the national IT disasters that you are alluding to, there are some significant correlations between this and the initial deregulation of the industry back in 1998 in terms of how the industry interacts within itself. There are some characteristic differences here as well. There are no data for day one of the DCC, which is the principal area of complexity that I think we are referring to here. It is not like we are taking National Health Service data from every GP surgery, every hospital and every primary care trust and trying to make it all the same and morph it into one enormous great project where everything works perfectly. There is no starting point for data. It is predefined what that data are going to be. There is no data migration. It is often data that get in the way of significant national IT projects. So there are some areas where it is simpler than some of the issues and problem projects that you have referred to. There are some problems that we need to overcome but, as Bob has said, the technology exists to

overcome all of it at the moment. It is just a question of corralling it in the right way and for me it is really DECC's role to make sure we carry on doing that.

I completely agree with the concerns about cost of the IT components. We do need significantly better transparency around the DCC, its cost, its cost structures and its IT programme in and of itself, because we are all going to have to interact with it. At the moment, we have a very high level plan that says, "We will be ready here; will you?" What we need is a whole lot more transparency that says, "Here are all the things we need you to be ready with on these particular dates with this particular specification". That transparency needs to be significantly improved for both cost and detail.

Robert J Murray: For me, if we keep delaying we will not get the innovation that will overcome these problems. We work in multi-occupancy buildings every single day across the capital and a lot of these buildings are carcassed out with other technology that could be adapted, but the longer we delay the rollout the less likely it is that the innovation is going to happen because there is no driver until you come to resolve the problem. I believe the technology is out there. There are some major technology companies who have the solution now, but until we start the mass rollout we are not going to see the benefits and we are not going to see the solution to that problem.

Sanjaya Singhal: One of my concerns about the costs is that we are dealing with IT contracts and communication contracts with people who are in their own right good and big companies but with very limited smart metering experience, in fact next to none. In Victoria, one of the distribution network operators chose to do exactly that, went to a big name company and placed a contract, assuming that this big name company would deliver. The cost of deployment is already 134% of budget, so they have spent 2.3 times the money they should have spent, and the programme is two years late and it is not finished yet. The last announcement that they made to the stock exchange came so heavily caveated with, "This is an IT programme, it is complex, it can go wrong, but we expect to spend \$175 million to get it right by December 2015". Those are the real risks. That is what real life and my experience with smart metering tells me, and that is the reason.

Probably I am a bit pessimistic, but I know IT programmes and I know smart meters, and when IT programmes and smart meters go wrong they go wrong big time. When we might hit trouble is when we start installing meters and then meters don't work and customers have to be visited a second or third time. A stop-start programme is the worst thing that can happen. Costs will just spiral out of control.

Q53 Graham Stringer: I don't want to hog this. I just have another couple of questions along those lines. Do all the new meters need to be 100% SMETS-compliant and are the different standards within SMETS internally consistent?

Sanjaya Singhal: The standards we are working with are new. GBCS, the Great Britain Companion Specification, which was written specifically for this programme because the international standards were not good enough and the ZigBee standard was not adequate enough, is completely new. We have no experience of using these standards. They have only been published recently and they are still incomplete. To answer your question: I think it will take a little time but the risks are writ large.

Q54 Graham Stringer: Do you believe that all the new meters need to be SMETS-compliant even if there is a worry about the standards within them?

Sanjaya Singhal: That is pretty much the way that SMETS 2 is specified; everything has to comply. The difference between SMETS 1 and SMETS 2 is that SMETS 1 says, “This is the customer experience and somehow give it to him”. SMETS 2 says, “This is the customer experience and deliver it exactly in this way”. One says what the customer should get and the other says how he should get it, and specifying the “how”, getting it unambiguous and getting all the device manufacturers, gas meters, electricity meters, in-home displays, communication hubs, data communications, is going to be difficult.

Q55 Graham Stringer: Just a final question about the practicalities of hitting the 2020 deadline. You have given us all headaches around it. Are there sufficient installation engineers to make this happen even if there were not potential technical problems?

Melissa Gander: Our experience is that we are already facing challenges around installer capacity. Historically, you had electricity-trained installers and gas-trained meter installers. Now we are having to upskill the existing installer population to be dual fuel and then layer the smart training on top. There is quite a lot of cost and it is a risk at the moment in employing installers because the market is so small that you pay to train them and there is a retention risk there. It is a significant investment that takes time to pay off and we are already finding that the cost of installations from our partners is increasing because they are increasing the cost to mitigate any risk of that investment, so trying to recover the training costs over a shorter period.

Robert J Murray: We are going to create a brand new workforce for this. We are working very closely with the military, people leaving the forces, where there is back-to-work and so on. We believe we need to create a new workforce that we will then use on subsequent smart technologies as smart metering comes to an end. We are confident we can build a new workforce. The age profile in the industry is wrong so we see the opportunity to create up to 1,000 new jobs for this workforce. But as Melissa says, the slower the rollout the harder it is going to be to be able to deploy this new workforce because we can’t have them sat on shelves waiting for work. We do need to have a firm commitment that we are going to start and start on time.

Jorge Pikunic: I agree. The requirement for installing, for deploying the rollout, could be somewhere north of 10,000 engineers or 10,000 installers. Last year, for example, we recruited 450 installers, smart energy experts, who we trained in our own academies. We will continue to do that, but to make sure that that peak does not go too high, beyond 10,000, it is important that we start the mass rollout as soon as possible to smooth that peak.

Don Leiper: I completely agree. We have always said that once the mass rollout starts going, a reasonable but aggressive timescale is five years. It is inappropriate not to move the end date if the start date moves, recognising that there are challenges to doing that in terms of changing the rules and the law, but I think it is a thing we are going to have to face into once we have determined what the actual real start is.

Sanjaya Singhal: In terms of installation capacity, it is not going to get built overnight. You can't build to 10,000 or 12,000 engineers across the country from a standing start. SMETS 1 with its limited uptake already is experiencing supply-side shortages on the installed capacity and prices are going up. If the big programme starts on time, the prices will just shoot through the roof in the initial periods because installers will need to build this capacity for three or four years. You have 12,000 engineers who are gainfully employed for the first three or four years, but what do they do after all the meters have been installed? Installers are today building in costs of demobbing at the end of this install period because once all these meters are in, it is the usual 4% or 5% care and maintenance of installations. We will build this capacity and we will lose it, but we will pay for it today.

Robert J Murray: I disagree because what we will do is deploy that workforce, which will be a younger workforce than we currently have, on to existing and new contracts. Smart technologies, batteries, electric vehicles and so on will drive so much innovation and we will just move that workforce on to other contracts.

Q56 Sir Robert Smith: Do the current smart meters you are putting in talk to the DNO and say, "My power has disappeared. Come and reconnect me"?

Don Leiper: Not yet.

Sir Robert Smith: Will they be able to or does that require SMETS 2?

Sanjaya Singhal: The SMETS 1 meters we are deploying have that facility. It is not enabled yet because DNOs are not engaged and there are not the data flows available.

Sir Robert Smith: Will that require another visit?

Sanjaya Singhal: No.

Jenny Saunders: This is one of the things that we are looking at in a new piece of work with UKPN and British Gas in Tower Hamlets to see, sort of last gasp, what the implication will be on the network, but it is also being deployed in more vulnerable households with prepay and poorer customers at the same time. It is early stages but we will have some lessons from that within a year or so.

Jorge Pikunic: In that trial we are also trying, for example, technology for tall buildings and all that.

Q57 Sir Robert Smith: I suppose currently they are all where people want them. Have you found that people's meters are put in a nice smart new kitchen and to swap the meter involves damaging the fabric of the house? Have you come across that?

Don Leiper: The meter stays in the same place unless it is inaccessible and needs to be moved, as it would need to be moved at the end of its normal life anyway. We are not moving the meter into the kitchen. It is just the in-home display that might perhaps be in the kitchen.

Robert J Murray: In my experience in the contracts that I run, people always focus on the one bad job. I live in a 1950s street and most of the meters are in the garages where it is really easy to

replace them. We tend to focus on the one difficult job. It is the nature of the utilities industry. We always focus on the small number of problems and not on the 80:20.

Q58 Sir Robert Smith: On the 100% rollout, if people do not want a smart meter for whatever reason they may have, do you count as reaching 100% if you have made the offer and they have refused?

Don Leiper: I do not think it is crystal clear yet what counts as “all reasonable steps”, although there has been some guidance provided by Ofgem relating to business customers who were meant to have had intelligent meters fitted for those who did not manage to fit them all across the industry. You raise a really good question about what will count and we could do with extra clarity at the earliest opportunity to understand that. People will have the right to refuse, but at the end of the day when you get all the way out you will be running old infrastructure for those customers, they will become disproportionately expensive to serve and we will need a solution to finding a way to close out the tail-end of the installations.

Robert J Murray: I have the opinion that you have to create this as a pull, make the customers want to have that. We, in the industry, have to work together to create that, including Energy UK. We all have to create that pull. If it is a push customers will not want it, so we have to create that pull.

Jenny Saunders: That is why Smart Energy GB’s work is going to be important. They have told us that they are committed to working with local partnerships. They are trying to create a positive environment, but their work has stalled because the rollout has stalled. All of us are gearing up to informing the community groups and the third parties who can encourage access and that is going to be needed. In some of the early trials we saw the cost of phone calls to try to persuade people to have a smart meter has been disproportionate. Once we got the community groups engaged they were giving confidence that this was okay; it did not mean that you were going to be disconnected, did not mean this, that and the other. We have to build that confidence and that will improve access.

Don Leiper: Let’s not be too downbeat about this, Jenny. We have never had any communications with our customers that have had such a good response as the request to fit smart meters. The response rate from the customers is that far more of them respond and far more of them want to take the product than for anything else we have ever done.

Jenny Saunders: That is good. Maybe their job is going to be easier, but at the minute there is a lot of confusion about what it is. If the way in which you are explaining this to customers is making them excited and engaged that is just fantastic.

Sanjaya Singhal: I think Smart Energy GB are doing a good job and will continue to do a good job, but my concern is about the cost. Any amount of Government or third-party publicity is only a very small part of the overall expenditure. The bigger part is what we as suppliers will need to do and if you put the two costs together that may be a disproportionate cost.

Robert J Murray: We have been amazed by some of our clients, such as the NHS. They are saying, “How can we help you to fit smart meters because when our patients go home we want to make sure they understand about their energy use and they can go home to a warm house and so on?” We have been amazed at where the pull is coming. Even the NHS is saying, “How can we help you to fit smart meters?” I think we need to work with local authorities and housing

associations. We need to support Smart Energy and work together as a group to make sure that this does become a pull and not a push on the customer.

Sanjaya Singhal: There is one community of customers who definitely do not want smart meters and those are the ones who bypass their meters, and we do have those.

Q59 Dr Whitehead: Mr Pikunic, you have trialled time of use pricing on your smart meter customers, your base so far. What would you say have been the main advantages and drawbacks and customer reaction to those trials?

Jorge Pikunic: There are two trials that are quite interesting for the Committee to know about. The first one is a trial that we have done on what we call free Saturdays or Sundays where we give our customers who are on that tariff free electricity on Saturdays or Sundays. Their feedback has been extremely positive. The overall majority of our customers are very happy with it and the reason is because it is another step to putting them in control of their energy use. They feel that if they move some of their consumption to the Saturday or the Sunday, that is another way of saving consumption or saving money on their energy bills.

The second trial that we did is also as part of the Low Carbon Network Fund, which is a cost-reflective time-of-use tariff where we took about 600 customers and we gave them cost-reflective tariffs. The results were quite encouraging. We gave them a premium on their peak tariff and a discount on their off-peak and they reduced their consumption on average by 10% at peak times, which is quite a significant reduction. Their overall consumption went down by about 1.5% more than the customers with smart meters who were not in that tariff. If we extrapolate the peak demand reduction of 10% to a national level, that could be around 2 gigawatts. It shows the potential for a time-of-use tariff and demand response in the future to play a role here to satisfy peak capacity.

Q60 Dr Whitehead: I imagine your view would be that upon the major rollout, time-of-use tariffs would be pretty much integral to the process?

Jorge Pikunic: I think some types of time-of-use tariffs, as customer learn about them. As my colleague here was saying, we need to create the pull from the customers. They need to be comfortable that they understand how to use them, but I think different types of time-of-use tariffs will be enabled by smart meters and will be up by the rollout. There are some tariffs that are some simple and are intended to help customers understand, like the free Saturdays one. There will be some other cost-reflective time-of-use tariffs that are static. Then also in the 2020s we might benefit from a more dynamic time-of-use tariff where there is not a timeslot of one tariff and another timeslot with a different tariff but the cost of electricity goes up and down depending on what the price is, what the supply and demand balance is at that time, but I think that is for later on.

Q61 Dr Whitehead: Will your analysis be available as a public good assistance to other people who are rolling meters out?

Jorge Pikunic: Yes, absolutely. The Low Carbon Network Fund analysis, that we have done in partnership with UK Power Networks and many others, is being published I think this month, and I am very happy to share it with the Committee and anyone else. Another part of that same Low Carbon Network Fund trial is the one that Jenny mentioned earlier that is called Energy Wise for vulnerable customers and we will be able to share that also with everyone.

Q62 Dr Whitehead: This is perhaps a question for all the panel in general. You have mentioned the pull factor in rollout and smart meters and, as you have mentioned, I presume exactly the same would apply for time of use pricing. Smart meters inherently enable those more sophisticated tariffs and ways of paying. Do you think that should be mandated eventually or is it something that goes along with the fact that a number of customers might want to have rather more sophisticated ways of maintaining their energy and others less?

Don Leiper: I do not think it should be mandated unless we have an extreme energy crisis in this country. I would much rather let customers have the choice as to what suits them. This is very much an example of what smart can bring. The potential benefits that Jorge referred to, which may or may not get to 2 gigawatts in a perfect world in terms of demand reduction, are not factored into the impact assessment. Time-of-use tariffs are unquestionably enabled by the smart platforms we are seeking to put in place. The costs of putting it in are in the impact assessment but the benefits that can be derived from it are not in play. They are not stated in the impact assessment, nor are many of the network benefits that we ought to get, which should be very considerable.

We do look at the cost-benefit equation of this quite extensively and there are many benefits. There are concerns about costs, but there are many benefits that are enabled by smart that are not in the current business case. I would not mandate time-of-use tariffs to everybody as a “you must use this” kind of approach and, “Only use this much energy at these times of day”. I would leave it up to customer choice.

Jorge Pikunic: I strongly agree with that. Time-of-use tariffs are not for all customers but some customers could benefit from them. I think it should be available but it should not be mandated necessarily.

Sanjaya Singhal: There should be no mandate that says there shall be no tiering tariffs. Australia went that way for a couple of years where they mandated that there would be no time-of-use tariffs. Different customers have different needs and different lifestyles, and suppliers know that best and they can judge it.

Q63 Dr Whitehead: Jenny, I think you have written that you are not in favour of—

Jenny Saunders: I am just saying we need to go carefully on this. There certainly can be benefits. There was one example from the research project that we worked on with British Gas where we talked to people about changing the time at which they were taking energy, moving things away from peak time, and at the end of it we had a guy realise that by showering at this time, by eating slightly earlier, he managed to get enough for an extra pint at the end of the week, so he went down the club with an extra pint, knowing that was the difference it could make. You are talking the language as well, “What difference is that going to make to my lifestyle? Is it tangible? Is it

something that I understand?" But you have to talk people through and make sure that they do use the energy off peak or at the cheaper times and do not default back to their old behaviour. A lot of people are used to putting the tea on a certain time and doing things in a certain way. You have to change habits and just telling people that, "Here you are, off you go", does not necessarily mean that they will benefit. They might get it wrong.

Q64 Dr Whitehead: How far away is what you are very much in favour of, which is cheaper off-peak rates for vulnerable households, from a broader rollout of time-of-use tariffs? That is presumably a particular element of pricing that you would like to see introduced but without the wider framework.

Jenny Saunders: The people who can benefit most are those heating with electricity. Can we get a more progressive Economy 7 tariff now? Can we do something that is not going to just be for those people with an app? We are fitting 1,000 prepayment meters a day to recover debt from those people who are struggling? Can we offer it to those people first? Why not have something that is more focused, rather than just saying to everybody, "Here you go, here is time-of-use tariff" and those who are better informed, more engaged with the market will go for it first and the consequences are that everybody else picks up a more expensive tariff? My concern is that if you are working out you want to make so much profit a year, you are going to get that profit from people who are not engaged.

Q65 Dr Whitehead: Mr Leiper, although you mentioned that clearly time-of-use tariffs are a pretty central part of the offer of smart meters, you have proposed that the introduction of tariffs should be delayed until the end of the decade to allow smart meters to become established first.

Don Leiper: That is just our view. They are enabled by smart metering and if people want to try to do that earlier then fine, but it is not something we would be pushing early in the life cycle.

Q66 Dr Whitehead: Presumably a large number of people who will have smart meters will say, "I really do want to get into this because it clearly makes sense to me as a much more logical way of deploying my electricity costs".

Don Leiper: I think there is a danger of over-complicating time-of-use tariffs, which may be something that Jenny was saying. We have had time-of-use tariffs in play for a very long time. This will enable us to get to a more granular level, but I think introducing really complex tariffs early in the life cycle of smart has the potential, as we have seen in other countries, to create confusion and concern. In the example you gave of Australia where they mandated not to have time-of-use tariffs, it was because they had introduced them mandatorily very badly to start with and people got unexpectedly enormous bills because they had not realised that, for example, between 5.00 pm and 6.00 pm was a very expensive time, so they knee-jerked in the other direction. All we are saying is let's just be careful with the introduction of it and not spook the market by introducing something that is too complex for the market to understand yet. Some individuals, and probably many, will have no problem with it, but it would not be top of our list to introduce on day one.

Melissa Gander: There are a couple of other constraints. One is the Retail Market Review that has restricted the number of tariffs that a supplier can offer to consumers. There could be challenges there when you are looking at constructing an innovative tariff. You have to make choices on whether you want to forgo another tariff. The other is the settlements process for the industry. We have not moved to half-hourly settlements for domestic customers. While we can try to offer innovative time-of-use tariffs to customers, the way that we as suppliers pay for our energy does not reflect the shift in demand. Until we move to a different settlement process, I do not think we will see the big shift to time-of-use tariffs and the true innovation that could be there.

Sanjaya Singhal: Exactly the same points. That is what I would have said, except that we also do not know what the cost of settlement of domestic customers on a half-hourly basis is going to be. That is going to be another operating cost added on. Today it is very expensive, I think of the order of £100-plus per year.

Q67 Dr Whitehead: But presumably half-hourly settlement for domestic customers is only possible when a certain volume of smart meters has been introduced. At what point does that become really possible?

Sanjaya Singhal: It is possible today. If you were to take Utilita, it gets half-hourly information from all its customers. It could just consolidate all that information and say, "This is Utilita's total half-hourly consumption" and the settlement system should be able to deal with that.

Dr Whitehead: But you have rather chunky information coming in there, haven't you?

Sanjaya Singhal: Exactly. As soon as you go to customer level time-of-use tariffs then all that is really needed is for ELEXON to get their systems ready. I am not aware if there is a plan to move that way with domestic half-hourly customer settlement.

Don Leiper: I think it is worth saying that every meter is currently settled half hourly now, just by an estimate. In theory we would be replacing the estimate that they have to construct in the settlements world with an actual meter reading coming in to say, "It was actually this; you don't have to estimate any more". That sounds relatively simple but it is quite a big systems change.

Q68 Dr Whitehead: Basically you would be moving from half-hour guesses to half-hour actuals.

Don Leiper: Yes.

Dr Whitehead: My question then is at what point do guesses become so relatively overcome by the aggregation of the real data that they then become a non-guess because they are a minor part of the process and therefore half-hourly really works? Is there a tipping point or can that be done reasonably early on?

Sanjaya Singhal: It clearly can be done reasonably early on. It is down to ELEXON's IT systems.

Jorge Pikunic: Some of the time of use tariffs that are more static can be done today. For example, both of the trials that I spoke about can be done with current systems. Half-hourly settlements, which will add significant cost to the industry, are only necessary for the more

sophisticated, more dynamic time-of-use tariffs. Doing it now will add significant cost and will benefit only a very few customers, so I think it is something for later on. We can still have the more static time-of-use tariffs with the settlement regime that we have at the moment.

Q69 Dr Whitehead: Melissa mentioned the question of the Retail Market Review and the apparent fact that is going in the opposite direction currently in terms of simplification of tariffs, but certainly with the more dynamic time-of-use tariffs you would expect rather more complex tariffs. Is that something that Ofgem needs to be taken aside and shaken over or is that something that can be resolved rather more easily?

Don Leiper: It is something that Dermot Nolan has already acknowledged is going to have to change at some point in the future. He has commented, new in post, that the RMR has seen some of the benefits that were expected but that it is not a long-term fix, and I think he has said that publicly already.

Sanjaya Singhal: I think in the short term if the RMR was relaxed for smart meter-based tariffs that would already allow some innovation to take place. You have your set of standard four tariffs but if you have smart meters then you can have another four tariffs, and I think that would be a step in the right direction.

Robert J Murray: In Sweden, which is one of our own markets, we have rolled out smart meters and it was mandated as an end to estimated bills and that was it. Roll out your smart meters and mandate it, so no one gets an estimated bill anymore, and without smart meters in place you could not have done that.

Q70 Dr Whitehead: Would that presumably reasonably early mandation of non-estimated bills find favour?

Jorge Pikunic: Given that we already have the mandate for smart meters, it is a different way to achieve the same result. The mandate of no estimated bills will introduce yet another mandate that if we deploy smart meters we will get there anyway. For example, the vast majority—over 98%—of our customers that have smart meters right now receive accurate bills. With the small remainder, sometimes there are technical difficulties that you then resolve quickly.

Robert J Murray: The point I am trying to make is that the longer we delay the longer you are going to have these anomalies in the system. We really do need to start the deployment on time so we can finish on time in 2020.

Q71 Chair: There is a general benefit, is there not? Part of the cost of electricity that all consumers pay is to maintain levels of capacity that are very seldom used. If greater adoption of time-of-use pricing reduced those peaks, there would be a reduction in cost across the board, so even those customers who do not use time-of-use pricing, never look at their smart meter, would see a slight reduction in bills. If we can drive forward from this, there is a collective gain as well as an individual one.

Robert J Murray: I agree. I think we should measure outcomes now and we are not. We are looking at outputs, things like the number of smart meters that are fitted. We should be monitoring how we are going to get to the 2 gigawatt. If we start measuring outcomes we will see the benefits.

Q72 Sir Robert Smith: I have constituents who are on a product called Total Heating with Total Control from the old hydroelectric days, which is a dynamic teleswitching time-of-use tariff. Unlike any other customer, they are unable to shop around. Is anything about this smart meter rollout going to mean that you as suppliers would take them on as customers?

Melissa Gander: I am not fully aware of how it operates, but it would be interesting to understand how it does work in the home, because there could be solutions that are available or could soon be available.

Sanjaya Singhal: With smart meters that would be a very interesting product for a small supplier like Utilita. It should be possible. Another factor in the overall SMETS 2 design is that the radio teleswitch is not being suitable replaced and we are relying on the fact that it is going to continue until 2020 and after that somehow the SMETS 2 specification will deliver equivalent functionality. It needs to be a part of the working within the new specifications that are being worked, but that remains work in process. In theory with the smart meter those customers should be able to shop around.

Q73 Mr Lilley: Carrying on from the last questions before I get on with my scheduled questions: does the in-house display currently provided tell you what tariff you are paying?

Jorge Pikunic: It does. Our in-home display does tell you what tariff the customer is on.

Q74 Mr Lilley: The reason I ask is that I am the only member of the Committee who has a smart meter installed, by E.On—thank you very much. Unfortunately it does not work. I live in a small cottage, thin; the meter is at the front in the cellar there, the kitchen is at the back, and it can't communicate between the two. My wife refuses to have the meter in the drawing room, and I could not find it at the weekend when I was looking for it to see how it worked but we have never been able to use it. At least it is a comfort to know that if I can find it I will be able to tell what tariff we are using. I had not realised that.

Could you give us some estimate of what contribution smart meters feasibly might make towards demand-side responses by 2020?

Jorge Pikunic: Based on what I said earlier about the 2 gigawatts, just extrapolating the result of that trial to the entire nation that would be 2 gigawatts.

Mr Lilley: That is if everybody was on a time-of-use tariff?

Jorge Pikunic: It could reduce consumption by 10%, that is right. I think that gives an upper level estimate. It would be probably less than that but that gives an idea of the order of magnitude of what the savings could be.

Q75 Mr Lilley: I understand that there are three kinds of savings from this project. One is the savings to you as suppliers in your metering costs. You do not have to send a man out. Two is that if there is a time-of-use shift we need less capacity installed. Three is a reduction in emissions if people use less fuel and electricity rather than just changing the time of day they use it. It would be interesting to know roughly how you see the rewards panning out. Is it a third, a third, a third or 10%, 50%, 40%?

Don Leiper: I don't think in the impact assessment anything has been credited to the time-of-use demand reduction, unless I am wrong, which is always possible but I don't believe that is the case. Predominantly it is about savings to suppliers and savings from energy efficiency in the customer side, so I don't think there has been anything specific done. I do think there will be numerous products, time-of-use being one, that will grow up around it on the back of better data and the better ability to interact with customers remotely. In France, for example, there is a product where customers sign up to just saying, "I won't use any power at peak times". If there is an emergency and they have a few tens of thousands on the product, they can bid into their capacity system and remotely switch off those customers who volunteered to say, in exchange for some money, that they will not use power when called upon not to at peak times. That has a capacity benefit to the country. That is not factored into the smart metering impact assessment and you need a particular kind of customer to volunteer to take that kind of product. It certainly is not fit for everybody but there are tens of thousands of customers in France who do that.

Mr Lilley: Yes, I am one in France.

Don Leiper: I don't have a view that says there is this much capability. I just think a raft of new products will be generated on the back of the ability to interact better with the home over the course of time.

Q76 Mr Lilley: Aren't the majority of those future benefits dependent on developing more smart technology, so that a washing machine can be turned off rather than turning off all the electricity in your house and not being able to watch the television at a crucial moment but being able to turn off machines that are not time dependent? Doesn't it also depend on people having it on their smartphone? The way we live now we don't have a different device for everything. We have one, here; it is now a smartphone.

Sanjaya Singhal: I think different customers will have different needs. If you did a stratification of customers, probably the very rich houses will get relatively no benefit from just an in-home display. They would probably get much more benefit in energy reduction if the energy supplier could put in smart controls and control appliances for them and just make it easy for the homeowner to save money. For the very rich, it does not matter if the bill is £600 or £700, but if somebody could take that headache away and make the bill £500 they would love it but they are just not willing to—

Jenny Saunders: Probably the best way of doing that is by getting your house better insulated if you are going to save money on gas or on heating your house by electricity. Where we could see some more innovation is by making sure that people, at the same time as having a smart meter fitted, are linked into ECO, Green Deal. They are told about all of that side of things, not just on the demand use and demand time.

Mr Lilley: That is sort of independent of smart meters.

Jenny Saunders: It is independent but it could happen alongside. We are saying why not take advantage of this and do something that pushes people and have a holistic approach to this rather than a time-of-use tariff. Let's get people engaged in the whole energy saving business.

Sanjaya Singhal: Therefore, to enable all of that we will need technology that goes beyond SMETS 2, and I am not sure whether that will be easy to do in the DCC world. Whatever I read of the smart energy codes and the 922 pages and the reams and reams that have been published, it is going to be very hard because it is ultimately about devices in the house working with one another always, whoever the supplier. As soon as you start putting innovative devices in the house, that is going to be compromised. The goal of device level interoperability, which is where the DCC SMETS 2 programme is headed, will probably preclude such in-home smart controls. What smart control companies are doing today is saying, "We don't really care what is happening to metering. We will put a second gateway into the home and control the house that way". There are businesses today that offer smart controls to homes and they are doing it independently of the metering because the metering is not going to be amenable.

Jorge Pikunic: I don't think that technology or SMETS 2 will compromise this. If you take, for example, at British Gas we have developed Hive Active Heating that allows any customers, not only British Gas customers, to control their heating and their hot water remotely. I said earlier that we are also working on a virtual version of the in-home display. I agree with your point. I think in the future we will think about these two products coming together where customers can see their consumption and immediately act on it if they choose to do that, for example with remote controls. Those elements of the customer access device gives control of the appliance or heating and smart meters can be compatible.

The other interesting part of demand-side response is connected appliances. For example, we can have washing machines that turn on when it is cheaper to do so and customers can always override that setting when it is not convenient. We tested some of those in the trial I mentioned earlier that we did with UK Power Networks and others. The results are being finalised at the moment and we would be happy to share some of those with the Committee.

There is connected home controls being compatible with smart meters in the future and that is the point about via a smartphone or a tablet. Then there is also the connected appliances. Those are two opportunities that I think smart meters enable, and there are many others that we still have not explored.

Sanjaya Singhal: At the molecular level there is a lot of work to be done to achieve that vision, but sitting at a distance I do not see that work being done today. There is a vision and there is a delivery, and what the delivery has been doing is fundamentally saying, "Hard problems to solve. Let's put them on the backburner. Multi-dwelling units, customer access devices and so on. Let's get the show on the road by just connecting a data pipe between suppliers and then deal with whatever happens afterwards". We may have a rollout, we may have this expensive infrastructure, but there may be a big gap to deliver the vision that you are talking about and Mr Pikunic is talking about.

Robert J Murray: Manufacturers are working on that today. You cited the washing machine. They are talking about replacing that lump of concrete with a battery that will charge off peak and then the appliance can use it whenever it is wanted or it could be controlled off peak as well. That is happening today. Manufacturers are working on that; one of our partners is working on

those appliances now. So they are going to happen and smart metering is a key to get them up and running.

Q77 Mr Lilley: I do not think anyone answered my question about—you did about generating capacity—how much demand reduction are we likely to see as a result of smart metering by 2020?

Don Leiper: I tried to answer it by saying we just don't know. It is not a great answer but I can't guess at something I don't know.

Jenny Saunders: The assumption is that over a longer period of time it is about 2.5% of consumption being reduced per household.

Don Leiper: From an energy efficiency perspective rather than a demand-side management perspective.

Jenny Saunders: It is less energy overall. It is at what time of day and how important it is, whether it is overall or at what period.

Jorge Pikunic: Is the question about demand-side response or just consumption reduction in general?

Mr Lilley: Consumption reduction as a result of smart metering.

Jorge Pikunic: In that case, at the moment, as some of my colleagues said and ourselves, we are seeing about 2% already. We did something recently called the Smart Meter Challenge where we gave 14 families across Britain smart meters and put them through a set of challenges to teach them how to use their in-home display over six weeks. On average they reduced their consumption, by only smart meters, by 6% on gas and 7% on electricity. That report is publicly available. It is small numbers but it shows what is possible. The fact that we are seeing 2% with some basic in-home displays is encouraging and with more things like the smart energy report that we are doing and better journeys, better education for customers, I think that 2% will be higher, will increase.

Don Leiper: We are seeing the same kind of levels on basic energy consumption reduction from the in-home displays and I think this will become a competition battleground; whichever supplier or independent organisation, whether it is a supplier or not, can guide customers to using less energy will have some kind of competitive advantage and they will be successful. Energy efficiency will become a battleground without a doubt.

Q78 Mr Lilley: This is 2% relative to what people without meters are achieving?

Don Leiper: Yes. This is proper studies with appropriate external universities helping us to make sure that we have correctly assessed it and it is not against the summer and winter and so on.

Sanjaya Singhal: Our experience with the poorest three income segments is that energy use has gone up now. We are experiencing the benefits of lower price and the real price elasticity demand. People are used to spending a certain amount. If that buys them more energy then they would rather have that. The second point I want to make is that energy consumption in the UK is already coming down by about 3% a year without smart meters. It is going to be very hard to

judge the effect of smart meters in the middle of that trend. If we did nothing, we would still get 3% energy reduction.

Jorge Pikunic: Just to clarify, the analysis that I mentioned normalises that. It stratifies the data and we compare consumption before and after for smart meters and it is statistically correct for the consumption that we will see in the normal sampling.

Sanjaya Singhal: My view is that energy benefit is such a big part of the benefits case, there is enough experience with probably nearly 1.5 million smart meters out there for a formal study to be made now, a statistically available study to be made now and to really assess what the effect is. Clearly British Gas have not rolled out in the segment of prepayment; we have and our findings are that energy consumption goes up.

Q79 Mr Lilley: You think it is going up despite smart metering because people are seeing either rising incomes or falling gas prices?

Sanjaya Singhal: Yes, because Utilita's prices are cheaper so they are using more energy for the same amount of money. Probably that is what is happening. We are working to try to understand this a bit better. We expect to publish our findings in April. On the universal saving, to be fair the impact assessment said prepayment customers will only save 0.5%. Our experience seems to say that they will in fact use 1% more.

Jenny Saunders: There are different reasons for that and they are used to prepay already. Most of your customers have fixed budgets and if that can go further that is not a bad thing, but for the majority of people getting a signal on how to use energy more efficiently they will take it.

Q80 Mr Lilley: It is not necessarily telling them how to use it more efficiently. If it is a time-of-day tariff, it is just telling them how to use less. Sorry to give my example of one, but when I hear the gas central heating go on I go and turn the thermostat down. My wife at the other end of house has her own internal thermostat, which is extremely sensitive, and she goes and turns it up. We don't actually need a meter to know whether we are burning gas or not; we can hear or feel. It might have a bit of an effect if a red light came on in the kitchen, but I am mean and she is generous. That is the basic sensitivity. I can see that it will have a big effect if there is a time-of-use tariff. In France, it does not turn it off but we have a time-of-use tariff there that we have to agree to 22 days of the year when we will pay double the tariff if we run electricity on that day and so we don't go there on those 22 days. But I can't see that it is going to have a very big effect. Let's say it does have an effect, 2% or 3%; that is equivalent to one year's decline from people becoming more economical through high price of energy. It is a pretty small reward for a £12 billion project, isn't it?

Jenny Saunders: There are two things. There is the heating and, assuming that you are using gas, that is your gas prepay. There is electricity where you may find more savings, I would suggest, from just spotting waste. Sorry, I have just forgotten the train of thought.

Mr Lilley: That was a coherent thought in itself.

Don Leiper: I am not sure it is a pretty scant reward. It is one of the benefits of the investment, so it is not the only benefit. The other benefits are significant improvements in the quality of the industry that will manifest itself in savings for energy companies, which will feed through to price.

Q81 Mr Lilley: To the extent it is helping you build better and more cheaply, it is very odd to have a compulsory programme ordained by Government. The only reason it is compulsory is because of the energy savings at the end of the day and the commitment we have both at a European level and our own legislation to try to get consumption down, otherwise we would just leave it to you to install your meters.

Don Leiper: I think the reason why it is mandated is because at a national level there is a coherent benefits case. I absolutely agree that there are niches like Utilita has identified, and maybe that Ovo and others are working on, where customers will just want it across the piece. In order to get this into place across the entire country, for suppliers there is a higher cost increase than the savings expected and the national business case is made on the back of consumption reduction. To just expect all suppliers to universally do everything at pace on the basis of knowing that it will net increase their costs was what DECC was wrestling with a little while ago. There is a national business case and that was the reason for the mandate.

Melissa Gander: We disagree. We think that if all of our customers had smart meters the actual impact to us as a business would be neutral.

Don Leiper: You may be right, but that was not the judgment that was made.

Melissa Gander: It is something that we would be doing anyway. On SMETS 1 that is definitely our assessment. We do not think that will be the case for SMETS 2 when you layer in the extra costs of the DCC, the lack of competition around reducing communication cost. We think it is layering on additional cost. So it would be something we would be doing anyway. For us, the risk would be on transfer, so with customers transferring out you then have an asset that is not being used. The benefit of the national rollout is the interoperability of the assets, but it is something that we believe at the moment can be delivered on a cost-neutral basis.

Sanjaya Singhal: In a cheaper way and at a higher level of service. What our customers, as in people we supply smart meters to, are telling us is that when we go to the SMETS 2 specification the level of customer service we can provide our customers with SMETS 1 will be lower and that ought to be a worry.

Q82 Mr Lilley: How long will it be before the in-house display can communicate with our tablets and iPhones?

Melissa Gander: It is possible now.

Sanjaya Singhal: With SMETS 1 it is possible now. With SMETS 2 it depends on when the specification comes out.

Mr Lilley: We have 1,000 pages of SMETS 2 and we don't know?

Sanjaya Singhal: No, that part we don't know.

Jorge Pikunic: It is possible to make them. In fact, at the moment we are working on a version of the virtual in-home display that could be seen on a tablet. I think Melissa was saying earlier that it is due to regulation that customers do not have the choice of either a physical or a virtual in-

home display, but in terms of the technology the customer access device is being developed at the moment.

Q83 Mr Lilley: Would it be sensible that we, as a Committee, recommend that they should be given this choice? If you do not want an in-house display and if it costs—I don't know how much it costs—£20 or something, if we can save £20, is that an order of magnitude?

Jorge Pikunic: I think so.

Don Leiper: I think if you can be certain that replacing it with something else will still meet the impact assessment then, yes. If you can't be certain, then no.

Q84 Mr Lilley: It is how people live with their iPhones. 80% of the population now have something.

Sir Robert Smith: I haven't managed to.

Mr Lilley: You are part of the 20% who will catch on eventually, Robert. That I can assure you. Well, let's say it is 50%. That is a large part of the population. There are exceptions to everything.

Chair: This is the Scottish equivalent of having your smart meter in the cellar in France.

Mr Lilley: The cellar is in England. Sorry, I am supposed to ask three very specific questions that I will ask very quickly. One is to Mr Murray from Skanska. You wrote that smart meters are an important prerequisite for scaling smart grids and provide the only valid and practical solution to demand-side response. What would be the impact on smart grids if the 2020 rollout target is not met?

Robert J Murray: What I have been saying, hopefully from the time I arrived here, is we need to start on time to derive the maximum benefits in 2020. All our investment plans are based on that. Therefore, we really do need to start on time and I think customers will benefit and UK plc will benefit from it. The longer we delay the benefits go down and I believe it will become more costly for customers. We have had five years of planning. Now is time for delivery. I think if we all focus on delivery and focus on things like prepayment solutions now, it will be success.

Q85 Mr Lilley: We have had a delay announced in the DCC, in fact two I think, and historically once you start getting delays you get more delays.

Sanjaya Singhal: It is very likely you will. I have written a few papers on just this and understanding where the risks are. If it is any use, I can circulate them to members of the panel.

Mr Lilley: Yes, please.

Melissa Gander: With delays in the DCC, some suppliers are still rolling out SMETS 1 meters. I think there are some that are very committed to rolling out SMETS 1 meters because we believe in the benefits for our customers. There are those who are reluctant. They will not move until we have the DCC in place and SMETS 2 and a mandated rollout. There are suppliers that are

proactively moving on SMETS 1 meters. It is a delay to the interoperability and the national infrastructure, but we can still offer consumers a lot of benefits now.

Jorge Pikunic: I agree. I think the DCC is a step, a piece of infrastructure that enables SMETS2 technology but many suppliers are already installing SMETS 1 meters that will be at some point involved, hopefully as early as possible, into the DCC when it is live.

Robert J Murray: We believe you need to roll out SMETS 2 to get the maximum benefit in terms of demand management and so on. We are not focusing on outcomes and if we started to focus on outcomes it would drive the right behaviours in our community. I think people are looking for delays and looking to do replanning and we should be focusing on delivery.

Q86 Mr Lilley: Do you have a plan B if it is delayed?

Robert J Murray: It really depends on our clients, the energy suppliers. They are in the driving seat on this. We can encourage, we can enable, but ultimately it is down to them to really push maximum rollout of SMETS 2 meters.

Q87 Mr Lilley: Mr Singhal, you wrote that the key to demand-side management is getting the DNOs involved in the smart meter process and getting customers to agree to share data between suppliers and DNOs. How do you propose that this should happen?

Sanjaya Singhal: Today the process for collecting data from customers—it is the customers' data—is that we as suppliers seek their permission and assent to use the data ourselves for the purpose of providing a customer service to them. I think the way to extend that to DNOs would be for suppliers to go and seek the same permission from the customers for the use by the DNO. I believe DCC may make that easier, although I still do not see how without the assent from the customer you will share the data with anybody other than the supplier, so you will need to do that.

Don Leiper: There is a practical rule change that may be required. At the moment, the information that suppliers can get from the customer is the information that is necessary to execute our role as a supplier. If it is deemed that information that is necessary for DNOs to execute their role as a DNO is a different set of data, then there is no reason why the DCC should not be able to transfer that across with that set of procedures.

Sanjaya Singhal: With SMETS 1 equipment we already provide the flexibility for DNOs to look for DNO-specific information, like what is the voltage rather than what the energy consumption is or what are the levels of voltage variation, quality supply kind of things. That is already available with SMETS 1 meters, but DNOs are not yet seeking that information. Again, we are in that domain of is that the DNO's information or is that the homeowner's information, but I think it will be legally right to have that ticked box and say it can be shared with DNOs.

Q88 Mr Lilley: Finally to Mr Leiper, you wrote allegedly, it says here, that smart meters probably won't be effective on the demand-side response in the short term. Why is this and when do you see it playing a more significant role?

Don Leiper: I think I tried to answer that question earlier. Our perspective, which is just our perspective, is that adding complexity into customers on a universal basis, enough to make a difference at a national level from a demand-side response, as opposed to a simple energy consumption reduction, say, is not something we would go for in the early days of smart metering. It is quite complex and it does not have a great reputation from other countries in terms of trying to go at it too hard, too early in the smart meter rollout. We would just put it later in the rollout. That is different from energy efficiency advice, consumption reduction. I really mean in the demand-side response, as in completely different actions taken by customers in either time shift or simply stopping using energy at certain times of day.

Chair: Thank you all very much. It was a very interesting session indeed from our point of view and you have given us a lot of food for thought.