PARLIAMENTARY DEBATES

HOUSE OF COMMONS
OFFICIAL REPORT
GENERAL COMMITTEES

Public Bill Committee

SMART METERS BILL

Second Sitting

Tuesday 21 November 2017

(Afternoon)

CONTENTS

No proofs can be supplied. Corrections that Members suggest for the final version of the report should be clearly marked in a copy of the report—not telephoned—and must be received in the Editor's Room, House of Commons,

not later than

Saturday 25 November 2017

The Committee consisted of the following Members:

Chairs: Mike Gapes, †Mrs Cheryl Gillan

† Carden, Dan *(Liverpool, Walton)* (Lab)
† Debbonaire, Thangam *(Bristol West)* (Lab)
† Freer, Mike *(Finchley and Golders Green)* (Con)
Gibson, Patricia *(North Ayrshire and Arran)* (SNP)
† Grant, Bill *(Ayr, Carrick and Cumnock)* (Con)
† Harrington, Richard *(Parliamentary Under-Secretary of State for Business, Energy and Industrial Strategy)*
† Kerr, Stephen *(Stirling)* (Con)
† Lewis, Clive *(Norwich South)* (Lab)
† McCabe, Steve *(Birmingham, Selly Oak)* (Lab)
† Morris, Grahame *(Easington)* (Lab)
† Pawsey, Mark *(Rugby)* (Con)
† Quince, Will *(Colchester)* (Con)
† Ross, Douglas *(Moray)* (Con)
† Smith, Laura *(Crewe and Nantwich)* (Lab)
† Tolhurst, Kelly *(Rochester and Strood)* (Con)
Warman, Matt *(Boston and Skegness)* (Con)
† Watling, Giles *(Clacton)* (Con)
† Western, Matt *(Warwick and Leamington)* (Lab)
† Whitehead, Dr Alan *(Southampton, Test)* (Lab)

Jyoti Chandola, Clementine Brown *Committee Clerks*

† attended the Committee

Witnesses

Derek Lickorish MBE, Secure Meters

Richard Wiles, Vice President of Sales for UK and Ireland, Trilliant Networks

Sacha Deshmukh, Chief Executive, Smart Energy GB

Dhara Vyas, Chief Executive, Head of Smart and Sustainable Energy, Citizens Advice

Dr Richard Fitton, Lecturer in Energy Efficiency, Salford University (also a member of the Smart Consumer Alliance)

Dr Sarah Darby, Environmental Change Institute, University of Oxford

Public Bill Committee

Tuesday 21 November 2017

(Afternoon)

[Mrs Cheryl Gillan *in the Chair*]

Smart Meters Bill

2 pm

The Chair: Welcome to the afternoon evidence session of the Smart Meters Bill. It is a little warm in here; if gentlemen wish to remove their jackets, I have no objection—and that goes for witnesses as well. We are on a pretty strict timetable. I am afraid that this session, for our two witnesses here, will be brought to a close at 2.45 pm or sooner. I ask the witnesses to introduce themselves to the Committee and I will then call for questions from around the room.

Examination of Witnesses

Derek Lickorish and Richard Wiles gave evidence.

Derek Lickorish: I am a director and an adviser to Secure Meters Ltd, and have been for the last 10 years. I have spent my last 47 years in the power industry, joining as a trainee in 1970 and retiring in 2007 as the chief operating officer for EDF Energy.

Richard Wiles: I am the vice-president of sales for the UK and Ireland at Trilliant. I have 12 years' experience in the smart metering industry. I worked for Landis+Gyr, which is a supplier of smart metering in the UK and in overseas markets as well. I was involved in the SMETS 2 communication project for a previous company and have been with Trilliant since March this year.

The Chair: Thank you very much, gentlemen. You are very welcome. I believe that the Minister has indicated that he would like to ask the first questions.

Q46 The Parliamentary Under-Secretary of State for Business, Energy and Industrial Strategy (Richard Harrington): Thank you, Mrs Gillan, and welcome to the Chair. It is very nice to see you. I will ask just a brief question to give plenty of people a chance.

Thank you for coming today, gentlemen, and helping us. As you probably know, the evidence you are giving today is the beginning of the Committee stage of the Bill. May I ask you both to comment on the interop—I cannot pronounce it—on how the Data Communications Company system will help the SMETS 1 meters to be operable throughout the whole system? We keep hearing about it and my shadow and I have discussed it at different times, but I would be very interested in your comments.

Derek Lickorish: I think that interoperability for SMETS 1 meters will come about in two ways. But first, what is interoperability? At the moment, SMETS 1 meters have their own mini data communications company. They have their own communications infrastructure, and it is generally all made by the manufacturer who supplies the meters. There are several of those systems out there. The initial interoperability can come about by making SMETS 1 meters interoperable through their communication systems. That is already available technically, but it requires the participation of the big six to make it happen.

You asked specifically about how the DCC deals with enrolment and adoption—those are the terms used. In the case of Secure Meters, it will take the output from its smart meter service operator system and plug it into the DCC. That, on the current timeline, is due to take place next October. That is based on a whole range of assumptions, and I think it is more likely to come about at some time during 2019, subject to all things here on in going very smoothly for the DCC. So there are two options to make interoperability work.

Richard Wiles: Likewise, at Trilliant, with our meters we offer integration into third-party systems that allow interoperability and for the devices to remain smart. We do that through one of our clients. We also offer a cloud-based smart meter systems operator—SMSO—solution ourselves, and we can provide that interoperability for people who take up our service. That enables them to put meters on the wall pretty quickly, using a similar platform to that of our larger suppliers from the big six energy companies.

We also provide that service through an aggregator that can do secure file transfers that allow even quicker adoptability and the ability to get meters on the wall, but we adhere to the same standards as the DCC for enrolment and adoption as to how we would build that development interface to communicate to our existing infrastructure and make sure that the service requests that come through the DCC path meet the criteria of the DCC, similarly to what happens with SMETS 2.

Derek Lickorish: So SMSO interoperability could be achieved now.

Q47 Dr Alan Whitehead (Southampton, Test) (Lab): The Government have indicated that SMETS 1 meters will no longer be installable after a particular date and have given guidance about what can be installed up to that date. There is a consultation at the moment about whether that date might be changed slightly to arrange for a smoother handover from SMETS 1 meters to SMETS 2 meters. What effect will that arrangement have on the overall passage of the roll-out, and what do you think about the present availability of SMETS 2 meters to ensure that that roll-out proceeds?

Derek Lickorish: We are kidding ourselves if we think that we are about to have a mass roll-out of SMETS 2 meters any time soon. As we heard this morning from the gentleman responsible for DCC, there are 250 SMETS 2 meters connected to DCC, and they are electricity-only; that is 200 more than I thought were connected to DCC. If we were about to have a mass roll-out, we would have at least 200,000 fully interoperable SMETS 2 meters connected to DCC to facilitate end-to-end testing of that system. That is currently not the situation.

The July 2018 date is predicated on the fact that SMETS 2 meters are going to roll out very soon. For that to happen, those meters need to be declared interoperable. Interoperability is essential not only now but in the future. What does that mean for people who

do not follow all this stuff at the molecular level? We decided at the outset of the smart meter programme that we would have many world firsts. There are about seven or eight first-in-the-world developments in this programme, one of which is that every meter must be interoperable with other meter manufacturers' meters so that, should a meter fail, it can be replaced by another meter manufacturer's meter without the in-home display being replaced. That is a key tenet of the programme.

A process known as smart meter design assurance is supposed to be up and running to prove that SMETS 2 meters are interoperable. That is not up and running, and it has some technical difficulties. Yesterday, a letter arrived to say that one SMETS 2 meter manufacturer has a problem with compatibility of the hub. That is not to say that that will not be solved, but that was only yesterday. Is it just that manufacturer's SMETS 2 meter or is it all of them? In theory, it should be all of them, because they have all been made to precisely the same specification.

This programme is the first in the world for device-level interoperability, it is the first in the world to separate out the communications system and it is the first in the world to get all the people involved in the SMETS 2 roll-out designing to a 6,000-plus page specification. I hope you can see from that that I do not think we are going to be going very quickly very soon. Having said that, I do not think that the 2020 date should be changed. I believe that the industry should be galvanised into action to solve the problems and then there should be a reflection on what the 2020 date should be. We should not have a date that nobody believes is possible.

Richard Wiles: Trilliant's view is that there needs to be some coexistence between SMETS 1 and SMETS 2 beyond 14 July next year. Our response to the consultation is that we are concerned that smaller suppliers, which may not have done any SMETS 2 installations to date, may be in a position where they are not first in the supply chain for meters, communications hubs or other parts of the end-to-end system testing. We believe there should be coexistence and that SMETS 1 should run with SMETS 2 until SMETS 2 deployment has been proven at scale and can take over the quantity of SMETS 1 meters that will be deployed.

From our supply chain, we are concerned that if we are forced to turn off our supply manufacturing chain and then we get the go-ahead to recommence production, we will then have to ramp up. For the products that we develop, we have specialist components to ensure that the security is maintained. We need to ensure that other key, core aspects of the supply chain are readily available so that, should the call come to bring SMETS 1 up again at a date beyond 14 July, we can serve and make a credible difference to the actual roll-out and then achieve the 2020 planned deadline.

Dr Whitehead: If, as we have heard, SMETS 1 can be made fully interoperable with software upgrades, what is the purpose of SMETS 2 meters?

Derek Lickorish: What is the purpose of SMETS 2 meters if we can make SMETS 1 interoperable? To be able to answer that question, you would need to have a review and some evidence on which to base that decision. At the moment, it is beyond my sphere of full knowledge on everything to give a clear-cut answer to that question.

Richard Wiles: SMETS 1 and SMETS 2 need to run in coexistence. I believe that some clients are in prepayments mode, and prepayment is available in SMETS 1 now. I am talking about some specific instances where SMETS 2 is required: for aspects such as high-rise buildings or dual band comms hubs, when that comes into effect, when greater interoperability is required. Certainly from our position, we believe that we can deploy a larger volume of SMETS 1 meters and still help the Government meet the 2020 deadline.

As to SMETS 2, there are specific advantages around interoperability that have been touched on. While each individual SMETS 1 provider creates mini DCCs, as Derek mentioned earlier on, that will be avoided with SMETS 2. However, with enrolment and adoption, we are working with DCC at the moment, and that will allow the interoperability of our estate to be absorbed into the wider continued operation of the smart meter system through DCC.

Derek Lickorish: Can I add to my answer to Alan's question and build on a point Richard made about interoperability? Although SMETS 2 has some advantages on the one hand, it is not at the data level. If you take mobile phones, they can keep on being produced because they are data interoperable with the network. SMETS 2 meters have to be identical not only for the meter installed today but for those in 15 years' time as well. This backwards compatibility requirement is built into what we have. SMETS 1 meters are data interoperable, which is why we can make SMETS 1 interoperable relatively easily from the mini DCC position.

I know that all these things are grindingly complicated. We are trying to explain them in a way that I hope is straightforward.

Q48 Steve McCabe (Birmingham, Selly Oak) (Lab): After this morning's witnesses, I was left with the impression that the DCC programme is absolutely fine, on target and all is going well. Has the DCC programme been delayed? If so, what have the problems been?

Richard Wiles: There have been publicised delays within the go-live period. The go-live date of November last year was when we had a release of DCC that allowed devices to be installed and to be made interoperable. A statement was made this morning that there are 215 meters on the system. It was envisaged that there would be a considerably higher volume than that now.

Q49 Steve McCabe: What would you have expected? What was the figure meant to be?

Richard Wiles: For the initial programme, by this stage, the figure was meant to be in the millions.

Q50 Steve McCabe: So 215 was the success figure, but it should have been millions. Is that right?

Richard Wiles: Yes.

Steve McCabe: Thank you.

The Chair: Have you anything to add on that, Mr Lickorish?

Derek Lickorish: Quickly, yes. Do not forget that the go-live date of November 2016 was a year late anyway. If you look at the original plan, as put together in the

business plan by the DCC, the idea was that six months after go-live it would be ready at scale and six months after that the system would be stabilised. It went live last year, in November 2016, and as we all now know, clearly, from the horse's mouth, it has 215 devices on it now.

Q51 Steve McCabe: That is the DCC; it does not sound quite as rosy to me as it perhaps sounded a couple of hours ago, but let me ask about the existing smart meters in operation. To your knowledge, how many of them, and what proportion of those that have been installed, are currently running in dumb or dummy mode?

Derek Lickorish: When they all go in initially, of course they are not in dumb mode. The percentages vary. I am told that at some stages 20% or more of them are being operated in dumb mode. That occurs for a variety of reasons—for commercial and technical reasons. The way in which the market is evolving is that meter asset providers—MAPs, as they are known—fund these assets that are going on the wall and they will also fund SMETS 2 assets. All the time, there is uncertainty about how long these assets are going to endure and whether the market is going to endure. When are SMETS 2 meters going to be ready?

There is an issue called deemed rentals. What does that mean? It means that if the acquiring supplier does not have the same sort of contract that is with the asset coming in, it gets asked to pay a very high deemed rental, which it will not pay because it renders the customer unprofitable. That means that it faces two choices: putting the meter into dumb mode, or going out and taking out that meter, even if it is the same meter, and putting in one of its own, funded by another meter asset provider.

There is quite a complex set of issues, which only we in this room and others—interested observers—understand to any degree. There is the deemed rental issue and then there is the technical issue, as we have heard. I do not criticise anyone, because everyone is breaking their back to get this programme running. Everyone is working hard, so I do not decry what anyone is doing, but the way it is set up—and it is driven by political milestones—is going to cause perverse behaviour from time to time. I will come back to that.

My final point—I need to shut up—is that we need to get to a situation in which the interim interoperability model can be made to work. It can be made to work because most of the big six have a system called instant energy—a number of them—and we could have some interoperability there, whereby they could take over the asset and resolve this commercial issue. That would deal with consumers' meters going into dumb mode on change of supplier. It would stop all the stories that the *Daily Mail* keeps printing about all the problems with SMETS 1 meters. It is not a technical issue, and the SMETS 1 meters are not inferior. Sorry, Mrs Gillan.

The Chair: Not at all. Mr Wiles, have you anything to add?

Richard Wiles: We have the ability to transmit data into the system that Derek has just referred to, to keep it live. On the point about how many units are kept in dumb mode, or put into dumb mode or non-smart mode, we do not get to see those figures. That is between the energy supply companies; it is not a direct result of the service that we offer, so I cannot give you a definite figure.

However, we can make sure that any unit put in the non-smart mode can be retained live and be reactivated at a later date, and that can be part of the enrolment and adoption figures. Even for smaller suppliers, if they inherit a smart meter system and do not wish to keep it running, or have a separate service until enrolment and adoption goes live, it can be reactivated at a later date.

Q52 Stephen Kerr (Stirling) (Con): Thank you for the clarity with which you are answering our questions, by the way. This morning we heard evidence that suggested that SMETS 1 meters were in fact interoperable and you are confirming to us that they are not. You described a status of interim interoperability. Can you revisit what you meant when you said that?

Derek Lickorish: I heard Mr Bullen talk about interoperability, but it is not interoperable unless you have the interim interoperability, which I discussed. Suppose these three cups in front of me here were Secure Meters' mini DCC, CGI's mini DCC and Trilliant's mini DCC. If I had five million cups, I would line them all up, and each one of these three would be talking to a whole pack of cups. We have been able to get these boxes to talk to this box and this box. That is where the interoperability occurs.

The Chair: Mr Lickorish, that is a very good example, but I have to tell you that for the *Hansard* reporters—*[Laughter.]*

Derek Lickorish: Then you will have access to more cups than I do. For the benefit of *Hansard*, we are saying that we have mini communication systems—each manufacturer has its own mini communication system—to talk to meters, whereas DCC will talk to the whole estate in one go. In Secure Meters' case we have invested in it ourselves, for our consumers' benefit, not just our customers'. It will talk to these other systems, and we have even demonstrated it to BEIS earlier this year, to show that it works.

Q53 Stephen Kerr: And it is on the basis of this status of interim interoperability that you believe that we should put the pedal to the floor towards the 2020 deadline. Is that what you said?

Derek Lickorish: That is an option you could take, but as currently structured, no one knows quite what will happen to them, as far as July 2018 is concerned, if they keep on doing this. I understand all the reasons and I want us to get the right outcome for the consumers and for the industry, but all the time we have uncertainty built into everything we are doing. For example, when is July 2018 coming to an end? A lot of other people who have not started on this are all waiting for SMETS 2, because it is always just round the corner. How big is the corner?

Q54 Stephen Kerr: We have 7 million of these SMETS 1 meters on walls, 20% of which you estimated are now in dumb mode. Many of these meters will be unplugged. If people have changed supplier, they have probably unplugged it because it is not providing any functional service to the consumer anymore. How do we update the SMETS 1 meters to make them SMETS 2 compatible?

Richard Wiles: The whole point of enrolment and adoption, which we are working on now, is to make sure that our estate will be able to go into DCC world and provide a similar level of functionality that SMETS offer. We are addressing that right now. It is an active programme that is underway. That will provide true interoperability, not just for the energy supply companies, but for any licensed holder of DCC, energy supply network operators and licensed third parties as well.

Q55 Stephen Kerr: How do you update them, though?

Derek Lickorish: You can update them. This is a very detailed discussion and I am happy to talk to you separately about it. This term "unplugged" means that they may not be looking at the IHD. The system is still connected and has not been unplugged. If a secure meter has gone dumb, we can still talk to it, so it is not an issue.

Q56 Stephen Kerr: So the visual data might be—

Richard Wiles: For our estates, part of the process is to make sure that when the initial releases come out, there is an upgrade path to ensure that the firmware on the devices is SMETS 1 compliant. We have had extremely high percentages—in the high 90s—over the upgrade paths to make sure that the firmware is compliant with the meters to ensure that they can be enrolled and adopted. We have excellent, proven records to show that we can do OTAs at scale, throughout the entire programme that we have been deploying SMETS 1. I do not believe that there is any issue with the product not meeting the standards.

Derek Lickorish: Similarly, we have had huge numbers of over the air firmware upgrades, which is where I think the rubber will start to hit the road for DCC when it starts doing that. Not only have we done that in this country in the way that Richard spoke about, we have been heavily involved in Australia—over a million meters, using silver springs technology, silver springs embedded in our meters.

Out there, we will have done millions of over the air firmware upgrades. It is not until you start that part of the journey that you really begin to understand the issues. That is why I say that this is the moment when the industry should be galvanised to start solving all these problems, and agree that the 2020 date should not be altered now, but that it is part of the journey to find out what else needs to be done, because there are so many world firsts and they take time to solve.

The Chair: For the convenience of the Committee, I have four indications of questions that have to be asked before 2.45 pm, so moving on now to Mr Pawsey.

Q57 Mark Pawsey (Rugby) (Con): May I move on to a bit of the Bill that we have yet to cover in our deliberations—the special administration regime? The Government say that the risk of the DCC failing is very low, but none the less want to put in this special administration regime. In what circumstances could you envisage the DCC failing, and do you agree that the likelihood of that happening is, as the Government say, very low?

Derek Lickorish: This is not my expertise, but I am under the impression that Ofgem has a responsibility to make sure that DCC can carry out its operations. If, heaven forbid, it does not work, that is probably the worst case scenario, and what happens then?

Q58 Mark Pawsey: How would you define it not working? What constitutes not working?

Derek Lickorish: We have just been talking about over the air firmware upgrades. Remember, this is a world first: we are world first with so many elements of this that have not been tested. If we are unable to do over the air firmware upgrades at scale, that must be a failure.

Q59 Mark Pawsey: Would that cause the DCC to fail and this special administration regime to kick in, in your view?

Derek Lickorish: It could do. I am afraid I feel out of my depth in being able to construct a scenario. Let us face it, we have said that DCC went live a year ago. Today, everyone is astonished to find that only 250 meters are connected to it, but it is working.

Q60 Mark Pawsey: Are the Government just being prudent by including this clause in the document?

Derek Lickorish: I think it is a very prudent situation. There must be an anxiety, otherwise why have they done it?

Richard Wiles: Likewise, I am not able to answer as to the exact reasons, but bringing previous Acts together under one is a sound idea. With regards to how DCC would reach that situation, again, I have no absolute definition as to how that could happen now.

Q61 Matt Western (Warwick and Leamington) (Lab): This is not my specialist subject, but I am interested in the asset provider side. I am trying to get my head around this. Could you give me an idea of how many manufacturers are supplying to the industry?

Richard Wiles: There are different manufacturers for SMETS 1 and SMETS 2.

Q62 Matt Western: For SMETS 1, sorry.

Richard Wiles: There are probably about half a dozen different manufacturers that are providing SMETS 1 solutions, and it depends on the scale that they are deploying at. We are the two companies sitting at the top of the table; collectively we have the largest market share of the SMETS 1 devices going out there. We have supplied multi-millions of devices, smart meters, communication hubs and connected devices that hang off that through our communications hub and mini DCC head-end systems. There are other companies out there that have provided a smaller amount, but I cannot give you a definite figure on the volume of that.

Q63 Matt Western: These units are provided to the companies to install, and that is written down essentially over a lifetime. What sort of lifetime are we talking about for one such product?

Derek Lickorish: The old Ferraris disc meter had a lifespan on circuit starting at about 18 years. It came in, you put an airline on it, took the dust off it, and then put it out for another 18. We are now talking about a very sophisticated electronic device, and I do not think we know the long-term answer to that, but it ought to start with 15 years.

Q64 Matt Western: So where we are hearing about another provider possibly coming in, and this question of interoperability—if you have one supplier and you switch to another supplier, there is this, "We are going

[Matt Western]

to switch the unit at the same time"—why can that other company not take over the asset? Is it simply about communications?

Derek Lickorish: No, there are two issues. There is the technical issue, and we are saying that you can deal with the technical issue.

Matt Western: That is what I thought.

Derek Lickorish: Then it comes down to commercial contracts.

Matt Western: That is the point I want to get to.

Derek Lickorish: This was an issue raised some time ago—in fact, probably two, but maybe three, years ago—over deemed rentals. You were getting enormous deemed rentals being charged by some meter asset providers to somebody who was going to use their meter, because they had inherited it on change of supplier. Some of those are not regulated businesses and people smell an opportunity on this sort of thing, in particular when it is in the state that it is—it is all relatively new—but then there are forces that will create anxiety about an asset's longevity in that space, so the deemed rental will be high. It is rational to be high. That is because the framework that sits all around this is uncertain and, as we all know, markets like certainty. These people—they are financiers—want certainty, and if all the time we keep saying, "Well, SMETS 2 are just around the corner, no more SMETS 1 meters" it all creates a fog and a fuzz that will drive what I believe to be irrational behaviour on some of the deemed rentals. Ofgem is aware of it, BEIS is aware of it and this is another issue that the industry needs to galvanise around, because if we are not careful, if we do not get proper interoperability tested, which is in trouble at the moment, a risk premium will be attached to those contracts.

Matt Western: So the costs go up.

Derek Lickorish: So the costs go up. Bear in mind, and forgive me for saying, that this is a £12 billion programme. DCC alone has seen its costs go from £1.3 billion to £2.1 billion. Forgive me, but every £1 billion will give you 10 210-bed hospitals. These are huge sums of money and we need to make sure that the framework that sits around them is accurate and fit for purpose.

Q65 Matt Western: There is a massive issue here, isn't there?

Derek Lickorish: Yes, there is.

Q66 Bill Grant (Ayr, Carrick and Cumnock) (Con): I am still enthusiastic about the potential for smart meters and there is still will behind it. I am trying to make a comparison and I come back to the 1970s, to the introduction of natural gas. They are two different technologies but a massive task throughout the United Kingdom. We mentioned two dates: 2020 was the desirable date and you wish that to be retained, although there was a fall-back date of 2023. At some time in this journey we are going to have to speed up the process. We are going to have to pull our socks up and get the job done. I have two questions in that regard. Do we have the production capacity for SMETS 2 meters to meet the demand when it is at its peak, and do we have sufficient human resources to install those meters commercially, hopefully to meet the target of 2020, but perhaps more realistically at a date beyond that? How are we for capacity: human resources and production capacity?

Richard Wiles: We manufacture SMETS 1 and SMETS 2 devices. We are prepared to ramp up our production line to make sure that SMETS 1 can run in parallel to ensure that any potential shortfalls in capacity can be overcome by our increased production. We can continue to keep the momentum and supply chain running in that respect. Regarding installers, by the end of SMETS 1, we are probably looking at around 12 million devices. If the current installation rate continues through to July next year, that equates to around 1.3 million smart meters per month that need to be installed.

Whether we need additional installers is something that Trilliant has not supplied services on, other than installation processes, but organisations are geared up to supply the installation requirement for SMETS 1 and SMETS 2 to meet that deadline.

Q67 Bill Grant: So you are confident in the supply chain for meters, but not so confident in the human resources for installation?

Richard Wiles: Looking at the existing number that I have been made aware of, that may need to be increased. There may need to be additional practices and we need to ensure that whoever wants a smart meter gets it installed in time by 2020.

Derek Lickorish: It has been worked out for me—it says so here—that the additional resources to meet 2020 need to increase from where they are today by 283%. They need to be ready now to start running to meet 2020. I do not think that is possible because these need to be highly trained people. This is not a straightforward job for an electrician; it is more complicated than that. Before I come to resources, the current productivity rate of the teams working out there is less than half what was originally thought. You have to take that into consideration; it is not factored into my 283% increase.

As for manufacturing, subject to clarity about the SMETS 1 end date, because the supply chain is already winding down for that now, if clarity could be given on that, it would ensure that that manufacturing stream was kept running.

On manufacturing capacity for SMETS 2, once you have resolved the interoperability, once you have SMDA approval, once you have tested all these devices at scale, with DCC, it must be about 12 months. Anything less would have the potential to lock in problems for the future because of the model we have chosen. It is a difficult one to answer, but if we satisfy that, there is no reason why manufacturing capacity will not be available.

The Chair: Thank you. If we can keep the answers brief, we will be able to get in Mr Carden and Mr Morris.

Q68 Dan Carden (Liverpool, Walton) (Lab): Mr Lickorish, you have been very clear about the technical versus the commercial issue in terms of whether this can benefit customers if they can move from one supplier

to another. Are there any answers from Government, or the structure of how this is set up that can deal with those commercial issues?

Derek Lickorish: I think that Ofgem ought to be able to bring the people round the table who can solve these issues. I do not think they are particularly visible at the moment. In the grand scheme of things, there will be those who say "yes", but we have said that we think that 20% are in dumb mode; it might be less than that at other times. In terms of the 80: 20, it does not get the attention it deserves. If we are not careful, this becomes a bit of a cancer and it will grow bigger—20% of 45 million will be a huge number of meters, for whatever reason. It can be solved.

Richard Wiles: Absolutely, I agree with that. We need to ensure that there is some form of incentive. The incentives need to be financial in some form—because some energy supply companies will be losing clients, as well as those gaining—to make sure they have the interoperability requirements to allow them to stay smart.

The Chair: Thank you. The last question goes to Mr Morris.

Q69 Grahame Morris (Easington) (Lab): Thank you, Mrs Gillan. I will also try to be brief. Mr Lickorish, you raised some interesting concepts. I was not familiar with the deemed rental issue, for example. You mentioned perverse behaviour caused by political milestones. Presumably you are of the belief that delaying that roll-out to 2023 is a political milestone that will induce perverse behaviour.

Derek Lickorish: It is no good having a target that nobody believes in. Every programme must have targets. I am not saying, "Change 2020 now." I think that is a good contingency and I am pleased to see that someone somewhere realises that. I do not think it has a perverse effect on behaviour. You can keep on saying it is 2020, but we need a recognition now that says, "We will look at all the issues and have a unity of purpose about what the targets should be", because at the end of the day this is not Treasury money; this is customers' money.

Q70 Grahame Morris: I want to try to understand this, because essentially I am a layman. Looking at the obstacles to achieving the milestones that are already agreed and the performance of the DCC, there seems to be general disappointment about the numbers. A year on and it is 250 when the assumption was that it would be considerably more. If my reading of the explanatory notes is correct, the DCC is regulated by the Gas and Electricity Markets Authority. I am not suggesting that there would be a failure by the DCC, but in that event—for whatever reason, whether it is political interference or technical issues—the Bill has a proposal to give the Secretary of State the power to veto any proposal by the authority to transfer the DCC licence. Do you have any thoughts on that? Are there any circumstances when it would be reasonable to veto the transfer of the licence?

Derek Lickorish: I could give you an answer tomorrow, but I have not thought about it enough, and I do not wish to give a weak, woolly answer because I do not understand the issues at play.

Q71 Grahame Morris: Hypothetically, could there be circumstances where due to poor performance or whatever it is necessary to transfer the DCC licence?

Derek Lickorish: One has to say that it must be possible, so it is right to prepare for that contingency, but I am basing that purely on my own experience of being in the power industry for 47 years. You always have to expect the unexpected. If something seriously goes wrong with this—there is an endemic failure and they are not able to solve it—you must be able to have the power to do something about it. That seems possible.

Q72 Grahame Morris: I am not trying to put words in your mouth; this is just for my understanding. Should the Committee be concerned about the veto proposed in the Bill to prevent such a transfer?

Derek Lickorish: I am not sure that there should be a veto to prevent it.

Grahame Morris: We will ask the Minister about that during the course of the Bill.

Q73 The Chair: Mr Wiles, is there anything you would like to add to this?

Richard Wiles: With the complexities and everything, the whole programme is very complex by the nature of the design. To be honest, I have not examined absolute cases of how it could happen, so unfortunately I cannot answer that question.

The Chair: I think we are coming to the end of this session. I think that was probably the last question, but if you reflect on any of the questions that have been asked today—particularly the last question from Mr Morris—and would like to provide anything to the Committee, you can do so in writing by tomorrow.

Derek Lickorish: By tomorrow?

The Chair: Yes, I am afraid it has to be as rapidly as that, but we would be very grateful to receive any further and better particulars from either of you. On behalf of the Committee, I thank you for coming here today and giving your evidence so clearly to us. I am sure we all feel better informed for having your evidence.

Derek Lickorish: Thank you for the opportunity.

2.45 pm

Examination of Witnesses

Dhara Vyas and Sacha Deshmukh gave evidence.

Q74 The Chair: Ms Vyas and Mr Deshmukh, welcome to the Committee and thank you very much. It need not be said, but if you want to remove your jacket, feel free, in case it gets a little hot in here.

Can you start by introducing yourselves for the Committee, please? Ms Vyas?

Dhara Vyas: I am Dhara Vyas and I am the head of smart and sustainable energy at Citizens Advice.

Sacha Deshmukh: I am Sacha Deshmukh and I am the chief executive at Smart Energy GB.

The Chair: I think you have seen how the sessions are conducted here. Questions come randomly from the members of the Committee as they catch my eye, and may I ask you to speak as clearly as you can for the *Hansard* Reporters?

I think we will start with the Minister.

Q75 Richard Harrington: Thank you very much, Mrs Gillan.

I will continue from the evidence that I know you heard before, because you were sitting—quite rightly—behind those witnesses. How important do you feel it is that the energy suppliers make a swift and smooth transition to using SMETS 2 meters? I ask that because we have heard from people who have been suppliers of SMETS 1 meters and from others who have taken a broader view, so I would be very interested to hear your view, please.

Dhara Vyas: From the Citizens Advice point of view, we are quite keen to see that transition happen as soon and as rapidly as possible. As I am sure you are aware, SMETS 1 meters do not really provide the same sort of functionality as SMETS 2 meters, and a big part of that is the continuing benefits of SMETS 2 meters. You have heard about the interoperability and the ability to switch, but there is also the kind of loss of functionality in terms of the dynamic currency conversion-enabled services, or DCC-enabled services, that they have access to, and things like "last gasp, first breath", whereby a network could see if somebody is off supply and act really quickly. SMETS 1 meters do not have that sort of capability built in. So things that really serve to protect consumers are built in to SMETS 2 in a way that they are not with SMETS 1.

Also, there is confusion as the roll-out progresses at a pace and as suppliers and SEGB are working to promote the roll-out and encourage consumers to take up the offer of a smart meter. With different meters going on the wall, consumers are already confused and will ask questions, such as, "My neighbour can do this, and they switched, and they kept their meter. How come I can't?" So the increased confusion around having more SMETS 1 meters on the wall will cause a problem.

Sacha Deshmukh: I agree that the SMETS 2 roll-out is very important. The only extra contextual point that I would add is that people should remember just what a step forward SMETS 1 meters are from previous meters. So the feedback from consumers who have SMETS 1 meters—several million of them now—is overwhelmingly positive.

I remember a story that was told to me recently. A consumer who had previously been on a prepayment dumb meter had slipped and fallen—she was an elderly lady—and broken her hip, while going out to charge up her key late at night on a petrol forecourt that was wet, in the rain, in a month a little bit like this in weather like this. So a SMETS 1 meter and the capability it offers is a huge step forward for consumers, but I agree that SMETS 2 meters are also incredibly important, for the reasons that Dhara just outlined.

The Chair: Minister, anything further?

Richard Harrington: No. I will give everybody else a chance. Thank you very much.

Q76 Dr Whitehead: Mr Deshmukh, I was very interested to look at your pan-supplier customer funnel, which you set out in your written evidence to the Committee. The November 2018 funnel appears to suggest that getting on for 35 million people will not have a smart meter by that date. Of those, 17 million will be eligible at that point for a smart meter, or will have been persuaded to have a smart meter, but energy suppliers will only plan to book installations for 5 million of them, and 3.8 million will actually get smart meters at that point. I set that against the smart meter roll-out cost-benefit analysis, which came out in August 2016. It shows a concentration of installations at the end of 2018 or 2019 of something like 14 million to 15 million a year at that point. It is not going to happen, is it?

Sacha Deshmukh: The final analysis to which you are referring was conducted by energy suppliers over the summer. I believe that over 90% of the market share of energy suppliers contributed the data to that exercise. One part of the data that they submitted gives you the number of installations at the bottom of the funnel along with their predictions, or their desired number of installs, for next year. I know they have to discuss those plans with the regulator Ofgem, so I cannot take a view as to whether the regulator thinks that those plans are adequate, or on any of those dialogues. As far as I am aware, the data that went into that analysis is the most up-to-date data.

Q77 Dr Whitehead: We have two suggestions here. One is that only 4 million people will go on to have a successful installation of a smart meter by November 2018, and yet it is suggested on the smart meter roll-out cost-benefit analysis that something like 14 million will be required to have smart meters installed at that same point in order for the roll-out to be completed by 2020. So in other words, there is to be a bunching of installations at an incredible level between the end of 2018 and the middle of 2019. Do you think it is possible to achieve that over the period, even with some amendments to your pan-supplier customer funnel arrangement?

Sacha Deshmukh: Our organisation's responsibility lies in consumer demand for the product, so it deals with the top of the funnel, as it were. Consumer demand for the product is very strong. In respect of the consumer demand within that funnel, the top is measured by the number of consumers stating that they want to have smart meters within the next six months, so it is a hard measure of demand. There is demand there. I am not able to comment in much detail on the conditions that might improve the lower parts of the funnel. I apologise if it was not as clear as it could have been in the written evidence, but the figure in the evidence to which you refer related to the six-month period before November, rather than the whole of that year. Those are the latest predictions from energy suppliers, which may be different from the ones to which you referred in the most recent cost-benefit analysis of 2016.

Q78 Dr Whitehead: My point is that it is indeed a slice of the period—3.8 over the six months prior to November 2018—and yet in order to reach the roll-out target, the suggestion is that about 14 million to 15 million ought to be installed over that same period. It seems to be rather a large gap.

Sacha Deshmukh: The factors taken into account in that particular analysis, when energy suppliers submitted their data, included their predictions. Some of the issues that I heard the Committee discussing with the witnesses today included their predictions of meter asset availability, and of their ability to actually deliver the installs in question to the expected quality standards. They may have changed their predictions of the number of installs that they would be expecting to deliver from a year ago.

The Chair: Ms Vyas, did you want to add anything to that line of questioning?

Dhara Vyas: No.

Q79 Dan Carden: We have heard positive stories about prepaid customers and the benefits that they enjoy. I believe that most of the roll-out so far has been to prepaid customers. There is a satisfaction rating of around 80%. Are you less able to be positive about the benefits to other customers? What are those benefits?

Dhara Vyas: Our research echoes Smart Energy GB's work, and shows that consumers are really positive about their meters on the whole. That applies to both prepay and credit consumers. Prepay customers stand to gain so much from this. I think it will change the prepay market, the dynamic of the prepay market and assumptions about people who do or do not prepay for their electricity and gas. I agree with you that, yes, prepay customers stand to gain a lot. A lot of customers might choose to have prepay as well because of the flexibility of it.

Early experiences research that we have conducted has shown that all customers like the visibility of their energy use. In the long term, they are quite excited about the ability to have new tariffs linking smart products and services in their homes. It generally does tell a positive story.

Obviously, you will not be surprised to hear that we and Citizens Advice also gain quite a few not-so-positive stories. Early experiences research has found that people do complain about things such as loss of services when they switch. Billing issues are quite a big problem, and that is for credit customers with shock bills or back-billing. There is a lot of anger about "Why am I still getting back-bills?", or "Why is my bill inaccurate when I was sold this by being told that it was the end of estimates—that I would not get an estimated bill but an accurate, up-to-date bill?".

There are issues that need to be ironed out as the technology hopefully embeds. I think suppliers have been working quite hard on agreeing back-billing principles and how to work with customers. A big part of that is communication: make sure you send a meter reading before your smart meter is installed, so you do not get a big shock bill when your new meter goes in. So, there are other areas where credit customers have both positive and negative experiences.

Q80 Dan Carden: We have also heard quite a bit of evidence about the difficulty consumers are having transferring. One company puts a smart meter in, then there is an issue moving to another company. As far as I can remember, for years and years, we have been told that the ability to move from one supplier to another is the answer to reducing bills. This seems to fly in the face of that.

Dhara Vyas: It is the SMETS 1 issue: a SMETS 1 meter is not always interoperable with another supplier's system. That is where SMETS 2 provides a solution. That echoes back to my earlier point that we should focus on moving more SMETS 2 out there.

One last thing I will say is that all consumers, whether on prepay or credit, stand to gain a lot from the energy savings and energy-efficiency advice that will be provided on installation of the smart meter. I think that is quite key. Regardless of meter mode, the experience of having a supplier in your home fitting a smart meter, talking you through the in-home display, talking you through energy-efficiency advice, which is tailored to you and your home, is a once-in-a-lifetime experience. It is really important that suppliers get that right.

Q81 The Chair: Mr Deshmukh, anything to add?

Sacha Deshmukh: I would just add that I think the research Mr Carden refers to is the most recent research by Populus. You are absolutely right that prepayment customers reported 89% recommendation—so, very high. The pattern of the very high recommendation continues to all low-income customers, or customers with a vulnerability in the household, so low-income credit customers are also strongly recommending the product.

Even among households that are not low-income, the levels of recommendation are significantly higher than in other areas of technology. It would be fair if you were then to say that the experience of buying energy through an analogue technology has been particularly poor—and it has. Clearly, those levels of satisfaction are also linked to the fact that this was the last area of pretty much any of our daily lives where people had been reliant on such old-fashioned technology, even in the credit mode.

Q82 Mark Pawsey: May I ask once again about the special administration regime? The previous witnesses were not able to help us tremendously on that. Ms Vyas, you have come out in great support of the special administration regime. You have described the DCC as key national infrastructure. Can you explain why this is such an important part of the Bill?

Dhara Vyas: A big part of it is to do with data privacy. The creation of the DCC means that your supplier has access to your information, but via the DCC. Consumers retain control of their information and allow their supplier to access their information on a daily, half-hourly or monthly—as a minimum—basis.

Q83 Mark Pawsey: This is the provision in respect of the very unlikely possibility of the DCC becoming insolvent.

Dhara Vyas: I am so sorry; I thought you meant a comment on the DCC in general, not the actual provision in the Bill.

Q84 Mark Pawsey: No, I am particularly interested in why you think that the special administration regime is such an important part of the Bill.

Dhara Vyas: As a backstop, because the DCC should not be in a position where it could fail.

Q85 Mark Pawsey: Under what circumstances could it possibly fail?

Dhara Vyas: My understanding of the provision in the Bill is that it is to ensure that financially it is kept afloat.

Q86 Mark Pawsey: Why should it not remain afloat? That is the question I am asking. What is the likelihood of that ever happening? How could the need for it ever arise?

Dhara Vyas: If suppliers are not able to keep on—I think the DCC is funded by suppliers?

Sacha Deshmukh: I am not an expert in special administration regimes either, but my understanding is that however unlikely this is, this form of regime structure is relatively common in large infrastructure suppliers in the country, whether in the water sector, the rail sector or, in this case, the energy sector with this new infrastructure provider. But I am afraid that beyond that, I am not an expert in special administration regimes.

Mark Pawsey: All right, we will save it for the next witness.

Dhara Vyas: The rationale behind our response is very much that it is crucial that it should not fail.

The Chair: We aim to finish this session at 3.15 pm, and I have two colleagues who want to speak, Mr McCabe and Mr Kerr. I call Mr McCabe.

Q87 Steve McCabe: I have two quick questions for Sacha. First, looking at the funnel, it looks as if you need 10 expressions of interest in order to get one smart meter installed. How does that compare with other products? That bit of information does not tell me anything, but if I knew how many people did that to buy a mobile phone or similar, I could put it in some context. Is there an answer to that?

Sacha Deshmukh: As ever, there is a health warning on an answer—there is no direct comparator between the supply and demand in different sectors—but there is actually a very healthy level of demand for the current level of supply. At the moment, I think it is fair to say that consumer enthusiasm is very strong, but supply has not yet been able to meet that enthusiasm on the timescale on which those consumers would ideally have liked that product.

That is today's funnel—or, rather, this year's funnel, as the analysis by the energy suppliers has shown. Looking at next year, you see it at more like 5.5 to one. That is a more normal ratio for a new product, but clearly the goals of this roll-out, and for this country in terms of the benefits brought by it, need us to go much farther than products that are just happy to sell in market, but only reach a small number of consumers who want it. The ambitions clearly have to be comprehensive as well.

Q88 Steve McCabe: Thank you. It is a supply issue, mostly. The other thing I wondered is this. Obviously, your job is to promote smart meters, so your performance management framework is about identifying how to motivate and enthuse people to have them, and that is what your research is about, but have you done any research, or has anyone else, on how people's enthusiasm and motivation change if they have a smart meter, and then change supplier six months later and discover that they no longer have a smart meter? My guess is that their enthusiasm might decrease. Is there any research to tell us what is really going on?

Sacha Deshmukh: The best research that I am aware of in this area is being conducted by Populus, although there is other research as well. As I said, the context is that the vast majority of smart meter consumers are very content and feel significantly better served than they were in the analogue market, but there is no doubt that for those consumers who are less satisfied, it is linked to a customer service issue. Dhara has talked about some of those issues with the legacy of dumb meters: maybe not getting accurate bills for years, and then getting them.

There has been lots of debate, and indeed some regulation has been put in place, about consumer protections in those situations. Citizens Advice also work carefully on that. Indeed, we funded training for Citizens Advice advisers, because they are a very important port of call for people who find themselves in such situations. No doubt some other areas in which there has not been satisfaction have been linked to those customer service issues.

Dhara Vyas: I just want to expand on the customer service breakdowns of what consumers experience with smart meters. We have been collecting consumer data on smart meters from customers who contact our consumer service since 2011. Since then, we have done monthly analysis of what people are contacting us about. Contacts with us have risen in proportion with the number of meters on walls, as you would expect. It is a bit of a canary in the coalmine, with them pointing out and drawing attention to issues with the Department for Business, Energy and Industrial Strategy and Ofgem—so with the Government and Ofgem—and directly with the suppliers.

We hold bilaterals and try to address issues before they become more widespread, and we talk about systemic issues with the entire industry and industry body. They mostly break down into seven categories, including billing and tariff, as you would expect, and as I have touched on. We get quite a few information and sales calls as well, with people asking, "Are they compulsory? Do I have to have one?" We have seen a spike in those recently, with deemed appointments that Ofgem has recently allowed suppliers to—

Q89 Steve McCabe: Do you think that is because people are getting calls saying, "You've got to have one"?

Dhara Vyas: Yes, and some letters from suppliers have been parsimonious with the truth, saying things like, "Your meter is at the end of its life. We are going to come and install a smart meter." There is a lack of clarity about the fact that it is not mandatory. You do have a choice. When I was looking through the stats, I saw that in one case last month, someone felt very strongly that they were being blackmailed into having one, and they did not want one. They felt like they were being bullied. That has recently become an issue, and I know that trading standards are concerned about that. The communication needs to be more refined.

Other contacts include those relating to faulty metering equipment, and people who cannot top up make up a big proportion of those. There are people who are unable to switch, who have switching-related issues or who just have an issue related to installation. For example, an engineer coming in has meant that their boiler has

been condemned because the engineer could not relight it, so there are things to do with appliances in people's homes.

The issues are wide-ranging, but they have a huge impact on people's lives and how they use energy in their home—as long as they can continue to use it. It is important to be aware of those things in order to address them and not let them proliferate.

The Chair: Three colleagues now wish to ask questions—Mr Kerr, Mr Lewis and Mr Morris—and we are aiming to finish at 3.15 pm.

Q90 Stephen Kerr: I will be brief. My question is about engagement and awareness. We are talking about this smart meter roll-out in the context of the fourth industrial revolution and about what should be a centrepiece of national infrastructure renewal in that revolution. My concern is that there is not a lot of public awareness of the total picture of smart meters in the context of the smart grid and the smart economy. I do not think that there is a lot, but what is your experience? Is enough being done to raise awareness? What more can be done?

Sacha Deshmukh: You raise a good point. I am very enthusiastic about the smart British future. Consumer experience in terms of public engagement, particularly with nationally led projects, always teaches you to be very balanced and clear about the benefits available now, what they are building towards, when they will be available and the reality of that. It is about wanting to ensure that people can continue to trust the promise. Not least, all our communications through different channels are regulated by the Advertising Standards Authority, the Committee of Advertising Practice, the broadcast codes and so on. We need to be accurate in the promise to consumers today and give accurate expectations, but I very much take on board what you say.

For a number of our areas of activity, talking about why this matters for the bigger picture will be increasingly important. A consumer spoke to me recently in a focus group. Apropos of nothing, without any information, they essentially summed up an entire sustainable, reliable energy vision that really was a 60 to 100-page BEIS document. They got it and summed it up instantly, so you are right that the consumer appetite is strong. We just need to balance that with the accuracy of the promise to the consumer in the immediate term as well.

Dhara Vyas: I agree with Sacha. The only thing I would add is that I think we have to remember that not all consumers will either want, or be able to, engage. Customers and consumers need varying levels of support to engage with the benefit of not just smart meters but, as you say, the whole wider agenda. Smart meters may be the first internet-enabled thing in the home and it is really important that all consumers are supported to interact with it as much as they want to, or might not want to. There are always going to be some consumers who don't want to and they should not be penalised for that.

Q91 Clive Lewis (Norwich South) (Lab): My question follows on from that. In terms of your own organisation, when does your contract run out for what you are doing?

Sacha Deshmukh: Our organisation exists to support the roll-out, so our lifespan will be that of the roll-out.

Q92 Clive Lewis: Okay. Obviously, there are provisions in the Bill to extend the Secretary of State's powers until 2023. Do you feel there is enough provision in the Bill beyond initial roll-out? It is very possible that many people will have this box on their wall at some point in the near future. There are 250 SMETS 2 and more SMETS 1. What is to stop those from being just boxes on a large number of people's walls that bleep at them every so often? Where is the process for people to be able to engage past 2020, 2023, to be able to get the most from these boxes? No doubt the technology will develop; at the moment it is simply that a little figure will tell you how much energy you are using at the right time, and that will be swapped between you and the energy supplier. What about when people want to engage in some complicated manoeuvring on their SMETS 2 box—where will they get the support for that? It feels to me at the moment that you get a very complex box on your wall that can do lots of magical things, but who is going to explain that to you—who is going to support you in that process?

Sacha Deshmukh: During the lifespan of the roll-out, clearly supporter behaviour changes; that is an important part of our responsibilities. I am very excited that our organisation's targets for next year have been set so that we will really be pushing in this area; there are enough consumers who now have the product for us to really help their behaviour, and it makes sense to do so. Looking forward—though you might say that I am speaking against my own interests and my own organisation—it is always important not to replicate bodies when other bodies exist that already serve consumers in different ways. It was absolutely right, given the scale and intensity of the roll-out, for there to be a body to engage around the roll-out. However, there are other organisations, such as the Energy Saving Trust, Citizens Advice and others. Liverpool John Moores University is looking into what could be done to support people with dementia using this technology. The Energy Saving Trust is looking into how the data could be used. I think that a plethora of organisations could best support consumers, alongside greater automation in the future. It may be counter to my interests not to argue intensively that it must be us; but I think that as this roll-out reaches its conclusions and you have the whole country taking that step forward, people should be looking at which organisations are most relevant to people's lives. They should support the use of this service and create new services for consumers provided by the organisations that they recognise, rather than necessarily having a different body for all time to come.

Dhara Vyas: I agree with Sacha. The SMETS 2 meter is not the key thing here; it is about what it enables and what access to information via the DCC enables. Whether it is healthcare, peer-to-peer selling or generating of energy, there will be a market around it. We are beginning to think through the regulatory impacts of that and the consumer journey as well. How messy will it be to unpick who to go to for what support and help? Will that fall under the auspices of Ofgem, or a different consumer protection body? It is a really exciting future. Potentially it could be messy—if something were to go wrong for a consumer, how would we unpick those problems? The governance and regulation of these future disruptive technologies also needs to be thought through quite carefully.

The Chair: I am afraid that is all the time we have; there are literally 8 seconds left of this session. Thank you again for giving up your valuable time to the Committee and for coming here as witnesses this afternoon. While our next witnesses are taking their places, I apologise to Mr Morris. I have you first on my list for this session, if you wish to catch my eye.

Examination of Witnesses

Dr Fitton and Dr Darby gave evidence.

3.15 pm

Q93 The Chair: We have until 3.45 pm for this session, and it is a hard cut-off, so I have no choice but to bring it to an end at that time. Will the witnesses please introduce themselves?

Dr Sarah Darby: Good afternoon. I work at the Environmental Change Institute at the University of Oxford, where at the moment I am the acting leader of the energy programme. Our work has, over the past 25 years, centred on energy demand and efficiency and, as time has gone on, it has broadened out into distributed energy generally. All demand is distributed, and increasingly a lot of supply is distributed, so we are getting more and more interested in smart grids. I should also perhaps say that I was lead on the synthesis report that was done for the Department of Energy and Climate Change on the early roll-out of smart metering.

Dr Richard Fitton: Good afternoon. I am from the University of Salford. I am a building physicist and I work in and run the Energy House test facility, which measures energy efficiency products in the home. I also lead a task group for the International Energy Agency on the use of smart meter data for determining the energy efficiency of properties.

The Chair: I will start with the Minister.

Richard Harrington: I am happy to let Mr Morris go first. I know he has been waiting for a long time.

Grahame Morris: No, that is okay.

Q94 Richard Harrington: Thank you very much for coming, Doctors, as it were. I thank you for the efforts that you have made professionally to get the programme to the stage it is at now. Although difficult, I would like to ask a broad question that will encompass both your areas. In my Government job, I view the smart meter programme as just the very beginning of a future smart grid for people. I have seen prototypes in America and elsewhere, which you will know much better than I do. What change in human behaviour patterns have you seen up to now for people who have what we could call a very prototype smart grid with smart meters? From both the building and the consumer point of view, what is the vision for the future?

Dr Sarah Darby: I am not sure we can yet say that there is a prototype smart grid. The beginnings of smart energy tend to be different in every country and smart metering in this country is different from smart metering anywhere else. In fact, more attention has been paid to the consumer engagement side of smart metering in this country than anywhere else. This is the only country where a fairly intensive effort is put into customer engagement at the time of roll-out of the smart meter, when everyone is offered an in-home display, and all the installers are trained in communication skills to explain what is going on, what can be done with the display, what the smart meter is about and how customers can use it as a tool, if they wish to. This country is a bit special in that way, and we are seeing, on average, modest positive effects.

In the US, where smart metering is widespread, the emphasis has been very much on using it to try to control peak demand, and as an instrument to introduce time-of-use pricing and whack up the prices at peak times to keep peak demand down. They have special problems there, particularly in the hotter states, with air-conditioning in the summertime and very high peak loads, which is an expensive problem for them to manage. The earliest roll-out of smart meters was mostly, in my understanding, to overcome serious problems with fraud.

Dr Richard Fitton: I agree with Sarah, the UK is very strong on smart meters. If you speak to anyone in Europe, a lot of them are envious of the technical standards of the smart meters that are being rolled out. As we have heard from all the sessions, it is a very complicated issue and it is not getting any less complicated, certainly for the consumer.

Our research group's angle is everything from the consumer side of the meter. We are looking at how to diagnose problems with buildings using the data and systems that are available. We are also developing appliances that will work with smart meters. A big piece of the puzzle that is missing from some of the discussions is the fact that the consumer should be able to engage with the smart meters. As it stands now, they cannot engage with the smart meters. We can log on to the energy supplier's portal and get a half-hourly reading. But a magic black box called the consumer access device is the gateway to the occupiers having access to their real-time data. This is not a box on the wall that tells them how much energy is costing. It is a consumer access device that streams real-time data to things such as smart appliances and smart heating systems for homes.

That is the whole aim, as far as I can see, of the smart and flexible grid that we constantly talk about. To attach one of these devices is exceptionally difficult and I have never had one successfully connected personally, nor have colleagues or associates. So a big piece of the puzzle is missing in using this data for something that is really smart, rather than just for billing. Billing is clearly important, but the use of the best-value data for the consumer appears to be the missing part of the puzzle. I think that would also push some buttons to help develop the interest in smart meters and get them into people's homes.

Q95 Dr Whitehead: We have been talking about the other end of the process—the extent to which it will be possible to use smart meter data in aggregate for all sorts of purposes in smartening the grid; developing different tariffs and different resiliencies in grids with knowledge of real-time flows and so on. What sort of penetration of the system do you think is necessary for that data to be usable? Is it a full roll-out, a partial roll-out, 60%, part of the country covered, not other parts? What would be the optimal pattern?

Dr Richard Fitton: I think it is the same with any technology. The greater the penetration geographically across different types of people and property and heating systems, and the greater the spread the better. It is a

very difficult question to answer. My thought has always been, when is the roll-out complete; when do we say it is complete? Is it at 90%, or 80%? It may be that 10% of people—I have just made that figure up—will not let you through the door. When is it complete; when do we rubber stamp it?

Dr Sarah Darby: Yes, I think there will always be a section of the population who do not stand to gain very much from having a smart meter; the demand is perhaps very low and there would not seem to them to be a great deal of point. Their impact on the system would also be very small, so I would say yes, we are probably talking in the region of 80%. You would have garnered pretty much all the benefit by then.

Q96 Dr Whitehead: Does the viability of the aggregate data degrade just marginally as the percentage point of distribution goes down? Alternatively, is there a point at which you say, "Actually, this information is useless" because the penetration is so patchy or incomplete that you cannot reliably use it for the purposes that we hope it can be used for in the future?

Dr Sarah Darby: I guess that would depend on what you wanted to use it for.

Q97 Dr Whitehead: One example would be predicting in real time what flows are going on in various parts of the grid, so you can manage the grid's capacity versus its possible strength in the future in an optimal way.

Dr Richard Fitton: I could not give an educated answer to that. I simply do not know the penetration level that would be needed, but I would say 80%.

Dr Sarah Darby: Who would account for a lot more than 80% of the actual consumption or the actual amount of electricity being fed in?

Dr Whitehead: That is what I do not know. That is why I am asking the question.

Q98 Clive Lewis: In terms of the versatility of the smart metering data that you touched on, Richard, it was quite sobering to hear you say that that has never worked for you. We can probably quite accurately talk to suppliers about the build and so on, but I am thinking of all the other things, such as the heating being attached to movement sensors so that it goes off when you leave the house and, by talking to your phone, switches back on when you are due to arrive back in 15 minutes. Google can do that already.

Obviously, the cheapest and greenest energy is the energy that we do not use, so that is fantastic on the demand side, which we do not focus on enough in this country. You are saying that that is not really working. I wonder whether this legislation is the place where this will happen. Is there anything in this legislation that you feel is sufficient to give you encouragement that that will happen in the future, or are there holes in it that mean that those data and that potential will never be realised?

Dr Richard Fitton: There is nothing in the Bill that would cover that element. There is guidance around the periphery of the Bill and the licensing Acts and things like that, but there is nothing specific.

Q99 Clive Lewis: Does it need it?

Dr Richard Fitton: The consumer needs a route to access their real time data from the home area network. That needs a procedure to be put in place because that is the keystone.

Dr Sarah Darby: I wonder whether we are a little at cross-purposes here, because I am thinking of the in-home display as the way that the customer accesses that information. But I think you are talking about stuff talking to stuff.

Dr Richard Fitton: I am talking about stuff talking to stuff. The home area network—I will not do the thing with the cups—is provided in the smart meter itself that things can attach to. The consumer access device talks to that via a Zigbee principle and says, "Here is your data." You can stream it, save it, and pass it on to other appliances.

Q100 Clive Lewis: When we talk about something that is at the heart of the demand side of the fourth industrial revolution, I guess you would expect us to be planning some years ahead to be able to make use of emerging technologies. What you seem to be saying at the moment is that this Bill does not do that. It is quite limited in its purview.

Dr Richard Fitton: Technology developers I am working with now are trying to make that work. That is how savings can be brought about. It helps things like grid smoothing and demand-load shift.

Dr Sarah Darby: I would add that it is important to consider stuff talking to people through the display. When people ask for a smart meter, or when they are getting one, the bit they are really interested in—almost always—is the display. The single most powerful reason people have for wanting or appreciating a smart meter is that they get visibility of their energy use.

The knock-on effect from that is also very important in terms of the future energy outlook. For example, no amount of smart technology will insulate your walls for you. There are still a lot of unsmart things that need to be done to our building stock in this country, for example, that the smart revolution will not actually do.

On the other hand, if smart technology can be used to communicate to people to get them thinking more about what can be done, and if it can be combined with advice and guidance so that they have clearer ideas about what options are open to them—if there is support for the metering in that way—a lot can be done to take us forward. I want to emphasise that aspect of it as well, in terms of communication.

Dr Richard Fitton: We are carrying out that type of work with the International Energy Agency—taking in this data and processing it in such a way that building physics can be incorporated with the algorithm so that we can then say, "These buildings are likely to need some type of intervention to make them cheaper, more fuel efficient and more comfortable for the occupant."

Q101 Douglas Ross (Moray) (Con): Dr Darby, in the information you provided you said that it is important to conduct the remaining smart roll-out well rather than do so at speed, and then you gave three main reasons for that. I am not sure whether you were here for the evidence session this morning, but I raised

concerns about my own constituency in Moray in the north-east of Scotland, and other more remote and rural areas, where people want smart meters but the installation is not happening particularly quickly.

One of your main concerns about rolling out quickly is that customers will feel pressured into adopting smart meters; yet I have constituents who want smart meters but cannot get them. For example, a village hall, the Houldsworth Institute in Dallas, has had people out to try to get one installed, but there is no mobile phone reception—it is in a blackspot. How do you think your evidence relates to people who want to see the roll-out far quicker, but are hampered because the technologies do not allow it or we do not have enough installations happening in the more remote and rural areas compared with the more urban areas?

Dr Sarah Darby: That would be an argument for paying special attention to such areas and thinking how that could be addressed. It does seem to me that the strength of the programme so far is that it is voluntary, and that the early learning is being done by people who are already well-disposed to it and will perhaps put up with any kind of teething glitches that go on. They will adapt and then, if they are satisfied, will pass the word on to others so that others will want a smart meter too.

If we speed up, the amount of attention paid to the installation process will almost inevitably drop off. There will be pressure on installers just to go into a building, put the kit in and get out, and not to spend time doing the things that customers have said they appreciate about the roll-out so far: having someone who will explain stuff to them and show them how to use the equipment, and having that level of support to the installation. If we lose that through speeding up the whole process, the programme will suffer greatly in the long run.

Q102 Douglas Ross: The concern I am trying to get at is that constituents such as mine will eventually get frustrated with always being at the end of the queue. If we cannot accelerate the process at all and suppliers continue to go for doing mass numbers in more urban areas, we have a real risk that the communities that would benefit the most from these smart meters will always be at the end of the queue. If it takes so long to get to them, we might actually disenfranchise so many people.

Dr Sarah Darby: Yes, they might get turned off.

Q103 Douglas Ross: So you could accept that as being a reason in some cases to accelerate, if possible, without compromising the other elements?

Dr Sarah Darby: Yes—without compromising the programme as a whole.

Q104 Steve McCabe: Do you know what happens to all the old meters? How are they disposed of when we put in these new smart meters, and what happens to the smart meters when they come to the end of their life? Has BEIS issued any guidance on how those should be recycled? I guess I am wondering whether there is a landfill somewhere full of old smart meters or old non-smart meters.

Dr Sarah Darby: You would have to ask BEIS about that.

Dr Richard Fitton: I remember seeing in the trade press that some consideration is being made of recycling existing meters, but I do not know. Again, it is an excellent sustainability—

Q105 Steve McCabe: So you do not know what will happen to the old ones, or what will happen to smart meters when they come to the end of their lives?

Dr Richard Fitton: Or indeed to some of the smart meters being installed today. I have swapped suppliers and they have taken away new smart meters, four or five months after. I do not know; sorry.

Q106 Stephen Kerr: I was interested in your comment about consumer access devices, following up on your comment that you have never had one that connected to a smart appliance or device. Is that because the SMETS 1 meter does not have adequate functionality to do so? If so, does that mean that we have an estate of some 7 million SMETS 1 meters in this country that are not future-proofed to allow us to take full advantage of the potential of a smart grid/smart economy?

Dr Richard Fitton: I believe, as the Minister has mentioned, that SMETS 1 are to be upgraded to SMETS 2 starting at some point next year. There is no particular technological challenge in connecting consumer access devices to SMETS 1 meters, but you can sympathise with some people who might be waiting for the full SMETS 2 systems to be installed. That seems commercially obvious to me.

Q107 Stephen Kerr: Are you seeing evidence to suggest that the SMETS 2 meters will be easier?

Dr Richard Fitton: We have been told.

Q108 Stephen Kerr: Then that will be the case.

Dr Richard Fitton: Absolutely.

Q109 Stephen Kerr: To this point, is there any evidence that smart meters change consumer behaviour across the board, other than people looking at the visual display?

Dr Sarah Darby: There is evidence that people are making alterations in their everyday behaviour and that over time, from how the figures are going, they are thinking more about investing in energy efficiency. I say that because the evidence is that the energy-saving effect, compared with people who do not have smart meters, rises gently over time. You would think that people might be very keen at first to go around switching off all the lights and so on, but would then get a bit bored with it, and the effect would fall off, but that does not seem to happen. If you look at the large numbers of people we have data for over a long period of time—a few years—you see a gradual learning effect.

It is quite a small effect in aggregate. After the first year of roll-out, I think it was 1.5% or 2% for gas and electricity. The last I heard, which was May 2016, British Gas was talking 3% to 4% after a few years, on the basis of several hundred thousand customers. So there is a gradual learning effect. That is, of course, an average, and it will vary a lot between people. For some people, you may get quite a substantial effect; for some people, none at all.

Q110 Dr Whitehead: Briefly, on that particular issue, one thing that smart meters may well do—we have heard that they do—is enable you to use energy more effectively. To paraphrase Dr Fitton, although a smart meter might tell you very smartly, "This is exactly how the energy you are using goes out through the roof and windows of your house and through your walls," and that may well be useful information, it does not actually make your home any more efficient. Is there any evidence that smart meters can lead people to go that step further, or do we still need smarter meters that tell you, "Actually, your house is really inefficient; what you ought to do is make your house more efficient, and then your smart meter will work even better"?

Dr Sarah Darby: If you really want to see how heat is leaking from your home, you want thermography. When people are shown thermal imaging of their homes, it can have quite a dramatic effect, because you can absolutely see where it is leaking out. That is the most powerful way of doing it. A smart meter can just tell you, "This is what you are using now; this is what you used last week." You remember, "Oh, yes. Last week we had the whole football team round having hot showers," or something like that. You can link cause and effect to some extent. This is what you used, compared with several months ago. You can see seasonal effects and so on. You can work things out.

Ideally, you need to be able to put all that together with other sources of information. Another thing we find is that when people get their feedback from different sources, that has more effect than if they are getting it from just one. Ideally, you would see the smart meter information as part of a rich mix that people get gradually more familiar with and that they talk about with other people; they can find out what to do with that information and try to find ways of using it.

Q111 Giles Watling (Clacton) (Con): One concern you mentioned, Dr Darby, was too much of a rush to roll out the smart meters, because installation might be compromised. Secondly, and interestingly, you said that you feel people might be pressured into adopting smart meters and, therefore, not engage in the process; I think I have read that right. Do you have any evidence that that might be being addressed—that people are beginning to understand the benefits and the process involved?

Dr Sarah Darby: I have not heard of any serious push-back on this. I have heard one or two accounts anecdotally that people are feeling under a bit of pressure from their supplier that they really ought to be getting a smart meter now. One woman said to me she was holding out for as long as she could. She was not particularly against a smart meter but she was curious to see how long the supplier was going to keep pushing her.

Q112 Giles Watling: There seems to be some confusion out there, inasmuch as people are getting SMETS 1 and then they want SMETS 2, and they are not sure whether one will do the other. Are we getting that information out there to the people, who are the customers after all? Are we being effective enough?

Dr Sarah Darby: The picture is rather mixed. This is, after all, mostly in the hands of the energy retailers and they have different ways of going about it.

Q113 Giles Watling: So that is something we need to address, in your view.

Dr Sarah Darby: Yes, I would think so.

The Chair: Time is against us, so Mr Grant's will have to be the last question.

Q114 Bill Grant (Ayr, Carrick and Cumnock) (Con): I will take a quick virtual imaginary journey to November 2022 when we have maxed out on the installation of smart meters, everybody is happy and they are working. Notwithstanding the consumer benefits, what would be the benefits to the wider environmental community? What would be the environmental benefits in relation to carbon reduction from the installation of a full roll-out of these meters? Or is there no benefit whatever to the environment?

Dr Sarah Darby: Potentially, this is part of a very big transformation of our energy system. If we are relying heavily on renewable supply, particularly for electricity, we have to be able to match demand with supply in real time very effectively. The smart meters are part of making that possible. That means effectively that they are part of the transition to a renewables-based energy system with very carefully managed demand and supply together. The environmental benefits of that would be very considerable.

Q115 Bill Grant: So there will be a considerable environmental effect.

Dr Sarah Darby: Yes.

Q116 Bill Grant: We are all fond of our environment and the planet, and we need to keep them for generations to come, so that is a stepping stone on a very positive journey.

Dr Sarah Darby: Yes, I would think so.

Dr Richard Fitton: I would add one point. The smart meter is a tool as well and from that tool we can hang things. With it comes this whole idea of being able to attach more efficient things for your home, such as appliances and heating systems. Once it gets in the house, people can then start to do smart things with it. You have got to consider those savings as well as the generic smart meter savings.

The Chair: Mr Western: 20 seconds.

Q117 Matt Western: The confluence of "prosumer"—producer and consumer: do you think the Bill addresses that, or is there an opportunity to have gone a bit further with it, to change behaviour?

Dr Sarah Darby: The specification is already there to allow for prosumption, for people who are generating—

The Chair: Order. I am afraid I have no choice. That brings us to the end of the time allotted for the Committee to ask questions. I am sorry to cut you off in your prime. Perhaps, as the question has been brought in, you will see each other after the Committee. I thank you both for being our witnesses this afternoon and, on behalf of the Committee, for giving us the benefit of your wisdom. Line-by-line consideration of the Bill will begin at 11.30 am on Thursday in Committee Room 12.

3.45 pm

The Chair adjourned the Committee without Question put (Standing Order No. 88).

Adjourned till Thursday 23 November at half-past Eleven o'clock.

Written evidence reported to the House

SMB 01 Anonymous
SMB 02 Mr J R Harwood
SMB 03 Smart Energy GB
SMB 04 Energy Networks Association
SMB 05 Energy UK