

Environmental Audit Committee

Oral evidence: Progress on climate change mitigation, HC 593

Wednesday 9 September 2026

Ordered by the House of Commons to be published on 9 September 2026.

[Watch the meeting](#)

Members present: Julia Buckley; Jonathan Davies; Barry Gardiner; Sarah Gibson; Chris Hinchliff; Sojan Joseph; Manuela Perteghella; Adrian Ramsay; Martin Rhodes; Dr Roz Savage; John Whitby; Sammy Wilson.

In the absence of the Chair, Barry Gardiner took the Chair.

Questions 1 - 67

Witnesses

[I](#): Emma Pinchbeck, Chief Executive Officer, Climate Change Committee; and Dr Eoin Devane, Acting Director, Net Zero, Climate Change Committee.

Examination of witnesses

Witnesses: Emma Pinchbeck and Dr Eoin Devane.

Q1 Chair: Good afternoon and welcome to this meeting of the Environmental Audit Select Committee. I am standing in as Chair for Toby Perkins, who is unavailable this afternoon. This is a one-off session to question the Committee on Climate Change on its "Progress in reducing emissions: 2026 report to Parliament". Our brief focuses on areas where progress may be off track or that we feel are lacking credible policies and plans.

We have two witnesses before us this afternoon, Emma Pinchbeck and Dr Eoin Devane. Would you like to introduce yourselves for our viewers by saying who you are and what the Committee on Climate Change does?

Emma Pinchbeck: I am Emma Pinchbeck, the chief executive of the Climate Change Committee. The Climate Change Committee is the independent adviser to Government on the UK's Climate Change Act and the carbon budgets, but also on climate change risk and adaptation. It is also the auditor, so in this role we are working for you, to hold Government to account on the legislated targets. We have similar functions across the devolved Governments, too.

Dr Devane: I am Eoin Devane. I am acting director of net zero at the Climate Change Committee.

Q2 Chair: Thank you very much. I am so glad, Emma, that you opened up by saying that your role is to help us to hold Government to account. In that respect, the Transport Secretary wrote to your committee last November to seek your views on the airports national policy statement and Heathrow. They said that that was part of the public consultation, but it took more than six months for your chair, Nigel Topping, to reply, which he did on 2 June. You then said that you would not publish that until between 9 and 16 September, but that you would meet him in July to discuss the draft. What advice did you give Government on the proposed draft ANPS, or did you only give advice after it was published on 18 June?

Emma Pinchbeck: We are going to be publishing, as you just said, in a couple of weeks.

Q3 Chair: This morning you released a statement saying that you were going to publish the day after Parliament rose for its conference recess.

Emma Pinchbeck: Yes.

Q4 Chair: We will get to that, but I am focused at the moment on what advice was given to Government before the publication of the draft ANPS on 18 June last year. Six months seems a very long time for there to be radio silence between you and the Government on such an important document.



Emma Pinchbeck: Of course, there is never radio silence between us and the Government, in that we have working-level relationships with officials on everything that we cover. There were conversations, for example, with DfT officials on advice on aviation for the seventh carbon budget, which came out in November 2024. As you know, the briefings for that were going on across 2025, and there were changes of Ministers and so on, so there will have been discussions between the Departments.

On the ANPS, we are an independent body, so it is not our job to shape the consultation. The request came in, and the first reason for the delay was simply that there was a new chair. The reason for the delay in publication was that we are the statutory adviser to all the devolved Governments and to the UK Government, and we had the statutory adaptation advice to publish this year.

Very briefly, because we are small, that cadence means that this year was a big year for adaptation and getting the statutory progress reports out. We had to fit the additional request into that timeframe, while also being inside the ANPS window. That is the only time we could do it. It is a limit on the resources we have. But I think we are delivering what you will need to do that scrutiny—although of course it would be nice if we could do things faster and earlier.

Dr Devane: As the person responsible for the mitigation analysis, maybe I could add to that. As you know, this is a complex topic. The question we have been asked to advise on is not just the technical detail of the Heathrow expansion national policy statement, but also the wider role of aviation emissions in the context of carbon budgets and the net zero target. There was a need to produce new analysis and new calculations to inform this advice, which obviously takes time.

Emma Pinchbeck: One point in the discussion is that we use the DfT modelling—or some of it—to do our assessment, as we do for other bits of our advice. We refine it, we put in our own inputs and so on, but there will have also been conversations between officials at working level because, where necessary, we co-ordinate to do the work. It is a substantive bit of work. When you see it, you will see that it is substantive. But it has been a long period of time, as you say.

Q5 Chair: Yes. My point—which you are not really addressing, I have to say—is that you were originally asked by Government to make your views known as part of the public consultation. I understand that you are saying, “Well, it was difficult getting back within that six-month period,” but we are now in a situation where you have just said that you are not going to be publishing your response, which now is to the HENPS—exactly the same thing, only with a new branding—until 15 days after the consultation period has closed. All this talk about how you are there to help us hold Government to account—what has happened to that? The public have not been able to see the views of the most important independent adviser to Parliament—not to Government, to Parliament—



before the consultation has closed.

Emma Pinchbeck: I appreciate that it is challenging on the timeline. We would have liked to go earlier. We are extremely small. We have put out a large amount of statutory work and additional advice over the last year. That is why the timetable is the way it is. We have back and forth with officials about whether we can move the date. We genuinely have tried to accommodate the need for scrutiny.

The other thing to bear in mind is that, by precedent, we do not publish when political party conferences are on. We are in the same squeezed window as a lot of bodies while the party conferences are on. We have had to—

Q6 **Chair:** But you are doing it.

Emma Pinchbeck: We have had to do it in a small window between them, but it is just a very compressed period. Barry, I am very happy to pick this up and have further conversation about it, but we could not do it any earlier than we have done.

Dr Devane: We are also appearing before the Transport Select Committee next month to talk through our advice.

Emma Pinchbeck: Yes.

Q7 **Chair:** Yes. I have been guesting on the Committee, so I am aware.

The parliamentary scrutiny of the draft Heathrow expansion national policy statement, as it is now called, closes on 26 November. Will your committee be advising Parliament on its assessment of the final draft HENPS before Parliament will have to decide whether to approve it or not? Once the Secretary of State lays it before Parliament, it has to be approved or not within 21 sitting days. If you think timelines were tight between last November and 16 September this year, how are you going to manage that deadline to do what you started this session by saying was your job—namely enabling us, as Parliament, to hold Government to account?

Emma Pinchbeck: You will have the draft advice on the publication date, which you have seen. We will then be at your disposal to come in and give parliamentarians advice, either in formal sessions—as you know, we are in front of the Transport Committee—or informally. We are not intending to do additional modelling on statutory advice, apart from the formal advice we will give.

Q8 **Chair:** The consultation period closed eight days ago. Does that mean you do not expect Government to revise the Heathrow expansion national policy statement? Does it mean that you do not expect any revision to it in light of the consultation that has just closed? Certainly, the questions from this Committee and the Transport Select Committee would imply that there is quite a bit of amendment that needs to be done to that document, but if you are not going to be giving us your advice on the



HOUSE OF COMMONS

final document, you are yet again coming late to the party and not doing your job.

Emma Pinchbeck: I cannot comment on exactly how we have gone about giving the advice, because it starts to touch upon what we will say when we publish. I am happy to pick some of this up outside the room or immediately after publication, but to answer your question I would have to get quite close to telling you how we have gone about shaping the advice. It is still not completely finalised and in review, and we cannot, as you know, discuss statutory advice before it is published.

Q9 **Chair:** I am not asking you to discuss the advice; I am asking you to address the fact that the Government may well change the final draft in light of the consultation, and yet we do not know whether you, the most important independent adviser to Parliament, will be giving us your advice on that final draft when it comes, which takes account of all the things that neither you nor we have yet seen.

Emma Pinchbeck: I think this gets quite close to talking about methodological approaches.

Dr Devane: We can say our advice next week will set out our assessment of the draft HENPS and our recommendations on what, if anything, needs to change. The consultation process is designed to uncover things that may or may not need to change, then the final draft will be produced. We do not have a statutory role to assess national policy statements. We were commissioned specifically to provide this advice on the draft, which we will be doing in line with that request.

Emma Pinchbeck: I think that, from the way that we have approached it, there will be enough in the advice that we are giving for you, as parliamentarians, to look at both draft and final consultation responses. I do appreciate the challenge on the timeline. As we have said to you in previous sessions, we are extremely small. The same group of analysts that do the mitigation work have been working on "A Well-Adapted UK", the report that you have seen all over the media this summer on climate risk. They are the same group of analysts doing the progress reports, which have a fixed statutory timetable for both the devolved Governments and the UK Government.

It is incredibly compressed, so sometimes what looks like a very long lead time is that we do not have the analytical capacity to do additional work at speed. We have tried to make sure that you are getting it as close to the consultation timeline as possible. Yes, through that period we have been talking to officials about that and what the expectations can be, so they have been aware that this has been our publication timeline.

Chair: It may not always be apparent, but I am one of the greatest champions of the independent role of the Committee on Climate Change. That is why I try to hold your feet to the fire on this issue, but I am concerned that when appearing before us you now have twice said that



you are experiencing resource constraints. I wonder whether, when the Chair of this Committee comes back, we ought to ask him to write to the Department—or, in fact, to the Cabinet Office or the Treasury—to ensure that there are no resource constraints. I would contest that it is hampering the proper role of the CCC, as set out in statute in 2008, to give its advice to Parliament. Perhaps we can put that into the Chair's inbox and see if he would like to write a letter on that basis.

Q10 Dr Roz Savage: Ms Pinchbeck, your progress report was published in June, and since then there have clearly been a few changes. We have a new Prime Minister, and new Secretaries of State at both DESNZ and DEFRA. As they take up their new positions, what would be your key messages to those Secretaries of State and the Prime Minister about the work needed over the coming year to ensure that the UK is on track to meet its climate targets?

Emma Pinchbeck: I think we can start with some good news and to champion the things that have gone well. In particular, we would say that electric vehicles are still storming away. A quarter of new car sales are now EVs, which is a 41% increase in electric vehicles on the roads in the financial year to April 2026. Renewable generation was at record levels. In the recent auction we got 8.4 GW through. Peatland restoration is up 24% year on year as well, so there are some very good indicators. We continue to progress, with emissions falling again and emissions in the UK having halved since the Climate Change Act 2008.

Given that we have also had more disruption in the middle east, we would also point to the findings we have in the back of this year's progress report on household costs. This new Government have talked about the cost of living and the need to ease costs for households, and we found that with an electric vehicle, a heat pump, solar panels and a time-of-use tariff, households would save around £1,200 a year relative to staying on fossil fuel technologies, a gas boiler and an internal combustion engine vehicle with post-Iran prices.

We are also seeing the risk of being dependent on volatile fossil fuels. This time we talked about the fact that the price spike following the Iran war meant that households with a gas boiler and a petrol car were almost four times more exposed to that price spike than those with heat pumps and electric vehicles—more so in rural areas, as we have seen.

If you look at the indicators for some of the electric technologies improving, and at the global environment and energy costs, there is a very good incentive for this Government, particularly with these challenges, to make progress on decarbonisation. What do they need to do about it? Well, more electrification. Under the previous Administration we saw a big focus on the power sector. We said to you last year—and we would say it again—that cheap electricity is very important, but also that cheap electricity should enable people to get electric technologies in their homes to benefit from these savings. We would like to see electric vehicles and more on heat pumps.



Lastly, the Government have published their carbon budget growth and delivery plan. That is good; they now have a plan out to the end of the sixth carbon budget period. What we can see when we look through their plans is that they are at risk of missing not the legally binding carbon budgets, but the nationally determined contributions—the commitment they have made to the international community—if they do not speed up electrification. In particular, their current set of policies does not meet the 2030 nationally determined contribution and just meets the sixth carbon budget. Within that, we would say about 60% of the policies they have are either credible or carry only a few risks. In particular, I would like to highlight that they are very dependent on removals. They have gone for an early technology-led approach, which is slightly different from our advice. That also carries some risks.

Q11 Dr Roz Savage: I have a brief follow-up question. We know that nature can be one of our greatest allies in mitigating climate change and its impacts. I am not sure that I heard a key message there for the Secretary of State at DEFRA about what you would ask that Department to do.

Emma Pinchbeck: We have given DEFRA a significant amount of advice over the course of the summer, with advice we have just put out on climate change risk. In respect of the mitigation advice, we need to see a few things happening. In particular, tree-planting rates have fallen. We have very good news on peatland restoration—largely, the lion's share of that is being carried on up in Scotland. Similarly, tree-planting rates have fallen about 25% compared with the 2025 progress report, and a lot of that is because of a change in Scottish policy—over half of our tree planting is done in Scotland. To get to where the Government want to go in their own strategies, they will need to very significantly increase tree planting. I think we will come on to talk about agriculture, but there is a difference in the Government's carbon budget growth and delivery plan in what they are doing on agriculture compared with our advice.

In good news, since we last came and gave evidence, we have had the publication of the land use framework and the sustainable farming roadmap. We have incentives and policies in place now to start putting some investment into the farming sector to do some of these measures, so there has been a significant amount of change. We need more of that, as well as a real focus on tree planting.

Q12 Sojan Joseph: Emma, you explained that the conditions are very good for moving to more of an electricity model, and your long-standing recommendation is to make electricity cheaper. As we know, on his first day in office the Prime Minister cut VAT for electricity. What impact will that announcement have and what further message might be needed?

Emma Pinchbeck: It will have some impact on bills. In its latest price cap statement, Ofgem's estimate was that the temporary removal of VAT meant that bills would have gone up around £45 more without the reduction for households on variable tariffs relative to not doing it.



However, because wholesale prices have increased, the impact is not as big as it could have been. Gas bills have gone up around 8%. The metric that is very important for us when thinking about electrification is the gap between electricity prices and gas prices. The combination of removing some of the levies under the previous Administration and the change to VAT means the ratio today is around 3.3:1. That means the cost of electricity is around three times the cost of gas. We need to get it below that to make the benefits of more efficient technologies pay off for people.

Our proposal in our seventh carbon budget advice to Government was to remove all the levies from bills and put them either into tax or on to gas. It is up to the Government how they do that. If they remove the remaining renewables obligations, feed-in tariffs, warm homes discounts and legacy CfD costs from electricity, the gap between electricity and gas prices does come down to around 3:1. If you move it on to tax, obviously because you are rebalancing, that ratio comes down to under 3—but with all of the additional implications of moving things on to gas. It is a start. It is not nothing, but it does not get to the metric we are looking at, which is speeding up electrification.

Another thing to note is while we focus on the electricity costs, which are a huge barrier across the economy at a time when we want businesses to grow and households to have lower bills, we still need action on the up-front costs of low-carbon technologies, and that means both private sector financing and Government grants.

Q13 Sojan Joseph: Dr Devane, there has been a lot of discussion in recent months about more drilling in the North sea, and since the new Prime Minister has been in office, about his commitment to honouring the existing licences. There have been lots of conversations about Rosebank and Jackdaw. Have you made any assessment of the economic and emission implications of allowing new drilling for oil and gas in the North sea?

Dr Devane: I will ask Emma to take this, if that is all right.

Emma Pinchbeck: Thank you for that!

An often misunderstood technical point—and welcome to new Committee members, by the way— is that North sea oil and gas emissions are not fully captured in the carbon budgets. That is because we look at any production emissions within what is considered the UK's territorial border—things like the methane from flaring or the emissions on the rigs themselves, but not the full impact of North sea oil and gas. There is no relationship between the net zero target and the North sea, despite how it is regularly reported. The committee does not have a view on the North sea per se, unless we are specifically asked for it in the way that we have been specifically asked about Heathrow, outside of normal advice. We have not been asked for that for years, although there is a standing position. What we have said about the North sea in recent reports more



generally is that the reserves are already in steep decline, so even with the new fields, production is expected to fall by about 93% by 2050. That means that the basin needs a transition plan, and we need to be thinking about jobs and skills in Aberdeen and other parts of the country that are dependent on that industry, regardless of new fields.

In terms of this progress report and the Government's carbon budget growth and delivery plan, they have existing licences in their assessment for the pathway and the emissions from those where they apply to territorial emissions. They do not have anything new, but that means that Jackdaw and Rosebank are in for how they have considered the carbon budget growth and delivery plan.

I have another couple of points, just putting on the hat from my old job the energy sector. The fastest way to reduce price exposure, based on learning from the 2022 energy crisis and the more recent crisis with Iran, is that we have very few levers on the supply side, even with the North sea, because oil and gas is an international market. If you are looking to fix bills or supply, the North sea is not a good answer to those questions. Instead, the fastest thing you can do to reduce our exposure to these costs is to electrify the economy and reduce our gas demand and the amount of time that gas sets our price in the electricity markets. We estimated that faster electrification between now and 2030, relative to the Government's current plans, would save 89 million barrels of oil and about 1.5 therms of gas. That is worth about £8 billion. Our answer to a lot of the questions facing the Government on energy security and cost is to focus on reducing demand rather than increasing supply.

Lastly, fossil fuel price spikes have been the cause of every single recession since the 1970s, other than the 2008 financial crash. One more spike in the region of the 2022 price spike would be more than the net additional costs of the entire transition to net zero altogether. Volatility increasing is something to think about when you are thinking about our dependency on fossil fuels as well as the long-run wholesale price. That is what we have said.

Q14 **Adrian Ramsay:** Thank you both for being here. Emma, you have already highlighted that the Government's approach to meeting the seventh carbon budget relies more on technology and less on behaviour change compared with the CCC's pathway. What risks do you think that creates in terms of delivery?

Emma Pinchbeck: About a third of their pathway does have the adoption of household choices, in the same way as we did in our advice—things like adopting an electric vehicle when your internal combustion vehicle fails or getting a heat pump when your boiler is at the end of its life. They have gone slightly slower than us in aviation demand—they predict higher aviation demand—and the uptake of EVs and heat pumps in the early years, so their trajectory is different from ours. They have slightly less modal shift as well. They have about 17% reduction in total emissions between 2031 and 2037 coming from removals technologies.



That is not unreasonable, and obviously the thing that we say to you every time is that the UK Government and Governments across the UK often have different pathways from the CCC advice. That is the job of policymakers. It is not unreasonable to use technology approaches. You can make them less risky, as we do, by doing things like only including technologies that are at technology readiness level 6 and above—basically at scale in the market—and are at demonstration level at least and could be commercialised.

The other thing that they do is calculate emissions savings from wider factors, such as using AI and getting efficiency savings from there, and behaviour change—you get a solar panel and then you are more likely to get an electric vehicle. They have made assumptions about that. Again, that is also not unreasonable. That is a perfectly valid methodological approach and set of assumptions. What they need to do but have not done is consider the downsides of some of those changes as well. For example, they have included AI efficiencies but not necessarily the downsides of potential emissions from AI. We would say that we need to do both.

Our recommendations would be clear pathways for each sector. There are technology assumptions, like gateways for progress and indicators, so that we can monitor them and so that they can monitor them and change course if they are not delivering. Secondly, on contingencies, if you are going to go for a riskier approach in your main pathway, you need to have contingencies if it does not come off. That would include increased electrification, potentially more modal shift and potentially more action on waste and recycling. That gets you to the 2030 NDC as well. There is nothing wrong with the approach that they have taken and it being different from ours, but it will need careful monitoring, and they will need a good framework around it and contingencies if that tech does not come through.

Q15 **Adrian Ramsay:** The Committee heard during our carbon budget 7 inquiry that delaying investment in decarbonisation can increase long-term costs for households, businesses and public finances. Do you think that the Government have adequately taken this into account?

Emma Pinchbeck: If you have access to these technologies today, right now, given the state of the global energy market and the uncertainty in geopolitics, you will be saving money if, for example, you have a time-of-use tariff. That is the case for many households, particularly if you are living in a rural household and are dependent on oil. Delaying introducing these technologies or slowing down their adoption is effectively preventing some households from accessing savings right now. We produced some supplementary analysis to the seventh carbon budget in March, partly because of feedback from parliamentarians. We tested things such as slower technology rollout or more expensive technology assumptions on some of the key technology in our pathways. Even so, we found that for every £1 spent on net zero, the benefits outweigh that £1 by around 2.2 to 4.1, so you get £2 to £4 back for every £1 you spend.



HOUSE OF COMMONS

The slower you are delivering the technologies, fairly obviously you are not getting those benefits back.

On the climate impacts in the pathways, some of the things we have seen this summer, such as the improvements to air quality, the savings that the economy makes from rolling out net zero technologies, start to come through even before 2040, which is when we said costs flip to savings in the standard model. Yes, in that context, delaying this is delaying those benefits coming through. I think it is very important not just to carry on with electrification in particular, but to go faster than the Government are currently saying they want in the carbon budget growth and delivery plan.

Q16 **Adrian Ramsay:** One final question from me: which Departments would you say are performing best at meeting the emissions reductions and which are lagging behind? I am sure you could say lots on that, but your headlines on that would be very helpful.

Emma Pinchbeck: We can be mean and positive about the same Department in one go. If you just look at emissions reduction, straightforwardly, the power sector has been a success story in the UK. Emissions are 82% lower than in 2008. That is an extraordinary thing that has happened in the time that I have been working in energy. However, the UK is also one of the laggards in Europe on heat pump installations. As European heat pump markets have grown 10% year on year since Ukraine, our heat pump installations fell from a 56% increase between 2024 and 2025 to only a 7% increase between 2025 and 2026 because of changes to the UK scheme. That is where we are really behind when you look at similar economies and what they are doing and where the drivers are. Both of those things are the responsibility of DESNZ. There has been a lot of focus on the supply side of energy. We need to focus a lot more on demand.

Q17 **Adrian Ramsay:** Do any other Departments stand out either as doing very well or being a long way behind?

Emma Pinchbeck: Both are our sponsoring Departments, so it is fair to be mean to both of them, but DEFRA equally has a good story to tell on peatland this year, but not a good story to tell on woodland, for example. We have progress on some of the policies needed for rural communities and farmers in the land use framework and the sustainable farming incentives, but the funding is only there until 2030; they are not long term. Again, a similar story—these are two key Departments for a lot of the change we need to see happen.

We talked a bit about DfT at the beginning but let us not talk about them more. I think DHCLG is often overlooked in some of this when you think about the lack of a scheme to decarbonise, or indeed to cool, public sector buildings. You have all experienced Parliament this summer. That is another Department that can be critical in things such as planning reform and building measures, so perhaps we could highlight them.



Q18 Chair: Before we leave CB7, can I ask you about the grid and grid capacity? In your advice on CB7, you said that wherever possible, grid capacity should be increased to a level sufficient to avoid having to upgrade the capacity again prior to 2050. Is there a tension between the Government wanting to go as fast as possible with their 2030 clean power mission and the need to ensure that grid upgrades are future-proofed in the way that you suggested? How do you think that is going?

Emma Pinchbeck: This is possibly a question in two parts. One is what we think is going to happen with demand. Is this an implicit datacentre question or not? I think in terms of demand, when we put together the advice for the seventh carbon budget, we assumed growth in demand, including in high-intensity industries coming forward—direct air carbon capture and storage, and low-carbon technologies with high energy demand—but also an increase in the number of datacentres and other high-energy intensive technologies. That is in our grid assumptions as well as the power generation needed to meet that demand.

As for the relationship between networks and generation, we highlighted in the report that there had been an increase in wind curtailment between 2024 and 2025, and 2025 and 2026. Some of that is because we have built out the fleet and the network is not there yet. On the long-run look for the grid and for integrating new energy generation, I do not think there is a change in our advice on the need to get the network built, but also, importantly, to invest in flexible capacity and use it.

In the progress report, we also highlight that we are concerned, for example, about whether or not batteries are being properly utilised in the system where we have them already, and that we are not building enough storage technology alongside the network build-out. Does that help?

Q19 Chair: Yes. It touches on an area that my colleague, Chris Hinchliff, wanted to come in on, so I will bring him in shortly. I was looking more at the connections not simply associated with datacentres, because I do not feel that your CB7 advice was simply directed about datacentres.

Emma Pinchbeck: No. I think in general we need grid connections to be as quick as possible and we are perennially worried about needing to have grid connections available. In particular, we highlight that for industry and industrial electrification.

Q20 Chair: My question though was whether, in the rush for speed, we are sacrificing future-proofing; we are trying to meet the 2030 mission, and yet after 2030 we will have to upgrade them again. The advice that you gave in CB7 was that you were concerned about that, so I just wanted to tease out those concerns and see whether you thought the Government were culpable on that score.

Emma Pinchbeck: I think our advice to Government on the power sector was for a slightly different trajectory, which did look at network and generation together. That said, there have been real efforts made on



the network connection side. They still need to go faster on the network side—we would say that based on what we can see in terms of the management of things such as constraint. Our “A Well-Adapted UK” report highlighted that the grid and critical infrastructure generally need to be built for a world of 2°, rather than the conditions of today.

On the network side, a lot is about line reinforcement rather than the connections, but yes, we have advised the networks and DESNZ to be cognisant of that changing world. We have also included increased demand in the forecast and think it is very necessary that that is considered alongside the build-out. These are the same messages—that you have to speed up grid connection—but alongside grid connection, resilience, lots of forms of storage and using that flexibility when you have it. It is not just about hard infrastructure; it is also about batteries and flex technologies.

Chris Hinchliff: Ms Pinchbeck, since you referred to datacentres there, I will come in with a few questions about that.

Emma Pinchbeck: I did that to myself!

Q21 **Chris Hinchliff:** To begin with the question about electricity grid connection, you mentioned that you have included that to some extent in your modelling, but I would be interested to know to what extent the Climate Change Committee is at this point in time confident that your analysis has taken account of the sheer scale of acceleration. From the latest figures, I think Ofgem is looking at demand for connections of around 80 GW of capacity specifically for datacentres. That has increased very substantially, up from 50 GW just in February, and for context for our listeners, UK peak winter electricity demand over winter 2025-26 was 45 GW. We are talking about absolutely astonishing amounts of electricity being demanded by datacentres. The largest AI-related schemes use as much electricity as roughly 2 million homes. Are you worried about this crowding out access to renewable electricity for other purposes across society?

Emma Pinchbeck: We took National Grid Electricity Transmission’s top estimate of what it thought would come forward on datacentres and included that, plus some headroom, because rather than just look at datacentres, we looked at an increase in demand, so it is not true to say it is a datacentre number, but there is a number for an increase in demand. It is a pretty chunky number, so in that sense I am confident that we have advised on an energy system of about the right dimensions for future demand.

There is a separate set of questions underneath what you are asking around things like access to grid connections. In the “A Well-Adapted UK” report—the other part of the job—we highlighted water scarcity, for example, and needing to think about where we locate critical infrastructure, including datacentres, for access to water and energy as the climate changes. Some of these questions are about Government



policy choices. It is not for our committee to say that a datacentre should be behind a wind farm, unless it is going to very significantly change the ability to meet the carbon budgets, but it is fairly obvious that we need to think about this technology, how we bring it on and in what way. DESNZ should be thinking about that.

Lastly, it is still quite early stages in the market to see what does come forward. There are lessons that we can learn from places such as the US about how to do the build-out well and some of the risks involved. Again, I would say that that is policymakers' jobs more than ours. Without committing to anything, we obviously have things like AI in the scope of the work for the next work cycle for the CCC, so we will keep that under review.

Q22 **Chris Hinchliff:** Yes, it is very welcome to hear that that is under review. I suppose what was underlying my question was that given this extreme acceleration of demand from datacentres, it seems to me—and we will come on to industry later in this session—that there is a question of the amount of infrastructure on renewables we are going to need, whether we are developing that and whether we expect to develop that at the right scale in order to ensure that we have renewables for all these new datacentres while also electrifying our other industries, which we absolutely need as well.

Since we are on the question of datacentres, I just also wanted to ask for your committee's opinions on the risks to our carbon budgets associated with the fact that many of these datacentres are not waiting for their grid connections, they are not waiting to have access to renewable electricity. They are building these datacentres out with on-site fossil fuel power generation. I am sure you will be aware of the recent analysis that just two planned datacentres in England will exceed all the UK emissions of fossil fuel company ExxonMobil. It seems to me like there is a huge risk that that approach to delivering datacentres in our country could completely blow our carbon budgets if we are not properly prepared for it. I would be interested in your thoughts on that.

Emma Pinchbeck: There is a set of hypotheticals there, some of which would hypothetically fall in scope for us, including whether a significant amount of fossil fuel build-out would show up in the inventory we report on at the progress reports. It would certainly then become something we looked at in our advice to Government on the eighth carbon budget.

Outside that, how do you build datacentres, how do you make sure they have the energy generation they will need, how do you make sure they have the water resources they need, what are the trade-offs between that and other industries? Yes, I am sure the committee has views on that, particularly if it slows down the development of low-carbon technologies, but ultimately these are decisions for Government because it is about the interrelationship of particular policies, your planning framework, your industrial strategy and your growth industries. We will tell Government and all of you to hold them to account on what their



decisions will do to emissions and any risks of developing technologies in the economy. Suffice it to say, I think it is a sector moving at speed. We can see what is happening in other markets. We are thinking about it in terms of how we frame our analysis, and I think policymakers should absolutely be thinking about it.

Chris Hinchliff: Can I push ever so slightly one last time?

Emma Pinchbeck: Why not? Again, I did this to myself.

Q23 **Chris Hinchliff:** Do you have any further concerns that you think this Committee and MPs more widely should be aware of and taking into account in our thinking about risks to our net zero pathway if there is widespread datacentre build-out with many gigawatts-worth of fossil fuel combustion on those sites?

Emma Pinchbeck: I appreciate you pushing me, but no. That is partly because the committee has not formed a view on those things, and we speak for it. We are looking at it, as well as other emerging issues in the economy, so ask us again in future.

Chris Hinchliff: I certainly will.

Emma Pinchbeck: Okay, thank you.

Q24 **Chair:** In your progress report in June—and again, I am afraid you did this to yourself by talking about batteries—you said, “A new Connections Accelerator Service to speed up grid connection timelines for major investment projects could help but is yet to get up and running”. The report had a very long title, the “Accelerating electricity network connections for strategy demand consultation”—that closed in April. There was no summary of responses published within the 12 weeks. What is the risk to our clean power 2030 mission if Government do not respond to the consultation, let alone publish the responses, by the end of this year?

Emma Pinchbeck: Questions on the risk of the 2030 clean power mission are for Government because it is their policy, rather than ours. However, it is important in the carbon budget growth and delivery plan that they do meet that objective and I think overperform on it, because that is one of the things they are assuming they will overperform on in order to get close to the 2030 NDC and to meet the carbon budgets, in the same way as they are going slower in other areas.

On networks, we are not going to argue with your Committee or parliamentarians if you want to put pressure on Government to accelerate network connections, the build-out of networks and flexible technologies that are required to manage the system. As we point out in the report, any delays to the network will increase costs for people, and that is not particularly helpful in a world of high energy bills. It is also not going to help speed up and connect low-carbon technologies.



Dr Devane: Can I add to that? Across a five, 10, 15-year planning horizon, there are inevitably going to be some areas of the Government's plan that go faster and some that go more slowly. One thing we have consistently recommended is that the Government put in place monitoring frameworks to make sure they are abreast of things that might be at risk of going off track and, importantly, contingency plans to identify what they can do to mitigate that.

Q25 **Chair:** And have they?

Dr Devane: As far as we have seen publicly, no.

Chair: Okay. That is another point we could make.

Q26 **Sammy Wilson:** Chair, could I just ask one question on what was said a moment ago? Is it not the case that the faster we build out the network, the more major the costs are going to be on consumers, and therefore the more we are going to put up prices for consumers at a time when we are already concerned about prices? You are saying that you want people to use more electricity, but building out the grid much more quickly is going to deter the use of electricity because it becomes more expensive quickly.

Emma Pinchbeck: Network costs are funded from the bill. We saw in the April price rise that network costs were a significant part of the rise in bills for the first time, alongside the increase in the wholesale cost. In our advice to you when we say a renewables-led system is cheaper for households, we are factoring that network cost into our analysis, so it is still a good idea to do this transition. What is very important is making sure that we are thoughtful about how we fund some of these costs from consumers, from households and from the taxpayer. How you do that is outside the CCC's brief.

Our job is to tell you what the whole system cost looks like. What we are saying with the network is that, by building the network, you get all of the advantages of these efficient technologies on your system. If you do not have the network for them, then you cannot utilise them efficiently, but also if you do not have the network connections, particularly for industry or for things like electric vehicle charge points, you are not getting other parts of the economy able to use that electricity either and that has a knock-on effect on the efficiency of your system.

Just to give you an example of how much more efficient an electrified system could be, we estimated in the seventh carbon budget that a net zero energy system and an electrified economy would save about £30 billion a year of wasted energy. That is just energy that we are effectively throwing at the wall because of the way we move it around the system. If you build the network, if you use these efficient technologies, if people can use them in businesses and households, you save money, but if you do not do that transition well, then you are not maximising that efficiency.



HOUSE OF COMMONS

Also, we are in the period where you do have to build out the system and there are costs associated with that, which we highlight in our advice. One of the things we say is that the up-front cost in the investment needs real thinking about, and that is a policymaker job.

Dr Devane: During that period, the faster we can electrify end uses, the more users there are to spread those costs across, so the individual impacts will be smaller.

Emma Pinchbeck: Yes.

Q27 **Martin Rhodes:** In your earlier comments you mentioned good progress. One of the areas of good progress was around the transition to electric vehicles, obviously underpinned by the mandate. If that mandate were to be reviewed, if it were to be weakened, would that undermine progress towards meeting the targets? Are there ways in which it could be changed that would not have that impact?

Dr Devane: If it was to be significantly weakened, then very likely yes, it would undermine the likelihood of delivering the 2030 NDC. You can just look at the Government's delivery plan. The transition to EVs is the biggest measure in terms of emissions reduction in that pathway. It is about a fifth of total emissions reduction between now and 2030. On top of that, as Emma said earlier, the CBGDP pathway already does not meet the 2030 NDC, and going faster on EVs is something we highlighted in the progress report as being one of the key areas the Government could look to make up this shortfall. That was—

Chair: For listeners, CBGDP is the carbon budget growth and delivery plan. If you can hash out the acronyms, please do, because people listening often think, "This is just gobbledegook."

Dr Devane: Understood. I will try to not trip over it too much. The carbon budget growth and delivery plan—the Government's pathway. Yes, our advice was that going faster on electric vehicles could be one key way of making up that shortfall. That was based on looking at the growth rates seen in the market for EVs in other countries, and also, in our view, the state of the UK market, which we think is quite positive on this point.

Going the other way instead, weakening the mandate, in our view would instead seriously undermine the prospect of hitting the 2030 NDC. That is a problem because the UK has been seen as a sort of leader on climate action. That is both because we have been good at putting policy frameworks and targets in place, and because we have been good at delivery. Emma talked about an 82% reduction in our power sector emissions since 2008. We have completely phased out coal from our power generation sector. Failing to deliver on the 2030 NDC—which, I remind you, is the first target that is set in line with the 2050 net zero commitment—would send a troubling message about our ability to deliver against those targets. What is more, it would set us in a place where it



would require more action—potentially more difficult action—in the 2030s and 2040s.

There are some changes to the mandate that could be beneficial. Notably, currently the way the mandate is designed effectively over-rewards plug-in hybrid vehicles, which deliver much fewer emissions savings than they are credited for. We would be very keen for that to be looked at and to base that on the current up-to-date evidence, where possible.

On the wider EV landscape, I would like to talk briefly about what the impact would be of risking slowing the transition. As you said, it is one of the areas we flagged as showing relatively good progress and relatively credible policy plans. Weakening that mandate risks undermining the progress we have seen to date; it risks sending mixed messages to consumers at a time when we think consumers are getting more and more interested in these technologies, driven by high fossil fuel prices. Last year, nearly one in four new car sales was electric. In the last couple of months, we have seen that reach about 30% in the UK new car market. We have more than 2 million EVs on the road now, so they are a material contribution. We are beginning to see them measurably impact our emissions, so there is a positive story there. That positive story is only going to keep growing, unless we undermine it.

It is worth saying that all manufacturers, as we understand, complied with the ZEV mandate in 2024 and 2025, once you take account of the flexibilities that are already in the system. It is working. It is not just the Chinese manufacturers either. Take Renault, for instance. In the first half of this year, 37% of Renault's sales were fully electric vehicles. That hit over half the last couple of months. There are a number of other European and western manufacturers also tracking at or around their targets. There is a positive market story; there is a positive emissions story.

There is also a positive costs story. We set out in the progress report that the purchase price premium, the extra cost of buying an EV compared with a comparable petrol car, fell from 24% two years ago to 16% last year, so it is still substantially more expensive, but it is getting cheaper. We expect within the next two years to reach price parity, so at that point your EVs will be cheaper to buy. In fact, in some segments of the market, including much of the used-car market, they already are, as well as being significantly cheaper to run, as Emma has already highlighted. There are already big savings to be had for households. There will be even bigger savings to be had for households, and delaying the transition to EVs risks delaying those savings.

Q28 Martin Rhodes: Thinking about people's perceptions of costs, is there any evidence that the introduction of the EV excise duty is acting as a deterrent for people switching to EVs?



Dr Devane: We have not seen that so far. We have not specifically looked at those questions. We know people do not like additional hassle. One thing the committee called for in the progress report was to make sure that when that is introduced, it is introduced in as smooth a way as possible—not increasing the hassle factor associated with EVs—but we have not been able to look at data. It is complicated to understand exactly what measures have been driving or hindering uptake.

Q29 **Martin Rhodes:** Is the hassle factor geographically unequal in respect of access to charging infrastructure?

Dr Devane: Yes, on charging infrastructure, you are right that there is a substantial disparity by area. London and Scotland perform very well in deploying charging, while Northern Ireland remains significantly further behind. We know from many surveys on people's potential to adopt EVs that access to charging is a key area of concern. We do not have a regional model, so we cannot say for sure whether in particular areas this is creating a barrier, but we can say that it is certainly something worth monitoring. We know that the local outcomes framework, which local authorities are required to report against, includes public charge points per 100,000 population in each area as one of the metrics that need to be reported. Indeed, the Government's publication stats on EV charge points include quite good geographical breakdowns, so we would very much encourage them to make use of those breakdowns to monitor potential impacts on uptake.

Q30 **Martin Rhodes:** Part of the discussion we have had has been around the issue of change to the ZEV mandate and the potential weakening that might have. What measures could Government take that would help improve the uptake or increase the uptake?

Dr Devane: We have seen the introduction of the electric car grant, which is a positive step to help close that up-front price gap. Making electricity cheaper is fundamental across a lot of our areas—Emma has already said it a number of times, and I am sure we will say it again before the end of this session. It is particularly relevant for those who cannot charge at home. If you can charge at home, which is about two thirds of households, we reckon you can make about £450 to £1,600 per year, depending on your usage profile, in running cost savings. If you cannot charge at home, our assessment does not find any saving at all.

EVs are a much more efficient technology, three or four times more efficient in converting energy to useful energy—motion. We need to see action that makes sure those savings are available to everyone who chooses to get an EV. That includes making electricity cheaper. Crucially, it also includes the Government's cost of charging review, which is ongoing. We would encourage them to look at measures that could increase the availability of the cheapest, lowest power on-street charges and increase the availability of discounted and smart tariffs within those public charge points.



If you look at the growth in EV chargers, that is a positive story; it is about 20% up in the last year. Slightly troublingly, however, it is pivoting more and more towards the higher-powered chargers, which tend to be the more expensive ones, and the slowest growth segment is the lowest power on-street chargers. We would like to see more of those so that people can plug their car in near to where they live overnight and take benefit from the cheaper overnight rates of electricity.

There are also measures such as charging subscriptions—if you have a charge point you can use regularly—and charge-sharing. There are cross-pavement channels, which we were heartened to see the Government including in permitted development earlier this year. Finally, there is VAT, which is 20% on public charging compared with 5% in normal times, and 0% currently on domestic electricity. We have said in the progress report that the cost of charging review should consider that, and consider how it can reduce that rate, while also taking action to make sure that any reductions are passed on, much the same as they do when they deliver cuts to fuel duty.

Martin Rhodes: Thank you. I am picking up the general message that the reduction of the cost and price of electricity is key to this.

Q31 **Sammy Wilson:** It is significant that we are having this discussion while in the Chamber there is discussion on 4,000 redundancies at Jaguar Land Rover. You have probably painted a glossier picture about the transition to electric vehicles than is the reality. You are quite right that manufacturers have been able to comply with the mandate to date, but only at the cost of heavily discounting cars to avoid the fines they would have had if they had not met the quota. The last figure given to us at the all-party parliamentary group was that this has cost manufacturers in the United Kingdom £12 billion to date, which has, of course, resulted in less money for investment and so on, so there has been a knock-on effect. I suppose the other knock-on effect has been that some of that—one in four sales of vehicles—has been due to the high penetration of our domestic market now by Chinese manufacturers, which, again, has had a knock-on effect. How long can we go on with this very, very harsh mandate without significantly damaging another major industry in our economy?

Dr Devane: Manufacturers are discounting EVs—you are right—but they are also heavily discounting combustion engine vehicles. You are right that part of that is that they are under pressure from increasing new entrants to the market, which puts pressure on through increasing competition. Ultimately, that is good news for consumers—more competition is pushing more efficiencies, and we see manufacturers out there that are performing well. We talked about the Renault statistics; Renault manufactured the car of the year in the Renault 5 electric vehicle. It is performing well in terms of sales statistics, and Renault has said it is making strong profit margins on it, so it is possible. You are



HOUSE OF COMMONS

completely right that we are in a phase of transition in the sector, and there are doubtless pressures which need to be mitigated.

I would add a caveat: the mandate does not apply to vehicles manufactured in the UK; it applies to vehicles sold in the UK, and over three-quarters of the vehicles we manufacture here are exported. The biggest export market is the EU, and the EU has effective targets requiring 90% of vehicles by 2035 to be zero-emission. We are setting up our industries to contribute to those markets only if we set them up to produce electric vehicles.

- Q32 **Sammy Wilson:** The industry cannot keep sustaining these kinds of subsidies in order to meet the targets. The other aspect you have not mentioned, and one point we have made, is that if we introduce vehicle excise duty on electric cars too quickly, it will have a significant impact. I think the figure given was that, under the proposals, about 440,000 fewer cars would be purchased, and the level of vehicle excise duty will not in any way cover the fall in duty that the Government currently obtain from combustion engine vehicles. I think the loss is about £12 billion between now and the early 2030s, from £24 billion to £12 billion.

If the Government were to seek to recover—especially in these times of tight fiscal circumstances—the lost duty on fuel from fewer combustion engine vehicles being sold, would electric vehicles become attractive at all to individuals? How do you think the Government can absorb the additional costs we are talking about? You have mentioned that to deliver this we need to spend more money on infrastructure and on strengthening the grid, and now we find that the Government are going to have to find ways of replacing lost revenue.

Dr Devane: I think Emma wants to come in, but briefly, yes, they would still be attractive. EVs are so much more efficient that there are still savings, even if you take away the fuel duty, provided you can charge at home. Even if you assume that a like-for-like amount of fuel duty is applied, you would still be saving on running costs from switching to an EV. The current proposed level of electric vehicle excise duty is less than half the amount per mile that is levied in fuel duty, so it still leads to significant savings. It does not undermine the case for switching to an EV at all.

- Q33 **Sammy Wilson:** Does it leave a fiscal deficit for the Government then?

Dr Devane: They could look to resolve that through other means, or through increasing eVED in future, once we have reached a point of price parity and mass-market uptake.

Emma Pinchbeck: I want to address bluntly some of the points on costs. It is important to say that the JLR redundancies, as I understand them, are partly to do with the cyber-security attack rather than the ZEV mandate. As Eoin has outlined, a lot of our manufactured cars are not for this market or caught in the ZEV mandate—they are for other markets, although those other markets do also have targets for electric vehicles. If



HOUSE OF COMMONS

you are manufacturing cars, you are faced with competing with manufacturers that have worked out how to make a cheap electric vehicle, and the second they did the electric vehicle became cheaper to run than the internal combustion engine. People will buy them because they are cheaper cars. As policymakers, you therefore have to incentivise your industry to manufacture cheap cars for consumers if you want your manufacturers to be able to sell to them.

If the industry is arguing that the ZEV mandate is the issue, I would bet they will still face competitors in other countries selling cheap cars to our consumers. Honestly, as policymakers, are you suggesting that the solution is to put up the price of driving for people? Because that is what the suggestion amounts to. The manufacturing sector in this country is brilliant; we need to keep our automotive sector. We think the ZEV mandate is part of that, because it helps encourage manufacturers to make that transition so they can compete with European competitors. In our previous advice to Government, we suggested things like flexibilities to try to ease that process for manufacturers. We have also suggested we need to get demand-side signals going, so manufacturers have a market to sell their cars into.

There is no question that the future of automotive is electric; the only question for policymakers is how do you make sure that transition is smooth? People are going to buy cheap cars, and I do not have a problem with people having cheap cars when there is a cost of living crisis on. That is the other side of the equation: are you proposing to put extra costs on those cheap cars, so people cannot buy them, to give more expensive fossil fuel vehicles a better run at the market?

Q34 Sammy Wilson: The fossil fuel vehicles, of course, in many instances are cheaper than the electric vehicles. You have said that. There is a price difference at present, and that is why people—

Emma Pinchbeck: Not in two years' time. If you are preparing an industry that takes five or 10 years to adjust—I used to work in one—we are saying that all the indicators, globally and in the UK, are such that we think the electrification of transport is the future. How we respond to that with our manufacturing base is a question that sits outside the Climate Change Committee's remit, but it is important. Our job is to tell you that that is the likely outcome in the surface transport sector, and we will have emissions reduction.

Q35 Sarah Gibson: You have already highlighted quite clearly that making electricity cheaper is probably one of the single things that would accelerate quite a lot of the roll-out of the things we are talking about. I wanted to ask you specifically about areas around buildings and heat pump installations. Two things come to mind very quickly: the roll-out of the warm homes plan, and the fact that 4 million homes in the UK failed the decent homes standard in 2024—many due to poor heating systems.

arm homes plan funding is due to replace the ECO4 system, which we



know was not as successful as we would have liked. How do you think we can ensure the best outcomes and avoid some of the—dare I say it—botched installations we had before? I have just spent this morning submitting my submission to the consumer part of that consultation. I was slightly concerned that the technical support for the previous scheme, which was very clearly lacking throughout the industry—I am slightly leading you on this question, my apologies—still does not seem very apparent, certainly in the consultation. What are your thoughts on how we stop the same thing happening again?

Dr Devane: We see this funding as important to deliver home insulation improvements and things like that, but also because it is crucial to deliver the transition from largely gas boilers and oil boilers to low-carbon heating—mostly heat pumps—in low-income homes. As we have highlighted in the report, the UK has one of the lowest market shares of heat pump installations in Europe, and we need to see quite rapid growth in order to deliver against the targets set out in the warm homes plan. I think it requires about a 37% year-on-year growth rate in heat pump installations. We think you could actually go a bit faster than that, as set out in our seventh carbon budget evidence base.

If you look at last year—Emma has already mentioned this—the growth rate was only 7%, down from 56% the year before. The big driver of that reduction was a fall in heat pump installations in low-income homes: it went from over 21,000 in 2024 to 17,000 in 2025. Some 80% of those were installed through ECO. Over the last three years, the ECO scheme accounted for about a third of the total retrofit heat pump installation market.

We are quite concerned—and hopefully that comes out clearly in the progress report—about the lack of clarity on what the funding landscape for low-income homes to get home energy improvements, including heat pumps, looks like. We are worried that, without a replacement policy in place, and without broadening access to things like the warm homes local grants, there is a real risk that heat pump installations could fall further this year and into future years.

On your question of how it should be designed, how it should be targeted and those sorts of things, there are two answers. One is the technical answer, which is that the warm homes plan rightly takes a multi-technology focus, looking at combining heat pumps with things like solar and batteries, and so funding for any future schemes needs to align with this technology package to make sure that low-income homes are not shut out or left behind in the transition to low-carbon heating, and importantly to low-carbon heating that can actually save money on running costs.

There were obviously some major concerns about the delivery of the previous ECO package for insulation measures. We are very clear that there need to be proper protections in place for consumers, which includes making sure there are clear certification schemes, sufficient



access to people who have been through these certification schemes and are qualified, trained and registered, but also a better understanding of the steps needed to install a heat pump, because currently it is quite a complicated consumer journey, in that it both puts people off and creates the risk that people may not know what they are expecting to get, and creates risks of malpractice within the sector. We need clear understanding of the steps needed, and a proper route for escalating issues when things go wrong.

- Q36 **Sarah Gibson:** Thank you; that answers my question. To go back to the low roll-out, one of the downsides of the ECO4 system was that it penalised anyone trying to do an air-to-air heat source pump—you were not eligible for the grant if that was what you were doing. I was unable to get a grant because my system is air-to-air. The reason for air-to-air systems, as opposed to air-to-water systems, is that you bring the install price down from, say, £20,000 down to about £8,000, which is a significant reason why it has been slower, I would say, in the UK than perhaps in other parts of Europe where air-to-air was already acceptable. Given that this now includes air-to-air, do you think that is going to make it easier for low-income families to take it up, on the grounds that the installation costs are considerably lower? Should the Government be doing more to promote the fact that these installations are therefore considerably cheaper to install and less invasive than perhaps the older water-based system?

Dr Devane: You are right that everything we have looked at, including our citizens' panel for the seventh carbon budget, identified both electricity prices and up-front costs as the key barriers. We major our messaging on electricity prices because those are what can bring down the lifetime running costs, but there is also a real role for working out how we can make those up-front costs cheaper. Things like the boiler upgrade scheme grants are helpful in that regard; we have seen an uplift to that for properties with oil boilers, which is helpful, and we have also seen that extended to air-to-air heat pumps, which we think is a positive step.

There is also a wider point here, which is that air-to-air systems can be effective at providing cooling as well, which is something we highlighted in our "A Well-Adapted UK" report, particularly for vulnerable customers—this could become very important, even necessary, in some premises. I would highlight that air-to-water heat pumps can also offer cooling with the right kit, so there is a real double benefit here, as long as we get the installations right, in that moving to heat pumps can adapt as well as mitigate emissions.

There is a challenging situation at the moment in the air-to-air market, in that our understanding is that there are not yet any certified installers under the microgeneration certification scheme able to install air-to-air heat pumps in line with the requirements for the boiler upgrade scheme grant. That clearly needs to change; we understand it is likely to change



relatively soon. Once that happens, people should have access to a £2,500 grant for installing an air-to-air heat pump, plus potentially more through the low-income support schemes, which we are very supportive of.

Q37 Sarah Gibson: How can the Government make it clear that these options are available to people, and that they are in the couple-of-thousand cost range, rather than the £20,000 cost range, which is what previously ruled out low-income families?

Dr Devane: We have seen the Government bring forward public information campaigns on heat pumps recently, which we thought were very good. I think there is a possibility to do more of that, and to use it as a means to widen people's awareness of the technologies out there. There is an opportunity here in that, if you look at surveys, around a third of householders say they are open to considering installing a heat pump, which is much higher than the 2% of homes that currently have one. There is latent demand out there; we just need to make sure people are aware. The best advisers to any of us are friends and family, so the more installations that happen, the more people will have an understanding of how these technologies work and confidence that they can be installed in homes they are familiar with.

Q38 Sarah Gibson: Do you think that part of the problem is that it is reactive? People tend to think about their heating, or upgrading their heating, only when it starts to go wrong, and therefore they jump to the solution that will be quickest to install. You mentioned that we do not yet have the certified installers, so if somebody's boiler breaks down this autumn, they are not in a position to do this quickly, are they?

Dr Devane: That is absolutely a key risk. The average boiler lasts 15 years, so within a decade or so we need to be in a position where, when boilers break down, all replacements can happen quickly through some form of low-carbon heating, because no one wants to be waiting multiple weeks to receive a replacement installation.

There are actions that households and Government can take. Households need to be encouraged and supported to plan for future heating system replacement when they are undertaking renovation works, for instance. Heat pumps mostly require a hot water tank, so it is not a good idea to strip out hot water tanks to install combi boilers when they will just need to be put back in—at the very least we should be including space, or leaving space, for a future hot water tank. Likewise, if you are doing redevelopment to your home, look at your radiators, look at your piping, make sure it is suitable for future use of an air-to-water heat pump, and make sure you have space remaining for putting the outdoor unit on the back of your home—those sorts of things.

Those are the householder actions, but I think there are also things Government and industry can do to speed up the process, because what matters is being confident that you can get an installation quickly if your



boiler breaks. There are a range of non-financial barriers. The quote system is currently quite complicated; it is not just a quote for a like-for-like replacement—there are often different specifications of system, which can be quite bewildering. There is a bit of work needed for a better understanding within the sector of what a standard installation looks like, what the power specifications are, and so on, of the system a typical household should have. Then there is just broadly increasing the number of trained installers and their familiarity with installing these technologies into UK housing stock, so that those installations can happen quickly. Those feel like the key things Government should be working with industry on to streamline what is possible.

Emma Pinchbeck: May I add a couple of cheeky points, just to nail down some things that were in the progress report and to tie back to your question? As Eoin said, one of the things that is effective is people being familiar with these technologies, and we know that people in the UK are less familiar with heat pumps than they are, for example, in Europe, where take-up rates have been faster. We are seeing a good indicator in the progress report: around a quarter of new-build homes are now being built with a heat pump, which will mean people see this technology in their communities through new-build homes.

However, if you wanted a role for Government in showing leadership on this technology, there is currently no dedicated decarbonisation scheme for the public estate. If you think about the pressure on cooling in hospitals, schools, care homes and other places where there are vulnerable people, or in the buildings in Parliament, there is a real case for investing in these technologies in places where people might become familiar with them outside their home. There are two areas in the report showing where people will start to become familiar with this technology in new build, but also where we could do far more on the public estate, as politicians and policymakers, to show leadership with this technology too.

Q39 **Sarah Gibson:** Thank you. One last quick point, which is to do with a fact that you have already highlighted, is that high price of electricity means that the savings that come from having an air-source heat pump actually partly depend on also having solar panels and batteries and various other things. One of the larger housing associations I was talking to recently highlighted to me that they have an issue where the housing stock they possess is partly effectively mortgaged, due to the way they finance themselves, and that those lenders were not happy for them to have solar panels on the roofs of the houses they owned. I wondered whether you had come across this as an issue, where people are unable to take up technologies because of lending constraints.

Dr Devane: Not specifically on lending constraints, but we know that not all homes are going to be suitable either for solar panels, for similar reasons to those you highlighted, or for flexible energy tariffs, for reasons of levels of insulation or thermal inefficiency leading to them not being able to switch heat consumption to different times. That is essentially



why we think making electricity cheaper is the key recommendation, because by doing that we can help get to a place where households are able to make a saving on their bills, whether or not they can get those additional technologies. Doing that requires getting the ratio that Emma talked about earlier down into the range of two to three, rather than the current three and a half or so.

Emma Pinchbeck: It is possible that the analysts might have come across that example, but I would be interested in it. I have come across similar, but much earlier in my career, when I was doing more of this kind of work in the field.

Sarah Gibson: It seems to be an issue with housing associations specifically, not with private ownership. I will send you the details.

Dr Devane: Please do.

Emma Pinchbeck: Interesting. Please do.

Sarah Gibson: I note that we finished this set of questions with the same point we did with my colleagues, which is that the price of electricity has to come down for most of this to work. Thank you very much.

Dr Devane: I told you we would mention it again.

Q40 **Manuela Perteghella:** I will also start by looking at industry. UK industrial electricity prices remain very, very high. Your report states that there is no evidence that electricity price discounts to date have led to increased electrification of industry. Do the Government just need to go further on this, or should they look at alternative policy options?

Emma Pinchbeck: It is a similar story to the one we have given you through the whole session. I was trying to think of a way to say something different, but regrettably, we will say the same thing: yes, there could still be more action on electricity prices. That would mean looking at reducing electricity for every user, in the same way as in the previous segment we were talking about the fact that if you give people solar, a battery, a flexible tariff and a heat pump, they will make savings, or you can make electricity cheap for all households. In either case, you are trying to achieve cheap electricity being supplied to the household.

What the Government have done with the supercharger discounts is bring down the ratio of electricity to gas prices for a group of companies. For the initial 500 or so, when we were doing the progress report we said we would get the ratio between electricity and gas down from around four to one, to two to one, so that is around the level we said is necessary to get the savings from adopting electric technologies. For another 250, 300 or so companies, they get a ratio of around 3.1:1—again, good, but not quite close enough to get the real benefits of some of the efficient electrification. More action should be taken so that everyone can benefit—more than just those 500 companies.



However, even with action on electricity prices, you need to have the commercial case for electrification in place, which means a mix of helping companies with the up-front capital cost of investment, just as we need to help people access low-carbon technologies at household level. That means supporting them with investment early. The Government have scrapped the industrial transformation scheme, for example, which in part was designed to do that for our industries. It means having a long-term industrial strategy for key industries. In the progress report this time we highlight the impact of Port Talbot on emissions, but in the previous progress report we said that turning off key industries with no plan for how you are going to electrify them, so that they turn off and then turn back on again—as happened at Port Talbot—is not good industrial strategy. You need long-term planning in place for key industries in key parts of the country, you need grid connections—as we talked about earlier—and you need skills in place. It is not just about cheap electricity alone. That is a huge enabler for businesses doing a business plan, but you also need the wider commercial framework.

Lastly, on cheap electricity, in the long run, it is important to say that the transformation of the energy system to a more net zero energy system does result in lower long-term energy prices. This is about how you spread the cost of the investment in that future system; make sure that our businesses, manufacturing sectors and households can get the benefit of these technologies early; think about how we are going to pay for them; and also make sure we get the cost down right now, as we are asking people to adopt these technologies, rather than waiting for the natural lowering of prices over time.

Q41 **Manuela Perteghella:** Imported emissions now account for more than half of the UK's total carbon footprint. Are we right to be concerned about the impact this might have on industrial capability and associated jobs?

Emma Pinchbeck: There are two parts of the question. One is on consumption emissions. You are right that as our territorial emissions come down, our consumption emissions become a more significant share of the issue, and that is something the committee tracks and looks at. When you look at our emissions from imports, they increased 7% between 2021 and 2022—that pandemic year—but imported emissions over time have actually changed very little since 2008 in terms of the relationship between mitigation in this country.

It is not at all clear that there is a relationship between mitigation and the offshoring of emissions and consumption emissions. For example, since the 2008 Climate Change Act was brought in, emissions in the UK are down around 50% now but manufacturing GVA has grown. It is no surprise to you that how we manufacture and what we manufacture in this country has changed—and started changing well before the 2008 Climate Change Act. We have moved towards a more services economy and high-value manufacturing. You see GVA grow but without the story of emissions reduction tied to a significant change in industry.



It is also important to say, as was mentioned earlier on automotive, that a number of our significant trading partners are also setting their own net zero targets. Some 137 countries have submitted NDCs as part of the Paris agreement. China's emissions were down for the first time last year, at 0.2%; India's emissions have grown their slowest in a decade; and US solar and battery markets are up by a third. I think we are seeing a huge international shift, and the UK is part of that, with our mitigation emissions and then also the likely relationship with our consumption emissions. If that change continues to happen globally, we will see our consumption emissions come down as manufacturing decarbonises globally.

Lastly, we highlight in all our advice and reports that, separate from the imperative to meet the carbon budgets, there is industrial strategy and there are key and strategic industries in this country that are important to particular areas of the country and to the economy more generally. As mentioned with Port Talbot, if we want to keep those industries, we need a long transition plan for them. We need to give them certainty and the investment they need up front. In particular, for our industrial clusters in the north-east, where we have our refineries, our fibreglass plants and so on, we have talked about the need to have a clear plan for the roll-out of hydrogen, carbon capture and storage, the non-electrified parts of industry as well as grid connections, electrification and up-front capital investment. That is the picture for manufacturing but as far as we can see from the evidence, this story of decarbonisation and offshoring of emissions or driving up consumption emissions is simply not fact based.

Q42 **Manuela Perteghella:** You mentioned hydrogen. In your view are the Government moving fast enough on industrial hydrogen given that no contracts have been awarded under hydrogen allocation round 2, which closed two years ago.

Emma Pinchbeck: We are concerned about the knock-on effects of not announcing these contracts, given that they have quite tight allocation rounds for the hydrogen schemes. We are expecting the next one, round 3, in 2026, and then round 4 in 2028, so the delay is concerning from that point of view. We are not clear on why there has been a delay—that is a question you should ask Government—but we do think it is very important to stick to key policies and have clear timetables for them.

Stepping back to what I said previously, we think about 60% of industrial emissions will be electrified. The remainder comes from adopting new, low-carbon fuels, of which hydrogen is a significant component, as well as then carbon capture and storage for industries such as cement. If we want to keep those industries here, the lesson over the last 15 years should be to move early on the technologies of the future, invest in them, commit to your mechanisms and get them to scale.

Q43 **Manuela Perteghella:** Is it feasible for carbon capture and storage to scale up at sufficient pace to meet the Government's carbon budget and growth delivery plan pathway? Is it feasible or are we late?



Emma Pinchbeck: Carbon capture and storage is at scale in global markets. It is in our own pathways because there are demonstrated plants and a record number of them—I think there are about 70 carbon capture and storage plants internationally now. In that regard, it is not implausible to have carbon capture and storage in the pathway—although, as I said at the beginning, they have a heavy dependency on it between the years 2031 and 2037, and that largely accommodates for going slower on behaviour, on some measures of agriculture and on electrifying heat and transport, particularly heat in the early years of the next decade.

What would you want to see to put some bones on that strategy? First, an engineered removals strategy and a clear pathway on carbon capture and storage. We also suggest that there should be more funding allocated. I think we have had just over £9 billion-worth of funding into carbon capture and storage, which is very welcome—it is good to see some of the track 1 projects moving forward. It is good to see some progress, but we need more clarity on future funding to keep the momentum going. We need clarity on the link for removals outside of the CCS clusters where they apply to aviation, because there is a significant role for removals in the aviation sector and how that interacts with the ETS. Most importantly, as we have said on other areas of risk, having clear pathways where you state what progress you expect in key milestones and delivery—so that we can track them and tell you whether progress is on track or off—is very important, meaning better monitoring and evaluation as well.

Q44 **Manuela Perteghella:** Finally, looking at risks, what risks may arise from the linkage with the EU emissions trading scheme given the proposed changes by the Commission that could make the EU scheme more lenient?

Emma Pinchbeck: The committee has not yet looked at the impact of the EU changes on the UK ETS. We have previously written to Government as they requested our advice on the ETS to suggest various ways that the UK ETS could be strengthened. We were concerned that it was insufficient as an incentive in the market. It could include stronger linkages with the EU ETS—I believe I used to say that in my last job—a higher carbon floor price, or the auction reserve price in ETS terms; and/or not increasing available allowances when new sectors are included. It is possible that that change to the EU ETS might impact our advice, but we have not yet looked at it.

Q45 **Chris Hinchliff:** To take a brief step back, for the context of this question, we have more and more analysis saying what a major national security threat the climate emergency is to this country, but this is a global problem, and where emissions occur does not ultimately matter a great deal. On the question of industry and how we measure our emissions, given that financial services and wealth asset management are one of the biggest industries in the UK economy, I would be



interested to get your thoughts and advice on whether you feel that this country is giving enough thought to our investment-based emissions. We talk quite a lot about domestic emissions and consumption emissions, but what about the emissions arising from UK wealth being invested overseas, generating wealth that is coming back here to fund our consumption but is causing overseas emissions?

Emma Pinchbeck: It is not an uninteresting question, but it sits outside the scope of the Climate Change Act, which is the scope that we work to as the advisers. We can only advise you on the territorial accounting framework in the Climate Change Act. Occasionally, when we have the resources, we get to do some stuff for interest, but I have never been asked that question before. We would be happy to hear more about it outside the Committee, but for the purposes of our advice, the territorial accounting framework is the one that we follow.

Chris Hinchliff: You can say “no” again—

Emma Pinchbeck: I said no politely!

Q46 **Chris Hinchliff:** Yes, you certainly did. But do you think it is a sufficiently interesting question that someone should be looking into it?

Emma Pinchbeck: This is a personal view—a very personal view—but for the 15 years I have been doing this, there have been really interesting questions on how we account for emissions and how we think about the global effort and the moment we are in. Pretty much all of them are interesting. Where I come down on territorial accounting—by the way, I think the common-sense thing to say to anyone listening is that we use territorial accounting because it is ultimately about national sovereignty—is that we can control the things inside our borders and we have a responsibility for them. For a Government making laws, the things in your gift to change are the ones that you should measure and be responsible for.

When you get into questions about you change consumption emissions, there are two sides to that conversation. One is a conversation with the public, and the other is a conversation with another country about what they are doing inside their own borders—the best places for doing that international diplomacy, good communication and all the questions that politicians should be taking on and thinking about. But the territorial accounting framework is the way it is because it is about the law and about what we can control. For all that there are other interesting ways of looking at this problem, when you think about the international picture and how we get stuff done, it is a pretty good system for getting stuff done.

Sarah Gibson: Following up on that point—

Emma Pinchbeck: I have done this to myself!

Q47 **Sarah Gibson:** You have, yes. There is a lot of conversation in the



regenerative design sphere, where we are talking about whole life carbon counting for the construction industry on the grounds that just looking at our energy consumption during the liveable part of a building is pointless. We need to look at whole-life carbon counting, including where the materials have come from and such like, which is clearly going outside our borders. A lot of the problems with high-carbon impact construction materials come partly from the fact that the timber has come from Canada. With that in mind, does that not fit into some of the things that Chris is talking about, where we are looking at things that are outside of our sovereign borders but accounting for them as end users in the UK?

Emma Pinchbeck: Inside the Act and the work of the committee, we track consumption emissions in Government, so you have that sense of where our emissions come from—which materials, products, industries—allowing you, as policymakers, to think about whether you want to take steps on any of those issues in trade policy or elsewhere. Carbon pricing is one way that we are thinking about doing that internationally, and we plan to bring in the carbon border adjustment mechanism, which looks at trying to align carbon prices in different countries to try to facilitate common standards on trade. There are other ways of achieving changes in consumption emissions, of course, and we should track them, but it just sits outside the territorial accounting framework.

On building construction emissions specifically, when we ask this question, we think about the emissions produced from cement, for example, which might go into building fabric or from timber. If they are produced inside the UK border, it is just that they turn up in a different part of the inventory. When we are working with different parts of the economy, that is quite different from how they think down the supply chains.

Lastly, in the private sector and public procurement, these are the kinds of tools where you can think about driving change through supply chains globally or domestically—again, that is firmly outside the committee's work. These are all interesting questions. We are happy always to have interesting questions from policymakers. It is just that it is not technically in the statutory job.

Q48 **Chair:** Well, here is a question that may be. You noted the slow rate of carbon capture, use and storage, but you said that there were clear demonstrator projects going on around the world. Have you done any analysis of how long it took for the financing of those projects to come into place to ensure that they even got to demonstrator status, and have you been able to project how long it might be to get fully functioning projects in the UK?

Emma Pinchbeck: Yes. Eoin might want to say some more about this, but in our pathway and in our assessments of technology roll-out for every single technology in the CCC's advice, we have an assumption of its learning rate in the market—where it is today, how quickly it rolls out



now and how quickly it might roll out with learning rates applied, which includes things such as how fast the financing can come in.

We base our assumptions on a range of factors, one of which is what has happened in other markets, so existing plants is a good place to start. Yes, we have a fair idea of the lead-in time for CCUS. I suspect your question is to do with the Government's assumption on CCUS and removals. That is one reason why we have signals that are dependent on removals, to the degree that is in the carbon budget growth and delivery plan. It is riskier than alternatives. They will need to set out a clear pathway to get that to happen, building from learnings from other countries and all of the things we stated about CCUS, but they will also need contingency.

Q49 **Chair:** Another flagged area.

Emma Pinchbeck: It is a significant flag, yes.

Dr Devane: Yes, definitely. For our seventh carbon budget work on engineered removals, we commissioned some research looking at the lead times for developing engineered removals projects, and our uptake assumptions were guided by that. The Government's uptake assumptions go beyond what we assumed, though not necessarily beyond the maximum achievable, but as Emma said, we flagged that the Government's steep ramp-up, particularly in the 2031 to 2037 period, is significantly risky, especially given the lack of overall delivery plans and business models to deliver this. We have said that these need to be brought forward urgently.

Q50 **Julia Buckley:** On aviation and the market share that has gone across to SAF, you describe that in your report as a small increase from 2.2% to 2.5%. Recognising that we need to be at 3.6% by the end of this year and must have reached 10% by 2030, what actions do you feel the Government should take to support the scale-up of second and third-generation SAF?

Dr Devane: First, it is good that the 2.5% is meeting the low level set out in the mandate targets—that is a good initial step. Almost all—or perhaps all—the SAF currently being produced for UK use is what is called first-generation HEFA, which I believe is hydrogenated ester and fatty acids but do not ask me to say that again.

Chair: We stumbled over it yesterday in the Transport Select Committee as well.

Dr Devane: That is the first generation of the fuel. In our analysis, by 2050, we expect almost all the SAF to be either second or third generation, which is bio-based, or power to liquid, produced from a source of captured carbon. There are challenges we flagged in the report in terms of scaling those production routes up—they are partly novel production routes, or novel at-scale production routes. Securing



HOUSE OF COMMONS

feedstocks, and competition for bio feedstocks across sectors, is one; financing challenges for SAF plants is another.

We think there are two things that are crucial to doing this. One is that the mandate itself has targets in for both of these types, effectively. There is a cap on HEFA from 2027, which will be 71% in 2030, reducing to 35% by 2040. There is a separate power-to-liquid obligation, which starts at very small levels of 0.2% in 2028 and grows to 3.5% in 2040. We think it has the potential to grow considerably more than that by 2050. But the first target—the first ask—is essentially to stick to those targets and ensure that those are delivered to help diversify the market and, what is more, to set out in the jet zero strategy update that is coming next year that that kind of market diversification is desirable, to provide that steer to the sector.

On the second target, we were quite complimentary of the Sustainable Aviation Fuel Act, which came in this year, particularly the introduction a SAF revenue certainty mechanism, which is positive progress. It gives confidence to those investing in sustainable aviation fuel infrastructure that there will be demand for it and there will be profit to be made from it. We have said that the Government should look into whether it can be brought forward, as they are currently not planning to allocate contracts until the end of 2028. It would be helpful if some of that could happen sooner to give certainty and confidence a bit sooner.

Q51 Julia Buckley: What are your views on whether the SAF mandate should be widened out, as per the Whitehead review, which talks about it being perhaps a more generic review looking across the piece?

Dr Devane: This comes quite close to policy questions, which will be set out in our advice next week, given that we will be advising not just on Heathrow expansion but on the wider role of aviation and policy mechanisms to deliver on that, so I will have to hold that back, I am afraid—sorry.

Q52 Julia Buckley: Let us move on to the international credits and then the uncertainty and higher risk that that brings into your assessment. Given that this makes some of the plans higher risk, you have been pretty clear that the Government's contingency plans should be including demand management. We on this Committee have heard Ministers push back as a view that that does not currently feature in their contingency plans. How feasible are these plans? How much can we trust them if we have high volatility from the international credits and, as of today, no inclusion of that demand management.

Dr Devane: So two questions here; one is about the international credits, and one is about the role of demand management.

On credits, we have said that the Government need to introduce clear and stringent criteria on any credits through the CORSIA scheme that can be used towards carbon budgets. There are clear concerns around



sufficient supply of quality credits and the fact that the scheme currently does not go beyond 2035. The Government need to address how they will mitigate those risks.

We have also been clear in our advice that the appropriate means of offsetting aviation emissions, which are long-lived carbon dioxide emissions, is through engineered forms of removal that are permanent on geological timescales. We would be keen for any use of credits to look at access to those engineered removals, not just all types of credit.

Beyond that, on the wider demand-management question, our advice and our modelling for the seventh carbon budget set out a perspective that aviation demand can only really grow conditional on low-carbon technology, sustainable aviation fuel and engineered removals by and large, developing at the pace that is required. If those do not develop, or develop more slowly than expected, more demand management may be needed. Our approach to aviation demand in our seventh carbon budget advice was that demand remain constant or around today's level until 2035 and then scaled up beyond then, when we had assumed that sufficient technological solutions would be available at scale.

Those technologies are quite costly, and simply managing and constraining demand does not give you an answer for how to pay for those options. The modelling we did in our seventh carbon budget work took the approach that the cost of these technologies should be passed through to the aviation sector and to the cost of flying, in line with the polluter pays principle. That in itself manages demand by a demand suppression effect—

Julia Buckley: Killing two birds with one stone.

Dr Devane: —but it also generates revenues to pay for the solutions. Our citizens' panel was very supportive of this approach as well. They felt that people who fly should be the ones paying, rather than all taxpayers.

Q53 Julia Buckley: Can I push back slightly? You talk there about demand staying constant, but your own report showed that demand had in fact increased by 7% in the last period. Although you are unable to comment specifically on expansions such as Heathrow and Gatwick, surely that trajectory is in numerical terms indicative of demand growing further.

Dr Devane: Demand has been growing in recent years, largely driven by the recovery from the pandemic. We have been saying for the last couple of years that we are monitoring that closely. We were slightly reassured, though, that aviation sector emissions did not continue to grow this year, and that was something we had flagged last year as a big area we would be looking at and a big area of risk if they continued to grow steeply. We will continue monitoring that.

Q54 Julia Buckley: When do you think the Government should set out the criteria for those international tax credits under the CORSIA? If you



wanted to set out a recommendation and a timescale, what would your view be?

Dr Devane: We have not set a timescale. There are two useful touchpoints coming up in the near horizon. One is the refresh of the jet zero strategy next year. The other is the delivery plan for the seventh carbon budget. We have said that the planning for the seventh carbon budget should not be planning to use international credits—we think it can be achieved through domestic action—but there may be potential future circumstances that warrant its use.

Q55 **Julia Buckley:** Are you saying that by the time they are looking at the next review, the international credits should not be in there?

Dr Devane: Potentially.

Q56 **Jonathan Davies:** I have some questions about land use and agriculture. I understand that emissions from land use have only fallen by 0.6 megatonnes of CO₂-equivalent since 2008, so agriculture emissions have been stubbornly high. We have seen the Government publish the land use framework and the 25-year farming roadmap, and I think I have seen some welcoming words, particularly about the land use framework, from the Climate Change Committee. I wonder if you might give us your take on how those two schemes might support a stable, long-term policy landscape that is needed to help us deliver meaningful reductions in emissions in this sector.

Emman Pinchbeck: Just as a point of detail, the farming roadmap came out after the deadline for the assessment for the policies that went into the progress report for this year. However, I think if you group those together, along with the sustainable farming incentive opening this year, and the funding allocated in the farming roadmap that we have seen, it is good news on two fronts.

First, there is a framework, and secondly, there is some funding allocated through the incentives and the roadmap out to 2030. We are expecting the ELMS budget to reach £2 billion per year by 2029, and there is a commitment in the farming roadmap for incentives to be aligned towards public goods by 2030. That combination is good.

There are some caveats. The land use framework, of course, does not have teeth—it is guidance rather than direction—and so there is a question about how you turn it into delivery. The other is that you need long-term incentives for some of the things that we are asking rural communities, landowners and farmers to do. In particular, we want to see more sustained incentives on tree planting, as I said at the very beginning, and peatland restoration, because while peatland restoration rates have been good, we still need to scale up in order to meet our targets.

There is a real difference in the UK between the devolved Governments and a patchwork of progress on tree planting and peatland. To give you



HOUSE OF COMMONS

some context, the planting rates for trees need to increase from just over 15,000 hectares per year in 2024-25 to just over 35,000 hectares per year by 2030. A considerable lift is needed, and woodland creation rates have fallen overall in the UK. There is significant further effort needed on land use around tree planting and peatland.

Q57 Jonathan Davies: How would we deliver on that? What would be the best approach?

Emma Pinchbeck: One is sustained incentives. In the case of tree-planting rates, for example, the fall in tree-planting rates in Scotland has been simply due to a change in the incentive scheme there. You have seen a precipitous year-on-year change in tree-planting rates because without funding, farmers and land managers cannot be expected to—

Q58 Jonathan Davies: That is a devolved matter with the Scottish Government.

Emma Pinchbeck: Yes, but it is a patchwork of issues around the UK as well.

Dr Devane: It also jumped up the year before, which is indicative in my view of capacity in the system, provided the stable budgets are there, as Emma was saying.

Emma Pinchbeck: Woodland creation rates in England increased again for the fourth consecutive year due to faster application processes but also an increase in payment rate. You can see that relationship between the support scheme and what is happening on our land. This is not surprising. If you think about agriculture in general, we need stable policy, long-term strategy for the sector and for land use, and sustainable investment. Even under the Government's own targets for tree planting, we do not have funding certainty beyond 2029-30, and this is a significant change. We would highlight that, and the mixed progress around the UK.

Q59 Jonathan Davies: Sticking with agriculture, some people might say that the Government ought to set a formal pathway for reducing livestock numbers because we know that is a significant contributor to our greenhouse gas emissions. Other people might say that we would just end up improving those products anyway, which would then have an additional carbon footprint because it has to be brought here. I know there are particular concerns around the potential for a lot of Brazilian beef to be imported as the EU makes changes around its rules on Brazilian beef.

What is your take on that? I know you make recommendations to Government and it is up to Government, and sometimes your representations are poorly represented by people who are not predisposed to supporting what you do, who will tell us that we will never eat a piece of cheese again or any animal-derived products. Would it be your advice to Government that they need to set a formal pathway for



reducing livestock numbers? If so, what would be needed to support that?

Emma Pinchbeck: I can tell you what is in the carbon budget and growth delivery plan, which is a good place to start, which is that it is different from what we advised in the seventh carbon budget, which was a change in livestock numbers, although without measures on livestock reduction per se. I will come back to that.

They do not have livestock numbers as a significant contribution for emissions reduction from land in the carbon budget and growth delivery plan. They compensate for that, and for going slower on electrification and behaviour change, as discussed, by going faster on electricity, but also with more removals. That tells you that the reason that we have in our pathway emissions from a change in land use, including livestock numbers changing, is that it is a central estimate where we are just looking for the cheapest and most feasible route through to net zero.

There are consequences from changing and doing something in removals, which are currently more expensive, but those are choices that Government should be free to make. They are facing other choices that we do not have to make as the committee, including—we have touched upon it—industrial strategy, policy for manufacturing and policy for agriculture more generally. In the sense that policymakers will diverge from our pathways, that is absolutely fine. We said the same about the Scottish Government, who also did not follow our livestock number advice.

In livestock numbers, cattle and sheep numbers fell again last year, by about 1% for cattle and 2% for sheep. It is a long-term trend from around 1990 that again pre-dates the Climate Change Act and is ahead of the level of reduction we modelled in the balanced pathway for our seventh carbon budget advice. We do not know if that will be maintained going forward, but it is obviously not to do with net zero policy so much as, for example, changes in diet that could be to do with cost of living or dietary choices, as well as, as you said, things like trade policy that sit outside of our remit. Household beef and lamb purchases fell 5% in 2025, and there is a longer-term reduction of 9% from 2021. The market is going faster than our modelling in the seventh carbon budget.

In our modelling, we assumed that there was a change in livestock numbers. One reason we thought that that was important was cost and feasibility when you look across the whole economy, but the other reason is that we modelled land use as a whole. We looked at that dietary trend that was already happening. We looked at what households might do if alternative proteins and alternatives to meat become cheaper. That gets you a livestock reduction ahead of, or in line with, a trajectory for 2050, and that amount of livestock change freed up the number of hectares of land that we thought were necessary for tree planting and peatland restoration without significantly changing other land use.



The really important thing about that, coming from a farming background and a rural community, is that it gives you alternative sources of income on your land. We modelled a closed loop for land use that looked at all the things you could do on your land as a farmer and land manager, and tried to work out the cost per hectare.

This is a way of saying that Government are completely free to not follow that pathway and to do something different with agriculture, but in not doing livestock there is this question of land use and where the land comes from. There is also the question of how we can help farmers to do things other than livestock and how we can support them, given the significant changes in the market that we are already seeing. That is how we approached our model.

Q60 Jonathan Davies: It is very interesting. I do not know how easy it is to find out to what degree the reduction in consumption of meat is driven by cost of living pressures or by lifestyle choices, but I note that imports of meat have not necessarily risen.

I wonder, in the interests of time, if we might be able to touch on one other point. This summer we have seen some terrible wildfires all over the country, including in Derbyshire, where I live. Have you done any analysis of these fires and their impact on carbon emissions? Is it something that ought to be factored into our carbon budgets going forward?

Emma Pinchbeck: We have been talking a lot about risk to the country from climate change over the summer, and we have sadly seen some of those risks manifesting, including extreme heat, drought and increased risk of wildfire, which are several of the biggest risks we raise in the report, alongside—counterintuitively—extreme flooding. In that report we highlighted that wildfire of the kind we have seen this summer will become more frequent and that we will have a wildfire season rather than wildfire weeks. That has obviously been devastating for lots of parts of the country.

As we have just talked about farming, we do a lot of work with the farming community and there is no question that they are really pressured by the change in climate and by other changes in the market, and that they need support, but also that they recognise that climate change is already affecting their ability to farm in this country, including livestock farmers, who have reported reduced yields from their dairy cattle. We think there might be a relationship with some of the numbers we are seeing on reduction of cattle and sheep, because of having to have spring lambs to market earlier in the season because of changing climate. It is real all over the country.

In terms of whether we have looked at the emissions from these wildfires, they will show up in a line on the inventory. We will see the impact from the emissions. They are not split out; they are caught in a list of other miscellaneous bits in land use. Emissions from wildfires on



forest land reached 0.1 megatonnes of CO₂ in 2024, versus 0.3 megatonnes for the land use sector overall. It is small relative to the other things we are talking about in land use, but of course that will increase as wildfire season increases.

In general, DEFRA is keen to understand the wildfire risk to this country more broadly, and we would also like to do that as we plan our next work cycle.

Q61 Jonathan Davies: Thinking about how SFIs are spent, and the land use framework, one of the drivers behind why the fires have been so bad is that we have had a very wet winter, so vegetation is somewhat more verdant, and then we have had a very dry summer. It is dry but there is a lot of fuel. Are you aware of thought going into things like future iterations of the land use framework or SFIs to encourage people to grow some types of plants or vegetation that may be more resilient to catching fire than others?

Emma Pinchbeck: Yes, not just for fire risk but also what is possible to grow as an agricultural crop in this country. There is a significant amount of advice in the "A Well-Adapted UK" report on vegetation management, thinking about multi-seasonal impacts. What happens when you get a drought, then a flood and then extreme heat? What do these compound risks do not just to agriculture but to the rest of the economy?

On the agriculture side, farmers have said to us in our farmers' jury and through work with them that they would like more information about what they should be planting and how they should be thinking about changing their land. Again, that needs to feed in to how you think about your land-use modelling. That is one of the reasons why we have taken this broader approach, where we have thought about livestock, land, trees, peatland, land that might be impacted by climate risk, and so on.

Chair: I call John Whitby—a very patient John Whitby.

Q62 John Whitby: Very patient! Thank you.

The Government have responded to Alan Whitehead's review. What is your initial reaction to their response?

Dr Devane: We do not have a formal role in assessing responses to things like the Whitehead review, but I would say—and we have already talked about this—is that in our assessment, of course there is a role for engineered removals. Any credible net zero pathway will have a mix of emissions reduction and removals.

Our analysis takes the approach that you should take actions, where they are cost-effective and feasible, to reduce emissions first, so we go a bit faster on electrification and we have a bit more of a role for demand-side measures than in the Government's pathway.

As Emma has already highlighted, the Government trade that off for a more rapid ramp-up of removals. In the Government's pathway, 17% of



emissions reduction from 2031 to 2037 is coming from engineered removals. We have highlighted that there is not the detail behind that. The striking statistic is that 94% of those engineered removals, in our policy assessment, carry either significant risk or insufficient plans. We have made clear that there needs to be a delivery plan for engineered removals, and it needs to include things like progress monitoring and contingency plans in the event that technologies do not develop at the pace planned. That is the general view on some of the issues that the Whitehead review covered.

On the specifics, there are areas that align quite closely to what we have said, notably the discussion of the aviation sector and the need to have a comprehensive policy package to ensure that the aviation sector takes responsibility for reducing its own emissions to net zero. We have already talked about the net zero aviation mandate—it came up in an earlier question—as one means that the Whitehead review set out for delivering such an outcome.

Q63 John Whitby: They have parked that in their response to some extent. You mentioned the Government's removal strategy. How quickly should they produce it?

Dr Devane: We have not said, but I end up at what I said earlier: we understand a new delivery plan for the seventh carbon budget is due as soon as practicable under the Climate Change Act now that the seventh carbon budget has been legislated for, and aligning it with that would be a sensible approach. Given that, in the Government's plan, the sixth carbon budget period already has a significant ramp-up of engineered removals, we would expect there to be even more significant reliance in the seventh plan if they take a similar approach.

Q64 John Whitby: The Government's contention is that they are aiming to achieve net zero as far as possible through emissions mitigation. Is that credible, given their approach in areas like aviation and behavioural change? Are we going to get there?

Dr Devane: We think there are credible routes to get there. We have set out our assessment of a balanced pathway that gets there. The Government have set out their assessment of a slightly different balance of measures, as is their right.

We will continue in our progress reports to highlight where we think actions need to be taken to deliver on that, or things are at risk of going off track. We have highlighted quite a few of them in this session in terms of the building sector, the industry sector, aviation and engineered removals, and we will continue to do so.

Q65 John Whitby: Given that one of the main thrusts of net zero is to hold the global temperature to 1.5° above pre-industrial levels and we have breached that already, is 2050 still the right date?

Dr Devane: The main thrust of net zero is to stop the UK's contribution to global warming, and any additional increment of global warming



matters in terms of avoiding impacts. We have set out in our “A Well-Adapted UK” report the difference between impacts at 2° and 4°, for instance.

Our assessment for our seventh carbon budget advice was in line with the latest science from the IPCC, which said that net zero CO₂ emissions and deep reductions in other greenhouse gases are essential by the mid-century to deliver on that, so our view is that it is still a contribution that aligns with what is required to stop global warming.

Q66 John Whitby: Does the public know much about greenhouse gas removals?

Dr Devane: Probably not.

Q67 John Whitby: I do not think it does—that is the right answer. Do you think the Government need to make the public more aware? Do they need to make the case for it?

Dr Devane: Not especially. There are many more technologies that are more important for the public to know the detail of, notably the things that matter for their own lives: electric vehicles, heat pumps and things like that. That said, obviously we are in a time of strained public finances. If this is something the Government are planning to use significant taxpayer money on, they should think about how they explain that clearly to taxpayers. That sort of communication and understanding is important from that perspective.

The other perspective that is important is that of the communities where these removal technologies will be sited, who need to be brought in. We have learned from various infrastructure projects and decisions in the past that you need to have proper, bespoke, two-way communication that listens to local concerns, where possible addresses those concerns, and makes sure that you have local buy-in for the projects.

John Whitby: Excellent, thank you. Thank you, Chair.

Chair: Thank you so much. You started early; we have finished late. You have been going for some two and three-quarter hours. You will now be despised by the four Ministers who we have coming to meet us on Monday because you were in command of your brief, and we appreciate the fact that you have shown such command of all the detail. We just hope that the Ministers coming on Monday are similarly equipped. Thank you very much. It has been a really helpful and informative session.