



Environmental Audit Committee

Oral evidence: Enabling sustainable electrification of the UK economy, HC 278

Wednesday 17 January 2024

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Members present: Philip Dunne (Chair); Barry Gardiner; James Gray; Ian Levy; Clive Lewis; Caroline Lucas; Anna McMorrin; Dr Matthew Offord; Cat Smith; Claudia Webbe.

Questions 139 - 205

Witnesses

I: Rachel Fletcher, Director for Regulations and Economics, Octopus Energy; Tom Glover, UK Country Chair, RWE; Craig Dolan, Chair, Heat Pump Association.

II: Councillor Bridget Smith, Vice Chair at District Councils Network and Leader at South Cambridgeshire District Council; Barbara Hammond MBE, CEO and Executive Director, Low Carbon Hub IPS Ltd; Dan Stone, Senior Planner, Centre for Sustainable Energy; Dr Rebecca Windemer, Planning and Communities Lead, Regen.

Written evidence from witnesses:

[Octopus Energy](#)

[RWE](#)

[Regen](#)



Examination of witnesses

Witnesses: Rachel Fletcher, Tom Glover and Craig Dolan.

Q139 **Chair:** Good afternoon and welcome to the Environmental Audit Committee for our oral evidence session today in our inquiry into grid capacity and electrification of the UK. We have two panels today and our first panel is covering flexible energy generation, looking at new technologies in the delivery of electricity to consumers. Our second panel is looking at the planning implications.

I am very pleased to welcome to our first panel Rachel Fletcher from Octopus, Craig Dolan, who is chair of the Heat Pump Association, and Tom Glover, who is the UK chair of RWE. I am not going to ask you to introduce your roles because I think that is fairly self-explanatory.

If I may begin with you, Rachel, Octopus is a more recent entrant into the energy market, deploying innovative technologies perhaps more so than some of the incumbent suppliers. Given that the focus of this inquiry is on grid capacity and the ability of the grid to get the electricity from the point of generation to the point of use, could you outline the main barriers to development and achieving the Government's goal of electrification of the economy as you see it as an experienced regulator in this field?

Rachel Fletcher: Thank you for the invitation to come along this afternoon.

First of all, we remain very optimistic about achieving the Government's targets of reaching a net zero electricity system by 2030. The technology is largely there. We know how to get there. We just need to focus and put a bit more effort into moving at pace to make the changes that are needed to achieve net zero, not just in time but at minimum cost possible to the country and to the customers in the country.

I am not sure of the extent to which it is a focus of this afternoon's discussion, but clearly the grid queue for renewable generation has been very well publicised. The fact that we are seeing investors having to wait sometimes over 10 to 15 years to get a connection offer clearly has to be right at the top of our minds as we focus our efforts on the energy transition. We were pleased to see last year that Government and the regulator and the system operator did start to put their minds to this. What we are hoping we will see this year is talk translate into action with real projects getting much shorter grid connection offers and us all feeling much more confident that the renewable energy we need will be connected to the grid. That has to be the focus.

The other point, and perhaps the main point where I feel we can add value to this Committee, is talking about customers. When we think about the transition to net zero, we put, rightly and understandably, a huge amount of attention on to the production side of things, on to big assets. How do we get the grid built? How do we get renewables? How do



we get the investment for renewables? Where the huge opportunities lie is in using the flexibility that will come as we decarbonise electricity and heat. We will be adding massively to overall system peak, which drives costs, but we could avoid that completely if we as a matter of course encouraged customers to use those new assets flexibly. There is a huge amount of research out there now about the opportunity to be taking billions a year off the cost of our electricity system. Cornwall Insight estimates that by 2040 if electric vehicle load and electric heating in homes is used smartly and flexibly, then we could be saving £14 billion a year as a country and taking just under £400 off the average customer's bills.

Alongside a focus on grid connections, we would love to see much more focus on how we make sure that, as we electrify heat and transport, we are using everything we possibly can to get that load to be used flexibly and to be capturing these cost savings. This is work we are doing as a company, which you very kindly recognised in your introductory comments, but we need to see more of it. We need the policy enablers to make that happen at scale.

Chair: That report that you referred to, perhaps you could provide it to the Clerks.

Rachel Fletcher: I would love to, yes.

Q140 **Chair:** That would be helpful. Does that break down the saving as between different ways of drawing in electricity, so using the 24-hour period more intelligently to draw down electricity, versus storing electricity per se?

Rachel Fletcher: Roughly, for every gigawatt of peak demand that you can reduce by encouraging customers to charge their electric vehicles, for example, during the night rather than straight after they get home from work when everybody else is using the electricity system, we are saving about a billion pounds in capital investment. About two thirds of that billion comes from needing less peaking generators—typically, gas generators serve our peak demand—and about a third is coming from less network capacity. If we need less network capacity and we are making better use of it, it also helps with our grid connection queue problems.

Q141 **Chair:** That is a good segue then for me to ask Tom a similar question. In relation to the generating capacity that you are responsible for, could you highlight to the Committee the main barriers that you are encountering in getting that connected and distributed?

Tom Glover: Yes. Thank you for the opportunity to say something today. I have to say that, like Rachel, the number one is grid. The RWE projects that we are developing are on average a two to five-year delay for grid. I think that has been discussed at length with MPs. It was good to see the number of initiatives that came up last year with the Government action



on that. Like Rachel, I would say we now need to turn that into delivery. I have not had one connection yet get any faster; in fact, a few more delayed. We are hopeful that all those initiatives will come to something, but the proof is in the pudding as to when we see those dates come forward. That is the number one issue we have.

In terms of the other issues that are on the table, it is planning and consenting. The planning and consenting takes much longer than a lot of the statutory timelines. We have examples where a solar farm might have a 90-day statutory consultation. We are looking at two years, way past the statutory consultation, in order to get the planning permissions for those assets. Things like offshore wind farms—

Q142 **Chair:** What accounts for that?

Tom Glover: It is basically resourcing in local authorities. There is a dire shortage of planning and consenting experts in both the private and public sectors and the resources being put into the councils in order to staff all the projects that are going in. We have hundreds of projects going in across the UK and most planning authorities have been decreasing planning levels. Although there is a 90-day or 91-day statutory timeline, there is no penalty if they are not met, basically. You are just caught in the queue. Planning and digital reviews of those planning decisions are quite a factor. I think that those are probably the two main things.

Q143 **Chair:** Craig, if we move closer to the consumer, your trade association is responsible for heat pump installation. Heat pumps require, I think I am right in saying, three-phase electricity to the premises or close to the premises. Is that wrong? You are shaking your head.

Craig Dolan: It is wrong, yes. Thank you to the Committee for inviting us along. Both single phase and three-phase heat pumps are available in the market. Single phase has been developed specifically for residential properties, and once you get over 32 amps or 35 amps, then you start moving into the three-phase requirements. The majority of domestic homes would require a single-phase heat pump, around 16 amps—maybe a little bit bigger depending on the property type. Single phase is more than capable for the majority of UK homes.

Q144 **Chair:** Is there a lack of access to sufficient electrical capacity impacting on the roll-out of heat pump take-up across the country?

Craig Dolan: It is a good question. When you want to install a heat pump, there are a number of things that you have to go through to make it happen. One of them is that you have to register the heat pump or you have to notify that you are going to install the heat pump on the grid. If you take a gas boiler, for example, you do not need to do that. You notify afterwards. You are supposed to notify the grid that you are fitting a heat pump and that is an application process. Then the local grid operator, the DNO, will say if the grid in the area is suitable for you to fit a heat pump or not. Because you have to make that application, the majority—



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Q145 **Chair:** How long does it take for them to respond?

Craig Dolan: Well, the honest answer is that it depends. There is no service level agreement between the DNOs and applications being made. Some are turned around quickly; some take a little bit longer. It is a frustration from an installer point of view that you have somebody who wants to buy a product and you want to install that product and there is a bit of a murky hole—

Q146 **Chair:** Are you talking days, weeks or months?

Craig Dolan: Weeks, generally. The ENA is doing a lot of work to automate the process as much as possible, which we are supporting it on, to try to make that application smoother and faster.

Q147 **Chair:** Is it a digital or a paper-based system?

Craig Dolan: It is paper-based at the moment. It is moving to digital. It is in the trial phase at the moment, which we are supporting it with.

Chair: Thank you. I will move on to Ian Levy.

Q148 **Ian Levy:** I would like to talk a little bit this afternoon about incentives. What role will flexibility play in the future of the grid and what benefits will it provide? Will this require the Government to provide additional incentives to networkers, or are there already enough incentives out there in the market?

Rachel Fletcher: Flexibility is something that the electricity system needs. At the moment it is baked into our fossil fuel generation system. Gas-fired power stations in particular are very flexible. It is not possible to safely operate an electricity system without flexibility that allows for supply and demand and the appropriate voltage and frequency levels to keep the system safe and healthy.

As we decarbonise, we are not going to have that flexibility in our generation. Per my opening comments, we have a huge opportunity. As well as, of course, big grid-scale batteries, which provide flexibility, we have a huge opportunity to use the flexibility inherent in electrical heating and electrical vehicle load to balance the system. There is a win-win-win here: lower costs for the system, lower costs for the customer, and better use, by the way, of the renewable energy that we produce, which we might otherwise have to waste or turn off if there isn't battery capacity or EV capacity to use it.

The electricity network companies, the distribution companies, for example, have been given a very strong steer from the regulator, Ofgem, that they are expected to be procuring flexibility in order to keep their distribution networks in balance. We have over the last few years seen an increasing use and open-mindedness in the distribution networks towards using this low carbon flexibility rather than just building ever bigger distribution systems that, of course, add to customer bills.



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However, we still have some huge blind spots in the system, if I might say. For example, with the balancing mechanism, which the electricity system operator uses to keep the high voltage system in balance, you cannot sell aggregated electric vehicle load into the balancing mechanism. Today in Octopus Energy we actively manage nearly 800 MW of electric vehicle load, which could help to keep the system in balance. It would do it cheaply. It does it without any carbon. Yet there is a whole slew of technical barriers that prevent us from selling that into the balancing mechanism for the benefit of the system as a whole.

We still need a culture change, a mindset change, and I believe we need, if you like, more pointed regulatory instructions and directives on those who are charged with operating our system efficiently, safely and in as low carbon a way as possible.

Ian Levy: Tom, did you want to come in?

Tom Glover: We operate the larger assets on the system and when we look at the future market we already assume that all the demand side will be flexible and very smart companies like Octopus will make sure that that is sorted. That provides a lot of day-to-day, within day-type flexibility, so you can move your solar during the day with your battery to your heat pump in the evening and so on. What we also need on the system is some longer-term balancing. When we get an extended period of no wind or no solar, we either need long-duration storage or we might need some abating gas technology to come on.

The other thing we need is what I call balancing for resilience. We do still have quite a varied weather pattern in the UK, so we need to make sure that we are managing the system for the one in 20 years as well. These are power station units that will maybe only be used or needed once every 20 years, which makes it quite difficult as an investor to know that you will get a return. You do need to have central systems that are looking at the resilience of the power system, not just the day to day. The market can more or less deal with the day to day, and hopefully we can get a functioning market with the right price signals that allow all sources of flexibility to do that. We do need things like the capacity mechanism that we have in the UK to make sure we have more than enough capacity for the day to day so that we can go through those peak systems.

On technologies, I think the market needs to decide. What we need to do is to enable the market to look at all technologies. We need the flexible demand. We need the batteries. We need the long-duration storage. We need, in our view, some abated gas. Even in the Committee on Climate Change's report, it has a certain amount of unabated gas in a net zero world offset by negative emissions elsewhere in the economy. We need a market that allows us to invest and allows those technologies to compete against each other economically. That ultimately will result in a system



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with a multiple of technologies that will increase our resilience but also the lowest cost for the consumer.

Ian Levy: Craig, did you want to come in?

Craig Dolan: From a heat pump point of view, I took part in an event yesterday where I shut my heat pump down between 5 pm and 7 pm. I am probably a bit more of a prosumer than a consumer, but as part of that trial it was pretty cold and I turned my heating up by 1° two hours before the event, turned my heating down by 2° during the event, and then at the end of the event my heating came back on just as normal. It is only going to take a number of houses to do that—and you can automate that through APIs for timed events—and you have a vast amount of storage or capacity available. APIs are application interfaces. For example, Octopus could send a pricing signal to my app-controlled heat pump and then it would adjust.

Q149 **Ian Levy:** It is done automatically?

Craig Dolan: Yes, automatically without me interfering. To get to the mass market, that is what we have to do. You do not want to interact with your heating—

Ian Levy: I was wondering how you would do that if you were at work. It is good if you are in the house and you can do it, but—

Craig Dolan: Yes. I was in the office, so I used my app control to turn it down at that point.

Rachel Fletcher: The technology exists to automate this, with the customer setting what comfort levels they would like in their home. We are already helping hundreds of heat pump customers to automate their heat pump, keep their home at the temperature they want and to take advantage of the cheapest and greenest electricity when it is on the system. These genuinely are win-win-win opportunities. We may very well need CCUS to keep the system in balance into the future, but all the cost evidence suggests that we should be going after this consumer flexibility that is going to be inherent in our homes and cars and making use of that and battery storage as much as we can and using the most expensive forms of flexibility only where necessary and where we have stretched and reached the limit of these other technologies.

Q150 **Chair:** Can I just pick you up on that? I can see that that applies for homeowners that have electric vehicles or heat pump systems because they will have battery storage, but for those who do not and for the industrial users where that is unlikely to apply at scale, we will still need the rest of the system. What proportion of supply do you think will be covered by the people who have the capacity to store in, say, 2050?

Rachel Fletcher: The analysis suggests that about 25% of peak demand we could be getting rid of completely through flexible management of electric vehicles and electric heating.



Chair: Once we have a fully rolled out and mature system?

Rachel Fletcher: Yes, when we get to 2050. Even if you do not have an electric vehicle or electric heating, you can provide flexibility to the system and that helps us to decarbonise quickly and more cheaply. At the moment we have 25,000 customers who get free electricity from time to time because they live in postcodes where the local distribution network operator has too much wind on their system and it causes problems to the system. When that happens, we tell those customers, "If you are at home, now is the time to get your oven on or do the tumble drying." You get free electricity. All you need to participate in that is a smart meter. That is not automated. You would have to be at home. You would have to be at home with small children or a retired person or whatever to take advantage of that. Customers who are doing that are helping the distribution network operator to save costs and they are slashing their daily electricity prices by about half simply by taking advantage of free electricity for an hour or two.

Q151 **Caroline Lucas:** Could you give a quick example? When you said that there was 800 MW of car load that cannot be fed on to the grid, can you give a couple of examples of what is stopping it? What regulation would be needed to change—

Rachel Fletcher: The balancing mechanism was designed in the days when we had a fossil fuel-dominated system. All the rules about selling electricity to the system operator to balance the system were designed for large gas-fired power stations, including the metering requirements. Right now, the rules would require every single electric vehicle owner in our pool of 700 MW to have a meter at the size and specifications that sits on one of Tom's gas-fired power stations. That clearly is crazy and it is not necessary either.

Caroline Lucas: It would be very easy to change this stuff, I suppose, is what I am getting at.

Rachel Fletcher: Yes. It is primarily a mindset change, getting out of fossil fuel thinking into—and Craig used the word—prosumer, which is not always a loved word. I go back to my opening points. We have spent so much time thinking about big assets, production and big networks. We need to start thinking about the customers at the end of the system who, as they electrify heat and transport, increasingly become a valuable and important part of that system, and make sure that we are using that properly.

Q152 **Dr Matthew Offord:** This Committee has heard that like many businesses, your own industry faces issues around supply chains and skill shortages. How much do they affect your business?

Rachel Fletcher: As well as innovating in the technology we have just been talking about, we employ thousands of tech experts. That is a crowded market but one where if you are a tech person, an IT person,



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being part of solving the decarbonisation challenge in the energy system has to be one of the most exciting jobs. We do not find it difficult to attract talent globally for that.

We are also a heat pump manufacturer and installer, and we are very actively training hundreds of engineers to install and maintain heat pumps. We doubled the number of engineers that we have last year, reaching 1,400 this year. We will probably end the year with about 4,500 engineers we have trained and employed. There is a huge opportunity to tap into those who are trained up in gas engineering skills, who perhaps see the end of the career prospects in gas.

The Government are helping. They have established apprenticeship schemes for training in heat pumps, but we need to see more being done to assist companies to get those training facilities up and running and those new qualifications being put into action. We already have a training centre, but we will have two more by the end of the year.

Q153 Dr Matthew Offord: When you say get them up and running, where is the bottleneck? You seemed to imply that the Government are playing their role.

Rachel Fletcher: These are new qualifications that take a while to filter through and to be put into practice in terms of the training that is on offer for people. I do not think it is enough sometimes just to put new qualifications into the market. We also need the Government to be nursing through the delivery of some of these training schemes.

Tom Glover: I will talk a bit about the supply chain that we see in our major components and then I will go on to skills.

What we found post Covid and in the current global environment is that almost every single economy in the world is doubling or tripling down on renewables, so the supply chain is extremely squeezed. We have seen for a variety of that supply chain constraint, plus inflation, our costs across almost all renewable technologies going up between 20% and 40%, just to give you an idea of the scale of the problem.

What are we seeing if we want to order some critical part? If I want to order a HVDC substation, which is one of our big offshore substations, we are now probably looking five to seven years before delivery. When we are talking about trying to deliver 50 GW or 55 GW of offshore by 2030, if we do not order those in the next year or two then we already miss that target. We also have vessels that are the same. A lot of the vessel yards are completely full. What that also turns into is a lack of choice. For a lot of the things like HVDC, turbines and blades, we are just being told, "That is the specification. If you want to buy it, you buy our specification at our price." That is a big constraint that we are seeing.

On the skills side, it is all those specialist skills. I talked before about planning skills, but specialist engineers, electrical engineers, digital



people and project managers are all in short supply. These are things that you cannot fix so quickly. For example, yesterday I was up in Grimsby looking at the CATCH academy there. They have almost 40 trainees doing welding and training as electricians. The problem is that they are struggling to find the people to train them. The person who is training them is 67. You cannot just create new roles. You need to have a pipeline of job opportunities but also the trainers to train these new people.

Craig Dolan: Building on what Rachel was saying, from the heat pump installer point of view, HPA members have the capacity to train 40,000 installers per year. Those installers are predominantly coming from the gas and oil industry and moving across, but we have to ask them to take unpaid leave from their job. Incentivising them or helping them to lessen the hit, particularly at the moment with the cost of living crisis—they cannot afford to take a week or three days off from working. That training journey is becoming a little bit more extended than most of our members would like because that installer is having to spread when they can do their learning and when they can complete their qualification. Any support to help people to come off the road and into the classroom would be very welcome.

HPA members are investing heavily in training facilities and in training the trainers to get the skill level up. There are 130,000 Gas Safe registered engineers. How many of them are heating engineers is a bit fuzzy because you can look after gas but not be a heating engineer. It depends on the amount of time it takes to take that gas or oil engineer, upskill them and remind them of the skills that they did on their apprenticeship, as well as bringing through the younger guys and girls on the apprenticeship programme.

Q154 **Dr Matthew Offord:** Thank you. Those are very comprehensive contributions from all three of you.

One area that I imagine causes the industry problems would be future price rises, particularly in rare materials and commodities, as it is a problem across the world. How does this affect your businesses going forward, particularly fluctuations in the costs of such resources?

Tom Glover: I think I mentioned in my reply already a 20% to 40% increase over the last couple of years. Some of that is general inflation, some of that is commodities, particularly steel, and some of it is caused by general supply chain constraints. It has a material effect on our ability to deliver.

A lot of those are shared commodities, which why we see it right across the cost of renewables, not just in one particular technology. Some are slightly more affected than others but that 20% to 40% is not a bad estimate across all our technologies, and also non-renewable technologies. It is not that renewable technologies are getting more expensive versus non-renewable; all technologies are getting expensive.



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The business case to keep on doing renewables remains the same versus other technologies but everything is getting more expensive and it makes investments more difficult. You saw in the last offshore auction round, the AR5 auction, that no offshore wind farms decided to bid, and that is literally because nobody could make those financial metrics work for an investment decision.

Q155 Dr Matthew Offord: How resilient would you say your supply chains are?

Tom Glover: I would say supply chains are very fragile. We try to do everything we can as a company and, I am sure, as an industry to try to widen that out, but we do have a few areas, like nacelles, monopiles or cables, which are in the hands of a few companies or a few regions of the world. It is fragile.

There is not a lot we can do about making them more resilient unless there was direct Government intervention to onshore some stuff. The problem is that that comes with a cost and then that ends up being costly for the consumer. It has to be a political decision about the importance of that resilience versus the extra cost to the customers. It is very difficult for a business to do that because as a business we are incentivised to make things as efficient as possible.

Dr Matthew Offord: Brilliant. I think that covers that.

Rachel Fletcher: Could I add something, just in contrast to that?

Dr Matthew Offord: Of course.

Rachel Fletcher: Heat pumps, for example, are in a very different part of the technology curve to wind. We have seen massive reductions in the cost of wind over the last couple of decades and we are going through something similar with heat pumps. Yes, there may be some supply chain frictions affecting all technologies, but it is back to my point that there is a lot of cause for hope. We have been conducting a lot of R&D in heat pump technology, updating it. We can now produce a heat pump and install it in a typical customer's home after Government grant for £500 or for nothing, depending on how much additional work is needed in the customer's home, and those costs will come down further across the industry as we scale up. I just want to go back to the point about there being lots of cause for optimism, as well as inevitable challenges that we all have to face.

Dr Matthew Offord: Thank you.

Q156 Chair: I want to pick that point up a little. We as a Committee went to your training facility near Slough a year and a bit ago, and the chief executive was there and made that claim about the cost of heat pumps coming down. You have just said that because of the £7,500 pound Government rebate you can now supply them for £0, effectively, assuming no other work. Have you done that?



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Rachel Fletcher: Yes. We now have a number of customers waiting to get heat pumps where they are quoted £0, or between £0 and £500, which, compared to the cost of replacing your gas boiler, is a bargain.

Q157 **Chair:** The evidence that I have had locally in my constituency—and I appreciate that may not include many of your facilities, but it would include some of your members, Tom—is that the price has been going up in the last three years, not down, partly because material costs have gone up and wage costs have gone up. When we did our inquiry into energy efficiency in homes the minimum price for a heat pump was about £9,000 and last year in my constituency it was about £12,000. I am intrigued that you are achieving a figure materially below that.

Rachel Fletcher: We have just launched our own heat pump. We spent years re-engineering heat pumps to take as much cost out of them as possible and to get the cost down. The figures I have just quoted you, between £0 and £500, are for the installed cost after the Boiler Upgrade Scheme grant, using our own heat pump technology. If we are doing it with standard heat pump technology that is in the market, our average install quote is about £3,000. Obviously, the cost will depend on the size of your home—we have been focusing on your typical three-bedroom house—but the point is that we need scale in this market and, of course, scale drives economies.

Q158 **Chair:** Although scale has applied—perhaps we should bring in Craig here. I am going to come back to you in a second, Caroline—heat pumps are mostly coming from major international manufacturers, I think. Are they mostly coming from Korea or Japan, who are producing in the hundreds of thousands, if not millions of units? I am not sure that scale makes so much—

Craig Dolan: We are manufacturing in the UK as well. There are members manufacturing volume in the UK. There are a lot of plants manufacturing heat pumps in Europe and they are coming into the UK as well.

The cost of heat pumps is impacted by the cost of commodities. There is quite a lot of steel and things like that. There are cost-optimised programmes going down. If you look at cost per kilowatt or if you try to look at a certain cost per weight ratio, for example, heat pumps are coming down in cost.

Installation costs are a struggle at the moment. As we have mentioned on the skill shortages, we do not have as many heat pump installers or high-quality heat pump installers as we do high-quality traditional fossil fuel boiler installers. There is a local competition issue that could be holding up prices.

It depends on the level of work that is required in the home as well. In the heating industry, when we moved away from non-condensing boilers to condensing boilers, we should have taken a system approach rather



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than a heat engine approach. In order for condensing boilers to condense they need to run at a lower operating temperature than non-condensing boilers, which means the pipework and the radiators should have been sized to run at lower temperatures. In most instances, that did not happen, and so you have a high-temperature heating system running on a medium-temperature heat engine.

Now we are moving across to heat pumps and we have to take a system approach. We have to do some of the radiators—or we at least have to look at them, because we have not even looked at them to do the house assessment—to make sure that the heat pump is operating efficiently, there are low running costs, we are using our energy efficiently and people are warm and comfortable. We are having to do two steps that we did not do previously when we are moving across to heat pumps. That adds cost.

Chair: I am sorry, we are going down a bit of a rabbit hole here, but it is of interest to the Committee. Could I ask both of you, if you have some evidence of heat pump pricing across either your trade association or company, if you could submit that to us? I would find it very interesting to compare how prices are progressing in recent years.

Q159 **Caroline Lucas:** Yes, it is quite an interesting rabbit hole that we are down. The bit I am struggling with is that from what I have discovered, certainly if you are talking about Victorian housing stock, for example, of which we have loads, the amount of money you are going to have to spend on double glazing and possibly throwing out your radiators and starting again with different sorts of radiators is massive. I do not know what your demographic is for your customers, it is fine to look at the lowering cost of the actual heat pump but when you need all of these other things alongside to make it work properly, it can seem—

Rachel Fletcher: Maybe I will just start on that. Part of the solution is high-temperature heat pumps. One of the reasons so many homes need a lot of insulation or are not at all suitable for a heat pump currently is because, as Craig has been mentioning, a lot of heat pumps operate at much lower temperatures than gas boilers. The heat pumps that we are now producing are high-temperature. They deliver hot water out of the system at the same temperature as your gas boiler will. That might not work for every single Victorian home, but it certainly opens up the suitability of heat pumps to a much wider set of properties.

Craig Dolan: To support that, heat pumps are getting much better efficiencies at higher flow temperatures. However, we do need to take a system approach. We do not want to oversize heat pumps because then they run less efficiently at normal winter temperatures, which are around 2°. We need to be mindful. Having your heating system changed over and upgraded can be disruptive, but it is a short-term disruption for a longer-term gain. We are not saying that you have to do all of it all at once.



Q160 **Clive Lewis:** Retrofitting is important, is what you are saying, for the rest of the house? Double glazing? Insulation?

Craig Dolan: It is important, but it is not the be-all and end-all. If I take a working example of my house, it is a 1930s semi-detached. The cavity wall was done before I bought it, the loft insulation was done before I bought it, and I upgraded the windows nine years ago. I replaced one radiator in the lounge because the previous installer forgot his spirit level when he fitted that one. I replaced it with a slightly larger one because that room was a bit cooler. That is all I have done, and I have a heat pump. Okay, we lost the airing cupboard because I put a cylinder back in.

Q161 **Caroline Lucas:** I am sorry, are they mostly air source we are talking about?

Craig Dolan: Mostly air source. Air source is the predominant technology. Ground source is very efficient and can be used on low-temperature heat networks where you amplify and use the heat where you need to, rather than having high-temperature heat flowing around everywhere.

Chair: Thank you. Can we move away from the—

Q162 **Clive Lewis:** This is relevant because it is about finance and costs. I wanted to pick up on something that you said earlier, Tom, and just challenge it, which was that the supply chain networks for the component parts of many of the technologies that are required for decarbonisation are fragile, and if you want to make that supply more stable, you need to onshore.

Now, we know in the US the Inflation Reduction Act is all about onshoring manufacturing capacity to ensure that the US can make that green jump, as well as many other things. You said that it was a toss-up between fragile supply chains or onshoring and loading more costs onto the consumer. That is not the only option, though, is it? Clearly in the US they are not necessarily loading that cost onto the consumer through their bills. It is being done by state-level government investing hundreds of billions in their own infrastructure. Now, they have, I imagine, a relatively progressive tax system in the US. It is not perfect, but it is more progressive than individual consumer bills. That is also an option, is it not?

Tom Glover: Yes. I should be clear: it is an extra cost, but it can obviously be recovered from a consumer or a taxpayer.

Q163 **Clive Lewis:** Yes. From consumers is more regressive and tax systems can be progressive.

Tom Glover: It is always an option. It is a political option, is it not?

Q164 **Clive Lewis:** Yes. Thank you.

One of the things when it comes to financing new technologies is that it can be quite costly, but we need to do it. I am just wondering what



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support you are getting from Government to pursue these new technologies as you are doing at Octopus, for example, and as you are all doing. According to the House of Lords Library, Britain currently supports the fossil fuel industry through tax breaks and subsidies for exploration and research and development to the tune of £10 billion a year. Are you getting anything like that from Government in terms of development and bringing down the costs of your technologies?

Rachel Fletcher: I can start. We have not had any money from Government for what we are doing. What we do really welcome, though, is the Boiler Upgrade Scheme for heat pumps because that is, of course, getting early adopters of heat pumps and helping our business and other heat pump businesses get to scale, which is how we will build a profitable business.

However, the contrast is stark. You mentioned fossil fuel. I would also say that Government is committing £20 billion to carbon capture and storage and yet we are not seeing political commitment behind capturing consumer flexibility in order to keep our system in balance, which, as I have said earlier, is a very valuable resource. It will not happen by osmosis because to help customers optimise when their EV is charged we have to develop technology and customer-facing products, we will trial and error products onto the market, and we will lose money from that.

Our ask is not for money or grants. Our ask is for a better policy environment that properly allows us to get a market for that flexibility. I have talked about the frustrations with the balancing market, but we also struggle to get properly rewarded for that flexibility because we have a single wholesale price for the country as a whole, which does not reflect the value of that flexibility across the geography of Great Britain. Our ask is not for subsidies or handouts to us directly. Subsidies for customers to decarbonise, yes. Our ask is for a much more enabling policy environment and market structure.

Q165 **Clive Lewis:** Craig, Octopus do not want any of that kind of subsidy. Would you like some yourself, a bit of that £10 billion? Would it be helpful?

Craig Dolan: Anything to get research and development and localise the supply chain would definitely be helpful and welcomed by our members. Localising the supply chain with heat pumps and supporting the installers with training and upskilling would be definitely beneficial.

The BUS scheme has been very, very welcome. Extending that out to 2028 really helped with reassuring members and installers about upping the investment in heat pumps. The BUS scheme has been a little bit slow taking off, but we are getting there. It would be good if we could see an increase in the 2024-25 budget with the BUS. It currently supports 20,000 installs. If we could get that a bit higher to support the installers and to generate that pull-through for consumers, that would be excellent.



Tom Glover: From our perspective, I do not want to compare us to oil and gas because they get theirs via tax and we get it via different mechanisms, but we have had, over the years, very good Government support. When offshore wind was evolving, the CfD started at a very high price, which allowed us to create the supply chain to drive down the costs. We are seeing that in the hydrogen roll-out at the moment. We are seeing that in carbon capture. It does help when you are doing those first-of-a-kind technologies, which are expensive before you drive down the supply chain, to get the first-of-a-kind projects going, get them to scale and get the technology proven. We are seeing it via various schemes. We have CfDs, we have Dispatchable Power Agreements and we have hydrogen allocation rounds. We would say that doing that to roll out first-of-a-kind technologies to drive down costs is really important and has had a measurable effect, which is great.

We also do get some early stage DevEx grants—very small, we talking £1 million, £2 million—for things like developing feed studies for some of these very early technologies. That is very welcome when you do not have the certainty that they are going to come to something. I would say that targeted, first-of-a-kind support to allow you to develop supply chains and go through first-of-a-kind technologies is extremely important for our industries but it should always be with the goal, like Rachel says, ultimately of allowing technologies to compete on a level playing field as mature technologies and work out what the optimum mix is for the UK.

Q166 **Clive Lewis:** That is interesting, in the sense that you believe that competitive markets will be the best way to drive prices down.

Tom Glover: Ultimately, yes. You have two goals: you want to get the new technologies developed so that you can bring down those technologies to their mature price; and you want to develop the supply chain so that you can get factories built, get the expertise developed and so on. Those first-of-a-kind technologies quite often need that support. However, if you do not think they are going to become competitive, you should not give them that funding in the first place. It has to be with an eye to that at some point you think they can get competitive and compete in order to drive down costs with other technologies.

Q167 **Clive Lewis:** Here is the problem, is it not? There is the process of beginning to get competitive to drive prices down, but the clock is ticking on the 2030 and 2035 net zero carbon targets that we want to achieve. I am not sure what the timescales are in terms of driving those prices down and hitting those targets that are so critical for remaining on a habitable planet.

That moves the question on to subsidies for consumers and the households that need these new technologies. If we look at Germany, for example, we can see that they have finance schemes for people to make a mass conversion to ground and air source heat pumps. It has not gone particularly well because they have used finance schemes and while the poorest households have been, I think, fully subsidised, there are many



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in that middle income bracket who have fallen through the hoops of the finance schemes and have been landed with large bills for the conversion of their houses to these renewable power sources. That has driven a backlash. In fact, it has driven many of them to the far right, who are climate change deniers and do not believe that this is something we should be doing—a “war on woke” type of conversation.

What do you think you would be advising the Government to do? Looking at what is happened in Germany, not wanting that backlash, what should we be doing to ensure that everyone can make the transition to these renewable technologies? That is for all of you.

Tom Glover: I would probably pass over to people with customers.

Craig Dolan: That is a hell of a question. The electric:gas price ratio is probably one area that you could look at. We have a very steep spark gap, as it is known. It is 3.97. Electricity is 3.97 times more expensive than gas. If you want to encourage people to move to low-carbon heating from electricity, then that gap needs to reduce.

How you go about that is very sensitive because we do not want to put more people in fuel poverty. Finding ways with policy, flexibility and other areas to encourage people to take on low-carbon heating so that they see an immediate impact in lowering their bills would be one way to softly take people on a low-carbon journey and encourage people.

Q168 **Clive Lewis:** How do we incentivise people who are in fuel poverty? If you are in fuel poverty, there is every incentivisation to want to be on cheaper energy bills.

Craig Dolan: Yes.

Clive Lewis: At some point they are going to need help, are they not?

Craig Dolan: They are going to need help.

Rachel Fletcher: I completely agree with Craig. Big picture, we need to make this transition one that customers want to go on, not necessarily because they care about the planet but because it is the cheapest way to run their lives. We already have renewable power on the system, the cheapest form of electricity that we have. Yes, we have some work to do to get more of it on there. We have some work to do to get the system operating flexibly.

Heat pumps are a case in point. We will very quickly get to the point where if your gas boiler is broken it will be a no-brainer to replace it with a heat pump, not because the Government tells you to or because it is good for the planet but because it is the cheapest thing to do, not just in terms of capital costs but because you can run your home more efficiently with a heat pump than a gas boiler. If you are operating that heat pump flexibly, you could be saving a couple of hundred quid extra a year. That is the mentality we need to be bringing to this and this is why I go back to the point I made at the beginning: we need more focus on



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the customer, how we involve the customer in the energy system, and how we make this transition a no-brainer for the customer and one that they are benefiting from where it really matters, which is on their bill.

To your point about fuel-poor customers, with the BUS some people can get a heat pump fitted for free, but the Boiler Upgrade Scheme will not be there forever and there will always be a capital cost with putting a heat pump in. I do think that we need to start thinking about enduring schemes to help people who do not necessarily have £3,000 or £4,000 in a savings account to make those capital upgrades to their homes. There is thinking going on about property-linked finance and other ideas about how you can make that kind of investment in your home.

Q169 **Clive Lewis:** This is the system they used in Germany, property-linked finance. It did not work so well for millions of people, unfortunately, because of contrasting house prices between east and west Germany.

Rachel Fletcher: Yes, but we cannot shirk this issue. We need to give more thought to housing associations, many of whom want to put heat pumps into the homes that they are renting to their tenants, but then they cannot recoup the cost of that because their rents are capped. There are some real issues we need to focus on.

The general principle and the principle that we live by as a company is: let us make this transition one that is a no-brainer and is good for customers. With respect to those who have made our renewable investment in Britain a success, which it undoubtedly has been so far and world-leading in many respects, that is the easy part. The much harder part is getting each one of the 26 million homes decarbonised and that is where we need to be putting our attention as an industry.

Craig Dolan: The lowest-carbon energy and heat should be the cheapest energy and heat.

Clive Lewis: I thought the lowest, cheapest energy was the energy you did not use.

Craig Dolan: The energy you did not use, which comes to the insulation, yes.

Chair: We are not going off into a philosophical discussion now. We are going to draw that panel to a close. Thank you very much indeed, Rachel Fletcher, Craig Dolan and Tom Glover, for joining us today. We will now move to our second panel. I will suspend the session for a moment.

Examination of witnesses

Witnesses: Councillor Bridget Smith, Barbara Hammond MBE, Dan Stone and Dr Rebecca Windemer.



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Q170 **Chair:** Welcome back to our second panel on the grid electrification inquiry today. We are talking to people involved in different ways in the planning system in particular. I start by welcoming our panellists, and I invite you to explain what your role is and therefore what you do that is relevant to our work. We will start with Councillor Bridget Smith, who I believe is the leader of South Cambridgeshire District Council and has an LGA role. Is that right?

Councillor Smith: Thank you very much indeed. I am here representing the District Council Network. I also lead on the environment for both the Cambridge and Peterborough Combined Authority and for the Oxford to Cambridge Pan-Regional Partnership, and I have a previous professional history in sustainable building.

Barbara Hammond: Hello. I am the CEO of the Low Carbon Hub in Oxfordshire, which is a community benefit society that has its own portfolio of renewable energy projects and uses the surplus created from those to work with 45 community groups across the county of Oxfordshire. We also work in partnership on innovation projects with our local councils, our two universities and our local DNO.

Dr Windemer: Hi, everyone. I have a background in town planning and a PhD in the planning system for renewables. I work at Regen, which is an independent centre of energy expertise, where I lead our work on planning and community energy.

Dan Stone: Thank you. I am the policy officer for the Centre for Sustainable Energy, which is a national energy charity. I do a lot of work with local communities and local councils supporting their planning policies and we also have quite a lot of insight about community engagement in respect of renewables. Prior to joining CSE I worked as a town planner for about 15 years and also for a wind consultancy.

Q171 **Chair:** Terrific. You will all have heard from the first panel that restrictions in gaining planning consent, in particular the time it takes, are one of the main barriers for electrifying the economy from the point of view of the generators and the distribution companies. Perhaps we should start with you, Bridget, given your role. Cambridgeshire is obviously en route to the North Sea for a number of generation companies and distribution companies, and now you have Sizewell a bit further to the north on the Suffolk coast. Could you give us a sense, from the planning point of view, of whether you share the view that it is taking too long to get planning consent for connections, or whether you have a different view?

Councillor Smith: It certainly is taking too long to get connections. The Local Government Association has recently done a bit of research and found out that there are more than 1,000 clean energy projects with planning permission waiting to be built out, with net zero outcomes, but all of those are at risk of being scuppered if grid connection challenges are not fixed.



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One suggestion that I would like to make on behalf of the DCN is that we currently have this ceiling of 50 MW for councils and local planning authorities approving schemes, after which they become nationally significant infrastructure designations, which is arguably a hammer to crack a nut. There is no reason why local authorities cannot be giving those approvals because it would undoubtedly speed up the decision making and one might end up with better decisions being made because of the local knowledge that we in local government have.

Just an example of some of the minor glitches we have: some parts of the electric vehicle and green energy infrastructure are extremely complex to deliver. If you want to put channels across a highway, you require multiple planning applications. There needs to be simplification. At local planning authority level, we are very experienced at this. We are very willing to deal with schemes that are even bigger and we are being faced with them on a daily basis. Two weeks before Christmas I met a company that was interested in putting in a 900-acre solar site on my patch. I am having those conversations with them. There is no reason why we cannot take that forward.

Q172 Chair: Perhaps that is ongoing and you cannot discuss that particular one, but in my patch there were a number of renewable applications coming in, particularly for onshore wind, 10 to 15 years ago. That has not been happening more recently. They were very controversial, in particular because of the connections between the generation and the grid—the pylon networks that would be required—and local councillors inevitably found themselves in a position of opposing because their residents were opposed to these things. Is that not one of the reasons for having a national scale as opposed to local, that you can often get caught up in the local objections to a scheme at the district council level?

Councillor Smith: It depends how these things are dealt with. At the district council we are finding that most communities are highly supportive of renewable energy generation. They understand the need for it and people are very engaged with climate change, particularly young people, but communities do not like things being done to them. It is about encouraging the providers to do early engagement with communities. I know you have submitted quite a lot of questions about community benefits and so on, which you will probably come to later.

It depends how you go about it. We are quite used to this at district level. In South Cambridgeshire we currently have East West Rail coming through us. We are supportive of the principle of that. The important thing is that we work with our communities, we work with the providers, and we work with Government to ensure that the community impacts are minimised and are mitigated, while still delivering the outcomes that are required.

Q173 Chair: Barbara, do you share that view that it should be done at a local rather than national level?



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Barbara Hammond: Whichever level you do it at, we need to help communities understand what proposals are coming, why they are coming at that particular place and at that particular time, and how they fit into a national strategy. We have an 840 MW solar farm currently going through its pre-DCO consultation phase.

Q174 **Chair:** Which county is that?

Barbara Hammond: Oxfordshire. It arrived with no warning—the local authorities did not know and therefore the communities did not know—and it comes with no national context. Why it is in that particular place, how it helps the transition; people want to know that. There is no picture or national map of where strategic infrastructure is to help them understand that, and there is no help or guidance about how it intersects with things that they deeply care about, such as food production and the impact on that, or land use.

There is a way of helping them to understand that. We see our role as working with community shareholders who live in that area of the county. We are listening to them so that they know that they are heard and so that we can go away and find for them information that they can trust about what is going to happen.

Consultation processes, at whichever level they are dealt with in this country, are set up for both sides to fail at the moment. Communities are encouraged to see themselves as victims in a process of change that they necessarily are encouraged to think of as bad because they are offered mitigation and compensation. They are not helped to understand that this is part of a transition that is going to be very good for everybody and how that is going to be very good for everybody.

The other two observations I would make about the consultation process, if I may, are first that it is funded and delivered by the organisation that is proposing the change, by the developer. Necessarily, one would expect that that information is being presented in the most favourable light for the developer, which helps mistrust to arise, to grow, and therefore makes space for misinformation to come in and start derailing the process.

The final observation I would make is that the consultation process, as it stands, is most accessible to those who have time and resource to get involved. That means people, frankly, of my age and older, and those are the people who have least to gain by the change that is going to come in the future. I think that young people are being disenfranchised in that process.

Q175 **Chair:** That is a much wider debate that you could say applies throughout the political spectrum. I do not think we will go too far down that track, but I take your point.

Rebecca, could you give us a view about whether the National Policy Statements will facilitate a grid roll-out more rapidly? What they are



trying to do is to halve the time it takes. Is that a way to do it?

Dr Windemer: Yes. There have been some positive signs from the update of the National Policy Statements. We have had the designation of renewables and transmission infrastructure as a critical national priority. It is too early to see if that is going to have a significant impact on speeding up the process.

Two important things alongside that. The Government put out a consultation on the NSIP planning regime where they talked about a fast-track route for consent, but there is no clarity at the moment as to how the fast-track consent will sit with the critical national priority infrastructure. Will renewables and grid infrastructure be able to go through that fast-track process? That is something that urgently needs to be looked at.

Alongside this, following the Winsor review we have seen the commitment to a strategic spatial energy plan but there is no clarity as to how that is going to be developed and where that will sit within the planning regime. For that to have an impact, that will need to be given weight and be sitting within the planning regime within the NPS. That process will also require community engagement alongside it.

Q176 **Chair:** Dan, you are nodding. I assume you agree with what Rebecca has just said.

Dan Stone: Yes. We are still discovering what that document will be and what it will mean but there is a key decision as to what you decide is "strategic". It talks a lot about offshore wind and grid capacity. It does not talk about any other forms of renewables. It is where you decide that cut-off is. I am not sure I have a clear view of what that should be at the moment.

I wanted to make the comment that although the NPS, the national planning statement, has improved, there is a striking mismatch between that and the National Planning Policy Framework. You have the NPPS, which is for nationally significant infrastructure projects, and then the National Planning Policy Framework for the planning applications that go into local authorities. That has not changed. It is out of date for the era that we are in.

Q177 **Chair:** Is that not being revised or has that not been revised recently to try to account for this?

Dan Stone: It has been revised and it has slightly opened the door for onshore wind and introduced a couple more routes through which they can come forward, but it has not gone nearly far enough. It is notable that since it was revised, there have been no planning applications for onshore wind. I think that tells you something.

The point I wanted to make is that the NPPS has been revised to underline the fact that our decarbonisation strategy is dependent on



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electrifying everything, and so it is dependent on hugely boosting renewable energy generation. The NPPF is silent on that and it should not be.

Q178 Dr Matthew Offord: You are touching on some of the questions that I had and so I have to pick carefully through this. How would you see changes to the National Planning Policy Framework supporting more planning practice guidance for smaller-scale projects?

Dan Stone: We need to start looking at how we reweight what we are balancing in those decisions. This is just a personal view, but I think it is about time we start re-examining how we balance drivers to tackle climate change and protect landscape. Now, I am not saying we want wind turbines everywhere, but I think the way that is weighed in national planning policy comes from a totally different era, when renewables were a “nice to have” rather than essential to a liveable future. That needs to change. That would reflect what we have seen in our engagement with local communities in terms of how they feel about renewables, even in designated landscapes and sensitive places. They love their landscape, but they are still keen to do something and do their bit within their landscape. It is out of date, basically.

Q179 Dr Matthew Offord: What do you feel about those projects that do not meet the National Planning Framework proposals?

Dan Stone: How do you mean?

Dr Matthew Offord: Smaller-scale, basically.

Dan Stone: I see. I think we need to do a better job of community engagement to get people onside to start off with. We have been doing this project that is all about community engagement for renewables. You involve people much earlier in the process, talking to people about how they value their landscape and setting them the challenge, “What proportion of your energy demand could you meet from renewables around you?” We have done it 13 times. Eleven of those times they have supported onshore wind, interestingly. Eleven times they have demonstrated support for enough renewables to entirely meet their community’s demand. Through doing that process you can start to move people’s opinions and get them on board.

Q180 Dr Matthew Offord: In terms of the National Policy Statements, is there clarity from the Government on what is appropriate, or is it diffuse?

Dan Stone: It does not talk about the absolute primary importance of boosting renewables. There is a striking disjoint in tone between the NPS, which is much improved, and the NPPF. It just does not acknowledge that logic at all and that needs to change.

In terms of onshore wind, it has not gone far enough to open the doors. Then, when it gets to a local plan going in front of a planning inspector, because you have this fairly weak and ambiguous language in the NPPF,



planning inspectors are not critically examining the local plans to see if they do the job in terms of renewables. The NPPF already says that local planning authorities should have a positive strategy for renewables, but you do not see that being critically questioned by planning inspectorates. All too often you get planning policies that are supportive of invisible renewables. You get a statement saying, "We support renewables in principle," and then a massive list of entirely negative criteria, basically. That is crazy. That is just not what we need.

Dr Matthew Offord: Some nodding of heads further down the panel. Do you have anything you would like to add to that?

Councillor Smith: Thank you very much. I completely concur with everything that has been said there. Critically, what we need is a plan-led process. We currently have a complete disconnect between local planning and the business case planning of the DSOs. The DSOs are working to a five-year plan. My emerging local plan, which is shared between South Cambridgeshire and Cambridge City, runs until 2041. We end up with situations where we have schemes in our local plan that then suddenly reach a cliff edge because we have run out of energy.

One example recently was with developments at the biomedical campus at Cambridge, which includes two new hospitals—a children's hospital and a cancer hospital. We were not going to have the supply to deal with it. We had to take it upon ourselves, through our Greater Cambridge Partnership, to create the business case for the installation of two primary substations, which we did and which was then accepted by the DSO, who surprised us and paid for it—we thought we were going to have to pay for it ourselves—but we have known this was happening for a long time.

The means by which we connect these two currently disconnected planning systems together is through Local Area Energy Plans, which are now happening all over the country. We are very lucky in South Cambridgeshire in that ours is being worked up with the DSO, which is not always the case, and that will directly inform our own emerging local plan. It means that the energy supply will be there as the developments are planned. It is quite a simple answer to a quite a big problem.

Q181 **Chair:** How long are they for, these energy plans?

Councillor Smith: They are currently only for five years. The business plans for the DSOs are currently only five years, whereas local planning works to three times that.

Q182 **Chair:** You said that they are a new area, energy plans.

Councillor Smith: Local Area Energy Plans are working alongside local plans but need to pull in the DSO plans.

My ask would be that Local Area Energy Plans were mandated for because currently they are only advisory. If they are mandated for, it



therefore means that we as local authorities—I think it is our county council that is currently leading on this—will have the statutory power and the resources to make sure that they happen. Then everything starts to work, which it is not doing at the moment.

Barbara Hammond: I would just like to add that I sit on the executive steering board for the development of the Local Area Energy Plan in Oxfordshire and we are working with our DNO, Scottish and Southern Electricity Networks—or our main one; we have three in Oxfordshire—to work out how you bring together that local area energy planning with local planning. It is a great thing to do. We absolutely have to do that.

The thing that I worry about in seeing those two things coming together is that we do not just need to sort out the development planning system to make sure that renewables, new substations and all of that sort of thing come along in the right time, we need to plan the transition. For me, the energy plans are absolutely critical to being able to work consistently between local authorities, communities and the distribution network to plan that effectively.

Just to give you some numbers, SSEN owns 50 primary substations and about 7,500 secondary substations Oxfordshire. We need to know what the plan is for each of those secondary substations.

Therefore, as important as the Local Area Energy Plan is, the tool by which you can dynamically work with the energy system as things change, in Oxfordshire we are working on a tool called LENZA, which brings together the geography and morphology of the electricity system with the geography of the area so that you can interrogate it, use it, draw down and make plans very quickly and easily. We can then repeat the pilot that we did with one of our communities on the Eynsham primary substation area to produce a Community Action Plan for Net Zero, which is all part of getting that community consent in advance of the applications coming in, so that you can move very rapidly and run towards our future rather than worry about moving away from our past.

Q183 **Dr Matthew Offord:** What changes would you like to see to the planning environment to speed up the process?

Barbara Hammond: We need Ofgem to be tasking the DNOs to be working as rapidly as the DNOs want to. They need to be able to use the right amount of funding to get the plans in place. We need the local authorities to be tasked to work with their community to produce those plans as well.

In order to get the grid edge and get the HV and the LV networks sorted to run alongside all of these changes that we need, we need some big changes like the ability for communities to buy and sell energy directly. Energy trading is an absolutely key part of this, alongside flexibility trading. We need the tools that go alongside all of that planning to enable action to happen, and for models to be spread out in a very granular but



commercial and self-sustaining way to enable these changes to happen. It is not just about what happens in each individual household or business, it is how those work together to work behind the secondary substations and the primary substations.

Dr Matthew Offord: Mr Stone, you are nodding.

Dan Stone: Yes, in agreement. I was looking through the Nick Winser report and its recommendations. I do not disagree with them, but it is all about the transmission network, sending electricity a long way, and you do not want to have to spend a fortune doing that unnecessarily if you can get communities to be more self-sufficient and consume the electricity that they generate in the area. However, there are regulations that prevent them doing that. You cannot currently buy electricity from your school that they generate on the roof. There are regulatory barriers that prevent that, basically.

In terms of the community engagement that we have been doing, we have seen this very strong narrative about communities being more self-sufficient. There is a total change in response when you talk to communities about hosting more renewables so that they can contribute to the resilience and sustainability of the country. That is such a distant objective it is not locally resonant. But if you talk to them about their community and their neighbourhood's resilience and being more self-sufficient, then suddenly you have values of pride, resilience and self-sufficiency coming in. Everybody can buy in to that, basically.

Q184 **Dr Matthew Offord:** Would you say there are any specific planning issues about building-level technologies?

Dan Stone: There has been lots of discussion about building-level technologies, and we are missing the place in this. We could resolve particularly renewable heat technologies by having air source heat pumps on each and every property in the whole country but of course that is crazy, particularly in urban areas. There is definitely a role for place-based heat solutions like ground loops and district heating solutions. I have not seen enough debate over that in the session earlier. There will be horses for courses. In some places, in rural places, air source heat pumps will be the way to go, but in denser urban areas it will not be.

Barbara Hammond: I think we need to make a decision whether climate change or heritage are more important. I know that is a controversial issue often, but to make this transition, everybody needs to be able to take part. It was good to see a change in the NPPF to enable solar on heritage in conservation areas. I still think that the General Permitted Development Order does not quite work. I still think it is going to be very difficult for local planners to navigate their way through that. They need a much clearer statement.

Dan Stone: I would definitely second the comment about our historic environment. I feel like we need we need to be talking a lot more about



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decarbonisation and retrofit, which is a huge challenge and a bit of a change in role of what a conservation officer is and does. They should be thinking about not just conservation of the built environment, listed buildings and all the rest, but also carbon reduction and giving advice and signposting people.

Councillor Smith: With over 102 conservation areas in Greater Cambridge I could talk a lot about that but I think you have covered it.

What has been missing from the debate so far has been a conversation about reducing demand. We heard quite a lot in the previous session about increasing the supply but there is a massive amount that we can do through retrofitting and also through setting much higher standards for new builds of both homes and commercial properties. We are currently very constrained. We are even more constrained than we were by the recent ministerial statement, which reduces our ability to set higher energy efficiency standards far above what building regs require.

Now, if you talk to most district council leaders, they will tell you that they would like only to be building houses to the highest energy efficiency standards. In South Cambridgeshire, just about two hours ago, we approved a planning application from ourselves for a development of about 300 houses, 100 of which will be affordable houses. Seventy of those will be council houses, which will be built to passive house standards. We are funding that ourselves. We are having to take the financial hit to do it. If it was a commercial developer, it would be open to negotiation and they would not have to do it. We are trying to lead by example. We should not be, in this day and age, building new homes that have to be retrofitted in a matter of a couple of years' time. It is a bit of a disgrace.

Dr Matthew Offord: Very good. Thank you very much.

Q185 **Chair:** Thank you. Before I bring in Caroline, can I ask a question about the national scale connection process? If you are a developer, you go to National Grid and you seek a connection. Is it your experience that the connection is provided in one location and there is no real debate about where that location should be at the planning level? Perhaps this is addressed to Bridget. Is in your experience that the district council, if it is the planning authority, is presented with a specific case but does not have the ability to influence with the grid where some alternatives might be?

Councillor Smith: I am going to have to give you a written answer to that because I am afraid I do not know the answer offhand.

Chair: Does anybody else had any experience of that? No. Okay. Thank you.

Q186 **Caroline Lucas:** Before I go on to the questions, I wanted to ask about energy trading within the community. It always seems such a no-brainer.



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If you are creating loads of excess solar energy in one house, why would you not be able to sell it to your neighbour? Can you explain to me what practically would have to happen to enable that?

Dan Stone: There is a point at which my knowledge ends, but the way it is set up at the moment is that every house has to have a meter, basically. What it means is that I can sell electricity, but in order to move it around, I need to export it to the grid and then somebody reimports it. It means that you lose out hugely in the value because you are paying those costs. We just need to change that architecture.

Q187 **Caroline Lucas:** What does that mean? I do not understand.

Barbara Hammond: It is the energy regulations.

Dan Stone: Yes.

Q188 **Caroline Lucas:** There is nothing tangible?

Barbara Hammond: There is nothing practical about why we could not do it. It is a regulatory issue.

Q189 **Caroline Lucas:** Are there any downsides in doing it? I am just wondering what the obstacles are, given that it seems, as I say—to me at least—such a no-brainer.

Barbara Hammond: I do not think there are any downsides.

Dan Stone: I do not think there are.

Barbara Hammond: The potential downside is one of perception, where people think that somehow they are going to be self-sufficient and not require import from the wider network, which is clearly untrue. However, it is not a difficult thing to do, and we know that there is a lot of political and community support for it.

Q190 **Caroline Lucas:** They do it in Germany and other countries, do they not? It is not rocket science.

Barbara Hammond: Yes, absolutely. It is a regulatory change that we need.

Dan Stone: For example, there was a proposal to do that in my street and we would all have traded electricity with one another. However, in order to make that work, to get around this regulatory barrier, we were going to put in a micro grid, which is hugely wasteful. It is just a second parallel grid. It is crazy. If you can have a master meter at the end of the street that measures the grid electricity you are using, and then submetering within those properties—

Barbara Hammond: You do not even need that these days.

Dan Stone: Maybe not.



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Barbara Hammond: You can have a virtual meter. There are lots and lots of ways of doing it. We spent four years in Project LEO, as one of the UK's smart home energy demonstrators, working out how to do this. To make those models work at the community scale we need electricity trading and we need value for local flexibility trading.

One of the things that we have not focused on in this session so far is the difference in treatment between the transmission system and the distribution system. With flexibility trading in particular, at transmission level the prices are set by the peaking price per kilowatt hour, which can be huge, as we all know. The distribution system scale is constrained by the cost that it would be to the distribution network to replace that asset, which is a lot lower. We need to find a way of working the whole system together rather than as bits.

Caroline Lucas: That is very interesting. Thank you.

Dan Stone: The other thing that we have not really discussed is a role for communities. We have talked about individual trading, but there is a huge danger when people are being prosumers that some people will be left behind. My friend lives in a passive house with an EV on the driveway and a battery on the wall. There are all sorts of products that he can use to sort of reduce his energy costs. If you live in a rented one-bed flat and you do not even own the walls, none of that is available to you. If you have community flexibility projects, it democratises things.

Q191 **Caroline Lucas:** This is a bit of a diversion because it is not the question I am supposed to be asking, but is about going back to community benefits. Clearly the Government think that community benefits are a positive way to encourage communities to accept important infrastructure in their areas. Do you agree? Barbara, I think it was you who said that sometimes it engenders a view in people's minds that whatever is being offered must be bad because they need this other thing on the side to compensate. Could you unpack that a bit more?

Barbara Hammond: I am not at all in favour of what I would see as a bit of a bribe, if I can use that word, where you get a little bit off your energy bill to accept pylons going across your landscape. I would much prefer an approach that embeds new solutions in the places that they happen in, with community benefits offered in what I would call a really sticky way.

Q192 **Caroline Lucas:** In that example then, with someone with the pylons or some such, what would you offer them instead?

Barbara Hammond: Well, I would like to know the extent to which it would be possible—this might sound off the wall but I will say it anyway—for people to invest in that transmission line going across their landscape so that they have a stake in it for the 50 years or however long it is going to be there and/or a proper community fund coming out of that so that you can help people to reduce their demand. That is a much more



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effective way for the long term in reducing their bills and, frankly, making their lives healthier.

In this session so far, we have not covered the impact of really substandard buildings on people's health. It doesn't really matter what you do to the heating system; they are still going to be unhealthy. I want to see schemes that really help people to make changes for the long term, which invest for the long term, and that, therefore, make a positive change that everyone can run towards.

Dr Windemer: We have some really good examples of community benefits. Some of the research that I have done previously looked at people who have lived next to wind farms for 20 years or so and at the impact of those community benefits. Where there has been a fund that has responded to local needs and people have been able to shape the use of that benefit fund, it has had a genuine impact, has created a long-lasting impact and has created an impact that is benefiting the wider community.

The issue we have with things such as energy bill discounts is that they may not be hitting the people in the area that need them the most and are not creating that longer lasting impact.

Also, when we are talking about community benefits—and the Government have been talking a lot about benefits in the context of transmission infrastructure—we need to focus on engagement as well. As has been mentioned in this session, it is a case of getting people to understand why this infrastructure needs to be in this particular location and then getting them involved in the scheme from the start.

Echoing the point that you raised around ownership, the Government did that brilliant piece of work back in 2015, the Shared Ownership Task Force, and a very useful report came out of that. However, none of the actions from the report was taken forward.

Councillor Smith: One size does not fit all as far as community benefits are concerned. I think you need to do the work with communities to find out what benefits they want. The DCN takes the approach that the general mood is that communities support renewable energy, but they need to be worked with from the outset.

You mentioned people investing. I can give you a little example from my own village where we have the only community wind turbine in South Cambridgeshire—the only wind turbine in South Cambridgeshire. It was £1 million of local investment, and some people invested £500 for their grandchildren, and some local companies invested significant amounts of money. The community was involved from the beginning, they have a sense of ownership over it, and it pays an annual tithe back to the community of £5,000, £6,000, £7,000 a year for investment in community green projects that helped my village's journey towards net



zero. Then there was quite a lot of effort put into mitigation for the few negative impacts from it.

It is about working with communities. Communities are not the problem. It is the capacity of the grid that is the problem and, I am afraid, the national planning policies are the problem. Communities and local authorities want to make this work, we just need to get over some of these very big barriers.

Dan Stone: I can just furiously agree with all that, really. From the work that we have done, for the public that develops, owns and benefits from a renewable energy project going ahead in their place, the wind turbine glinting on their hillside or solar farm or whatever has a significant impact on how it is seen and how people feel about it, basically.

In those workshops we did, the overwhelming majority identified support for enough renewables to meet their needs, they were happy with subsidising other communities to be decarbonised, but only if they benefited from it and potentially owned part of the asset.

Q193 **Caroline Lucas:** What is the optimum size to make that work? I am thinking about the Rampion wind farm not off the Brighton coast but off a lot of the coast along that south bit of England. When the energy company came to us to begin with, we were talking about the idea of some sort of community ownership but it was so disparate. The relationships between the various different councils to be able to have the brokerage that would have been necessary to make that happen did not exist.

Dan Stone: Through that process, we found it works best at the neighbourhood scale because you are engaging people about their landscape, so they have to have a stake in it.

Q194 **Caroline Lucas:** Sorry to be awkward, but how do you have a neighbourhood scale if you are talking about a bloody great wind farm?

Dan Stone: I am not saying this is the only solution. For instance, there are thousands of communities writing neighbourhood plans. There is no encouragement for them to plan for renewable energy. There are opportunities to think about this, and communities are keen, but we are not encouraging it enough.

Barbara Hammond: We have mentioned the shared ownership work that was done in 2015. That went into some detail about how you might be able to put that sort of thing in place. From my own point of view and the work that we have done, we think that there is a scale. If you are a community benefit society, as we are, if you are a co-operative, which many community energy businesses are, the structure constrains your scale to a certain extent. As a community benefit society, I would need to own 25% of something so if the big solar ground mount I was talking about would cost £1 billion, it would mean that I would need to raise



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£250 million, which, you know, even though it is Oxfordshire, might be a bit of a stretch.

There are other ways of doing it. We need to be serious about how we enable it. They have managed it in Denmark; they have managed it in Germany. There is nothing that would stop us if we were determined to make it happen. I absolutely agree with what Rebecca said. The capacity building impacts of people owning things is a huge benefit in so many different ways that we do not have time to get into here.

Q195 Caroline Lucas: My last question, as I am wary of time. You mentioned some other countries just then. Is it the case that we are behind where quite a lot of other countries are when it comes to the issue of community engagement and community ownership of energy and or is it new in lots of places?

Barbara Hammond: Certainly it is in some. The community energy sector is bigger than we might think it is. There are hundreds of working businesses now and a few at the scale that we have managed to get to. You have some brilliant ones down in your neck of the woods. So it is a sector that can have more and more influence. We need the ability—or the invitation—to get in and work with developers very early on so that they understand the benefit to them and that it will not actually cost them. It is much harder to retrofit a solution when a project has been scoped and the financial structuring has been done than if you do it very early on.

I think we need to assume that much more is going to happen and it is a way of enriching communities in so many different ways.

Chair: Thank you, Caroline. Barry, did you want to come in briefly?

Q196 Barry Gardiner: If I might, Chair, thank you. My apologies for turning up late. It is very welcome to have a panel that is three-quarters women. This morning I had a panel that was all four men, so it is really good, and it has been good to listen to you.

I wanted to ask you to go back to some of the issues around grid development, because we are told that in the next seven years we have to build four times the amount of grid infrastructure that we have built since 1990. We have, what, 35 years to do four times as much.

Now, we keep on talking about grid flexibility and we saw the changes that the systems operator came out with in December about trying to get connections on to the grid. I think most people think that they were inadequate and that they will not do the job that is needed to get enough renewables through. One suggestion has been that instead of trying to transport the electricity, we use the offshore capacity to convert to hydrogen and then use the national gas infrastructure network to transport hydrogen and then, at destination, convert it back to electricity; use the network to transport the hydrogen and then get the power from the hydrogen. Have your organisations been putting much thought into



that? Yes, Dan, I saw your lightbulb go on.

Dan Stone: I would put a big safety warning around that. It is not my area of expertise, but my understanding of it and from what I have read is that every time you convert energy from one form to another, you lose.

Q197 **Barry Gardiner:** You lose—a 70% transmission loss—but at the moment we already have transmission loss in the grid. I totally understand the issue about transmission loss, but it is an existing transportation mechanism and my understanding of the pilots that have been done is that they have shown—and I was one who had great fears because of the nature of hydrogen molecules that the leakage would be there and so on.

Dan Stone: My understanding is that it is of use where you have no capacity in the network as a storage medium. Hydrogen is best seen as a storage medium. It is of use in really hard to decarbonise sectors like HGV haulage, but it has limited use outside those areas.

Q198 **Barry Gardiner:** Sorry, but take the cement industry, the steel industry, the ceramics industry—all the heavy industries are going to need hydrogen in order to achieve the temperatures they require. Do you accept that?

Dan Stone: I absolutely accept that. I only know so much about it.

Barbara Hammond: Very quickly—hydrogen is not my area either, but I do talk often to the boffins in the universities about this stuff. I would be very interested to know the economics of that because as well as losses from transporting things long distances, you have the energy cost of making hydrogen and then the energy cost of transforming it back because, as Dan says, it is a vector not a fuel in itself. Then you have the issue of hydrogen molecules being very small, escaping very easily and being quite flammable when they do escape.

I think there is a really good thing to look at about how you develop hydrogen-based systems that are focused at those heavy uses that you were talking about.

Barry Gardiner: Prioritisation.

Barbara Hammond: Yes, absolutely. I absolutely do not think that we should be looking at hydrogen as a cross-national thing that we expect to get into every household.

Barry Gardiner: I totally agree with that, yes. It would be for heavy uses, for big construction plants, major transportation. Battery storage is simply not up to bulldozers and things like that—interesting.

Q199 **Cat Smith:** My question is about the role that local authorities have in achieving net zero. Thank you for your brilliant answers so far, because in many ways you have answered parts of my questions already, so please



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do not feel that you have to repeat anything unless there is anything you want to add.

If it could go to Dan first about the role of local authorities in delivering net zero, the differences between district and unitary, and whether you think that councils are taking that role seriously enough, and whether the way that they operate their planning systems feeds into that.

Dan Stone: It is variable. Some local authorities are doing amazing things, well beyond their statutory responsibilities, producing local area energy plans and all sorts of action plans to decarbonise.

We did some work on climate change, reviewing the planning system and how it operates, and it found, sadly, that local authorities reported that central Government was constraining their ambitions. For example, on net zero policies for new developments, loads of councils have been adopting or trying to adopt very ambitious binding net zero policies that broadly have the support across the energy works world, and then it has just been outlawed so they cannot do it anymore; it is really variable.

Also, the interesting stuff that they are doing is not statutory. It has no funding, so people are writing local area energy plans but do not have the staff to implement that plan or are outsourcing the local area energy plan to consultants like us and then they do not have the knowledge in-house to actually get investment-ready projects coming out of it.

Cat Smith: Bridget, you were nodding along, which did not surprise me—

Councillor Smith: I am nodding because it is good to hear somebody speaking the words that I was going to speak; it is a change.

We know that at district level and at local authority level we have influence on between 30% and 40% of emissions, much of it indirectly, but we can still influence it. I have lovely examples, which I will share with you in writing, of case studies of real innovation at local authority area. They surprised me, some of them, and that includes Oxford.

As you said, we are completely constrained in what we can do. We have the ambition to do it and we can do the little things as well as the big things. I imagine that all of us are trying to put our own houses in order. If I just give you a little example: 70% of the emissions from my own council are from our waste fleet. We wanted to solve this, so electrification of the waste lorries was the obvious thing. We are about to take delivery of the fourth lorry and now we have maxed out the grid. What we are doing now is building our own solar plant with battery storage. That will provide the power for all the future electric bin lorries. We are solving those problems ourselves and actually that creates a nice exemplar, which I am sure other local authorities will take up. We had a bit of money from our combined authority, thank goodness, to help us with that.



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We have the powers. We have the will, so a lot of the solutions are at that district and county level. It does not make any difference what level of local government it is. We all want to do the right thing, but by mandating for local area energy plans you start to give us the powers, the tools and the resources to start going as far as we—and I am sure you—would like us to go.

Q200 Cat Smith: The ambitions are really clear there, Bridget. Do you have the resources to finance the skillsets of staff, not just in your own local authority but from other local authorities as well to be able to deliver on this?

Also, how does it feed into the planning because obviously we are quite keen to talk about planning? Does your planning team have enough resources, skills, and enough people to be able to fulfil your obligation and meet net zero?

Councillor Smith: It is very variable across the country. I am very fortunate; I have a shared planning service with Cambridge City with 170 officers in that, which is more officers than in some local authorities. We are a growth area and are dealing with 6,000 planning applications a year.

What we and all other local authorities will say is that they are competing with the private sector. In Cambridgeshire, it is a very vibrant private sector that can offer way more money than we can. We are losing people to the private sector. It is not a fair fight. Today I heard a story about a Cambridge company offering to pay off the student loans of planning graduates in order to attract them. It is just not fair. What we can offer is great experience and a very varied professional career in local planning.

The LGA did a survey in 2020 that identified skills shortages as being moderate to severe threat to their being able to deliver on their priorities.

Q201 Cat Smith: Yes. I know when I was first a graduate, I suspect I would have bitten off the hand of anyone who offered to pay off my student loan.

Rebecca, that is obviously an area of expertise that you have. Is there anything you would like to add to that?

Dr Windemer: Yes. Resourcing of the planning system is an issue across the board. When we are looking at the kind of large-scale NSEC projects and the local authority projects, as we have heard mentioned, there are just not enough local authority planners, and that is linked to the lower salaries.

A report from the Royal Town Planning Institute last year said that between 2013 and 2020, 25% of local authority planners left their roles. The impact that is having on projects is significant. You have staff leaving halfway through some projects in the planning system, so you have that turnover of staff, which will really impact renewables projects.



Linked to that, is an issue around skills. In the renewables sector, we are seeing new forms of applications. In my own research I looked at repowering applications. A lot of local authority planners were not aware of those applications or how to address them because they had not had them before. We are seeing a similar situation at the moment with battery projects and local authority planners not being upskilled on these new forms of application. Therefore, it is resourcing and skills in renewable energy.

This is an area where something urgently needs to be addressed, because we are going to see more and more applications coming through the system and we need the people who can make decisions. We can have things such as the fast-track consenting route for nationally significant infrastructure projects, but that is not going to work if we do not have the right people in place.

Q202 Cat Smith: You say that something needs to happen. Is there anything you would like to suggest that you think should be happening—recommendations our Committee could make to the Government to address this problem?

Dr Windemer: Ultimately, to get more planners into local authorities you have to make that role more attractive. You have to give local authorities the money to be able to pay local authority planners more. There also needs to be training in place around renewables to upskill planners. If you rebranded those local authority planning roles and had local authority planners who were specialising in renewable energy, they know they are making a real difference and, yes, I think something like that could work.

Dan Stone: I want to point to some work that we did for the National Infrastructure Commission for Wales where we were looking at just these issues and thinking about renewables. They are proposing a pooled planning resource for energy to share expertise and technical skills, for articulating policies, engaging with the public and considering applications, so that is the sort of thing that you could do.

I want to touch on some of the other levers that local authorities have. They are in a unique position because they have a lot of trust from their local constituencies. People do not trust their energy suppliers, do they? I am not sure they trust national Government. They trust local government a bit more. There is a huge role local authorities can do in terms of convening debate and, again, addressing that kind of civil action on the climate crisis and bringing people together, so they need to have the money to do that.

Cat Smith: I will bring you in, Barbara.

Barbara Hammond: I have two points. One is that I am very worried about the trap that we keep falling into in thinking that local area energy planning is part of the planning system only. It is very important that we sort out applications for new development, but local area energy planning



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is actually about bringing the local area and the DNO together to plan the transition, irrespective of whether things need to go through the planning system. We must get that clear.

There is an issue about what we mean by “local”, because we are making the decision that we are going to have regional system planners to help those local area energy plans. Whether they get close enough to where people live is a question I would have.

That relates to my other point, which is that DNOs are starting to understand that they need to upskill themselves in their expertise on the low voltage network. They have not needed to know exactly what happens there because they have been pushing electricity out, and they have been working to rules of thumb and the way that we all put the kettle on for breakfast and then put the oven on. Those patterns are breaking down now. They need to understand their assets, so there is an issue about upskilling the energy system planning side as well as the local authority planning side.

Dan Stone: Also enabling them to have intelligible conversations with one another that they understand, because you have system planners and town planners, like me, who speak a totally different language. You need to get them together and start casting scenarios about, “Well, what is your ambition for renewables in your area, what about EV roll-out, and what extra interventions are you going to do that will change demand and supply of renewables in your area?” I do not know whether that is happening yet in that way.

Q203 **Cat Smith:** Bridget, finally, just a quick question about the guidance that you get as a councillor from the Government. Obviously, as a council, you are expected to be able to operate your own planning system but as a council what guidance do you get from Government on delivering net zero?

Councillor Smith: The NPPF guidance to us does not articulate. It does not help us on our journey to deliver net zero, all right?

Cat Smith: Further guidance would be necessary or—

Councillor Smith: For us in local government it is really, really important. In South Cambs we talk about being green to our core. I imagine most other councils could use the same language. Those are just the buzzwords we have chosen. We are prioritising it, but we are not seeing that same direction coming from central Government, that they want us to be prioritising that. When we are dealing with planning applications—for instance, if I have a planning application come in for 100 bog-standard houses, with the bare minimum of everything in it, which will all need retrofitting some way down the line, I cannot reject that planning application on the grounds that, “This is poor housing.” It is okay housing. It meets current standards, but the current standards are lamentably low.



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I would like to be able to set local priorities and, as I have mentioned, the ministerial statement just before Christmas now prevents me from doing that. I have an emerging local plan in which I want to set 20% biodiversity net gain targets. I want significantly increased percentages of renewable energy mandated into that, and for new developments I want much, much higher energy efficiency standards, and so on.

The majority of local councils want to do that, but we need the Government to have our backs on it because currently our local plans will go to inspection, and this will be thrown out. You may be aware that we have a water crisis in Cambridge that has stopped development now; we have 9,000 houses that are not being built because the Environment Agency has declared that we have run out of water so we cannot do it.

Back in 2018, we tried to reduce consumption to 90 litres per head in the local plan. That was thrown out by the planning inspector, so it is back at 120 and now we have a water crisis. We do not want that to be repeated when it comes to energy efficiency and so on.

Cat Smith: That is a very good illustration, Bridget. Thanks.

Q204 **Chair:** Is anybody familiar with the opportunities that might be provided if some of what we have heard in the previous panel about energy storage, vehicles and heat pumps was to apply to onshore wind?

Dan Stone: To onshore wind?

Chair: Yes.

Dan Stone: I am not sure I quite understand that.

Chair: If onshore wind were to take off—it has currently been stymied but if it was to take off again and communities were able to get benefits from supporting onshore wind applications in their area—has any work been done on how the benefits might be shared across communities, Bridget?

Councillor Smith: To feed into that, our local area energy plan is looking at where there could be onshore wind within our area. Again, there need to be conversations about more strategic land management, about the best places for renewables, probably on a county basis and probably wider than that, and what sort of renewables, whether it is suitable for onshore wind or suitable for solar, or whatever comes later.

Factored into that will be the impact on communities but also how communities can benefit without running into the pitfall, which you talked about, of demonising it. That certainly will be something for further down the planning line.

Barbara Hammond: They have done a lot of work on this in Scotland. It is the norm now in Scotland for community benefit funds of £5,000 per



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MW installed per annum to be put in place, which can then be used by the community for all those long-term benefits we were talking about.

Dr Windemer: Some of the work we have been doing recently at Regen is around the potential for community wind powered heat: the idea that a community would have their own wind turbine and that would power a small heat network. That is something I can follow up on with written evidence, but it adds another argument to the benefits of onshore wind as part of that work. We have also heard from a lot of community energy organisations that are really keen and ready to go and wanting to put in their own community-owned turbine if the planning policy changes.

Chair: Yes. I have one in Bishop's Castle in my constituency, for example.

Dr Windemer: Yes.

Chair: If you have a written submission, it would be very interesting to hear it. Barry Gardner, final question.

Q205 **Barry Gardiner:** Of your 170 planning officers, you mentioned that you were seeking to get a 20% biodiversity gain. Do you have enough ecology officers trained to BS standards in order to deliver that? Local government as a whole has said that the number of ecology officers trained as planning officers is about one-third of what is required in order to do this.

Councillor Smith: You are quite right; there is a national shortage. About 18 months ago I advertised for two ecology officers and got no applications. We have since then made inroads into getting the people we need. It is an exciting planning landscape in Cambridgeshire. We should be attracting the very best because we are building 50,000-plus houses, and Mr Gove wants to build another 150,000-200,000 as well, so there is going to be plenty of work for people and very, very exciting work indeed.

But there is a national crisis there, and this goes back to the point you made about: we need an absolute focus on training people up to deliver the skills that we are going to need in order to deliver on all these ambitious net zero, environmental and landscape targets that we have.

Chair: A final answer from Dan.

Dan Stone: I have a final comment about the future home standard in the written ministerial statement and binding net zero standards. The written ministerial statement is basically saying that we have a multiplicity of different standards, and we have a national housing system, and it makes it very complicated and expensive to develop housing because you have different standards everywhere, and I think there is some legitimacy to that argument. I do think there is a great argument for the Government potentially developing a voluntary binding net zero standard—a single one, that local planning authorities could



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adopt where viability and land value supported it—and that would simplify the process.

Chair: Thank you very much. That concludes our second panel. I would like to thank our panellists, Councillor Bridget Smith, Barbara Hammond, Dr Rebecca Windemer and Dan Stone for joining us today.