HOUSE OF COMMONS

Environmental Audit Committee

Oral evidence: Carbon border adjustment mechanism, HC 737

Wednesday 24 November 2021

Ordered by the House of Commons to be published on 24 November 2021.

Watch the meeting

Members present: Philip Dunne (Chair); Duncan Baker; Helen Hayes; Ian Levy; Caroline Lucas; Cherilyn Mackrory; John McNally; Jerome Mayhew.

Questions 1 - 52

Witnesses

I: Sir Dieter Helm, Professor of Economic Policy, University of Oxford.

II: Dr Sanna Markkanen, Research Programme Lead and Senior Analyst, Cambridge Institute for Sustainability Leadership; Michael Mehling, Professor of Practice, University of Strathclyde School of Law, and Deputy Director, Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology; Dr Misato Sato, Assistant Professorial Research Fellow, Grantham Research Institute on Climate Change and the Environment, London School of Economics.

III: Mike Thompson, Chief Economist, Climate Change Committee; Domien Vangenechten, Policy Adviser on Industrial Decarbonisation, Third Generation Environmentalism (E3G); Hannah Dillon, Head of Campaign, Zero Carbon Campaign.

Written evidence from witnesses:

Third Generation Environmentalism (E3G)

Zero Carbon Campaign

Examination of witness

Witness: Sir Dieter Helm.

[*This evidence was taken by video conference*]

Q1 **Chair:** Good afternoon and welcome to the Environmental Audit Committee for our first hearing into the topic of carbon border adjustment mechanisms—CBAMs. This is a proposed market measure aiming to apply a price to imports based on their carbon footprint.

We have three panels before us today. The first is a panel with the very distinguished Sir Dieter Helm, who is the professor of economic policy at Oxford University. I think, Dieter, you have recently written a book on this topic, so you are eminently well qualified to educate us. Would you mind starting by giving a lay man's guide to what is meant by carbon border adjustment mechanisms?

Sir Dieter Helm: The simple answer to your question is that it is merely an extension of carbon pricing domestically. We are familiar with the UK Emissions Trading Scheme that creates a carbon price. We are familiar with the European Emissions Trading Scheme, carbon floor price—

Chair: Can I interrupt you for a second. The volume here is at maximum and you are not very loud. Are you able to get a bit closer to the microphone?

Sir Dieter Helm: I can do. I have been okay at this distance for—

Chair: That is better. I am sure it is at our end and not at your end.

Sir Dieter Helm: Okay. Shall I start again?

Chair: That would be helpful.

Sir Dieter Helm: The idea of a carbon border adjustment mechanism—a carbon price at the border—is a very simple one. It is just an extension of the carbon prices that we are familiar with in our own economy. We have the UK ETS, which creates a carbon price, about £70 a tonne or more. We have a carbon floor price, which creates a carbon price of just under £20. Then we have a whole series of implicit carbon prices, from fuel duties through to a range of other activities, and the implicit carbon price in the subsidies to renewables, nuclear and other more climate friendly technologies. It is just an extension of our pricing of imports of, say, steel from China, on exactly the same basis as steel produced in Port Talbot would be treated.

Q2 **Chair:** On the UK's ambition to achieve net zero by 2050, how important do you think it is to have some system of balancing adjustment to avoid exporting carbon by imposing regulation on domestic businesses which do not apply to foreign?

Sir Dieter Helm: It is very important to be utterly clear what exactly our objective is. At the moment it is a unilateral carbon production territorial

target. A really good way of achieving a reduction in territorial carbon emissions is to close down your intensive energy producers and import the stuff instead. That will improve your performance towards the target that is set in the Climate Change Act amendment of 2019.

Of course, that might actually make climate change worse. If, as I think most of the British public think, we are trying to unilaterally no longer cause climate change, it is important to recognise that carbon knows no boundary whatsoever. If you or I consume a whole variety of products, from beef produced domestically or imported steel in buildings and so on, it makes no difference to climate change if that stuff is produced in China or somewhere here in the UK, except that we are probably likely to have fewer associated carbon emissions with the production here than overseas. Therefore, the perverse incentives structure of our current target, without a carbon border adjustment, is potentially to make climate change worse than it otherwise would be.

It is absolutely clear, contrary to the Climate Change Committee, that without a CBAM it is not the case that we are no longer going to cause climate change when we get to our net zero target in 2050.

Q3 **Chair:** What attitude is the Treasury taking through its net zero review to the issue of CBAM and import standards?

Sir Dieter Helm: I was an external adviser on that project and the net zero review had two very different outcomes. The interim report, which was largely about market failures, recognised no Government failure that I could detect, and painted an extremely glossy picture of the costs of what would be required. The final report is more nuanced. I cannot speak for the Treasury but from my reading of this, alongside the extremely good paper it produced—I think at the end of 2020—on different carbon pricing mechanisms, I would describe Treasury as pretty open-minded about this. Indeed, open-minded about extending carbon pricing domestically to other sectors, which is an important feature of the CBAM argument.

Q4 **Chair:** I have one of the last remaining aluminium smelters in this country, which is one of the most energy-intensive industrial processes. If we were to introduce a CBAM scheme, let's say similar to the initial EU proposals, how would that either help or hinder those businesses that rely on energy-intensive processes, such as steel and aluminium processing, for both the British domestic producers and for those who rely on imports because we no longer produce the same grades of steel, for example, as we used to?

Sir Dieter Helm: For home production—in your case, aluminium—not to have a CBAM but at the same time to have a carbon price domestically is to subsidise competitors to that plant in overseas countries, and that cannot be a good thing. That does not mean at all that there are not overarching pressures to decarbonise anyway, and it may be much more efficient, independently of carbon, to produce, say, aluminium elsewhere.

For example, the aluminium produced at the bottom of New Zealand is next to an enormous hydro resource, which is actually renewable.

It does not tell you whether the future is good or bad for those plants. It reduces an artificial distortion and a distortion to trade that will, other things being equal, disadvantage that production domestically. Importers are incentivised to buy the stuff at the margin abroad rather than domestically, provided the shipping costs do not overwhelm the distortion to trade by not pricing carbon. Those importers will find that the world is not quite as rosy as it was before when they were effectively subsidised for their activities, which is bizarre in a world where we are trying to get out of polluting rather than into polluting.

Q5 **Chair:** With downstream industries, where UK product is not available, will this not just put up the input prices in the supply chain?

Sir Dieter Helm: If you say that you want to seriously decarbonise, you recognise that decarbonisation is a global issue. It doesn't matter where the carbon is produced. You cannot simply say, "Look, there are some things that we import that we don't want them to pay the carbon price, so we don't want to incentivise them to decarbonise, but we want to do that to some of the products domestically". I am afraid there is no get out of jail card for anyone who is in carbon-intensive activities. They should all face the costs of those activities and that helps the adjustment from carbon-intensive production to less carbon-intensive production, including in that supply chain.

We want to send incentives elsewhere, and I am sure we will come on to it later, but any importer into this country, carbon embedded in their commodities, will pay the CBAM in this policy proposal unless they have the equivalent carbon price domestically. For example, if we have a shipload of steel arriving at Southampton docks, and the customs officials approach the ship and say, "You have to pay your CBAM. Have you paid it? Presumably you paid it in advance," and the ship's captain says, "Is there any way I can get out of this?" you might say to her, "Can you show me a certificate that you have already paid an equivalent carbon price domestically?" If they show you that certificate they are of course exempt.

What that means is that any country sending carbon-intensive goods to, say, the UK, where there is a CBAM, if they prefer to pay the carbon tax to their domestic government rather than to the British Treasury—which I am sure they would—has a massive incentive to join a coalition of the unilateralist willing. That is a bottom-up way of pluralising the carbon price globally, bringing other people into that coalition of the willing and thereby doing a lot more than the top-down exercise that COP26 might attempt to achieve.

Q6 **Chair:** As you raise COP26, was anything agreed on CBAM at COP26?

Sir Dieter Helm: No. Indeed, carbon pricing was notably absent from the substance of discussion. I am afraid, to my view and in mind of the seriousness of climate change, the desire to present the outcome of COP26 as an example of tokenism—so there are no costs to decarbonisation, it is not going to do any damage to anybody's lifestyle whatsoever—meant that any discussion of carbon taxes might have scared the horses, or should I say the boaters. Sadly that is one of the core issues that ought to have been right at the top of COP26, but it wasn't there for the previous 25 COPs and I rather doubt it will be there at the next one at 27.

Q7 **Chair:** Is it not included in the measures that will be revisited over the next year ahead of COP27 in Egypt?

Sir Dieter Helm: Yes, but lots of things will be revisited and they always are going to be revisited. The issue and the substance of your question is: is there any willingness to do something about this at the COP level? I am sceptical. The great virtue of the CBAM is that it allows you unilaterally to start to build a coalition of the willing bottom-up, so that the British public can know, whatever else is going on in climate change, that we will no longer be causing climate change in 2050. Whether you think that is a good idea or not, I think it is a good idea. The fact is that our current targets do not do that and the CBAM would be a major step in the right direction.

Q8 **Chair:** My last question relates to the United States. If we are an important trading nation with a lot of imports but much less significant than the major players—and you talk about the coalition of the willing—what is the current US Administration's attitude to CBAMs?

Sir Dieter Helm: I am not close to that. What I would say—and others will have a much greater insight—is that while the US faces many of the same political problems as the UK, Biden is desperate to get oil prices down, to get the Saudis to increase production, to release strategic reserves, to push the price of fossil fuels down, because obviously voters notice those things. Here we have a reduction in regional aviation tax and no desire to put up fuel duty. These pressures are common.

The United States' position is very different from ours in the following sense. Relative to its GDP it does not trade very much. It trades a huge amount in absolute terms but relatively basically most trade in America happens between American states. We are a small, open economy. That said, it has a history of, shall we say, difficult trade disputes with China, and China is a major source of intensive carbon product emissions being traded into the world market. If you wanted a slightly more rational approach rather than protectionism from the United States in its approach particularly to China, this seems to me to be not entirely an impossible ask.

If the EU does have a CBAM, and the EU is nearly the size of the US economy, that changes the game in the political calculations and the

debates with the United States in a way that a very small, very open economy on its own—the UK—probably would not.

Chair: Thank you very much, Professor. We are now going to open questions to others and Helen Hayes is next.

Q9 **Helen Hayes:** Good afternoon, Sir Dieter. How might future increases in the carbon price impact on the risk of carbon leakage in the future and what role can CBAM play in addressing that risk?

Sir Dieter Helm: We already have, almost below the radar—people do not seem to have noticed—one of the highest carbon prices in the world. This has happened extremely quickly. It is true that the EU has come up to €66 a tonne but we are well clear of £70 a tonne and there is also the carbon floor price in place. We have not had much experience of that yet, but that makes a great deal of difference. We do not have a CBAM, and we still have a few major energy-intensive industries left—not many but a few—so we have to give them special exemptions from the UK ETS and all sorts of other devices to help them maintain their competitiveness. Of course, if you give people exemptions you are basically reducing their direct incentives to decarbonise. That is not a good idea.

My view is that if you are really serious about these sorts of levels of carbon price, you have to address this question going forward and then that is the issue of how do you do it? All you are doing in the CBAM—and I want to emphasise this throughout this session—is the same to imports as you are doing domestically. It is not as if you are discriminating against or in favour of anything. You are just making it common. That is the most efficient and, therefore, the cheapest way of getting carbon emissions down in this huge task we have of getting stuff down incredibly quickly.

Q10 **Helen Hayes:** How significant a factor is climate policy for industry in the decision about whether to relocate production and, therefore, also relocate emissions overseas, as compared with other factors such as the cost of labour?

Sir Dieter Helm: We need to make some distinctions here. There is a world of difference between people saying, "It is no longer worth producing in the UK. We will move overseas," as opposed to people saying, "We are going to make a new investment. Where shall we make it?" I sometimes flippantly remark—just to provoke the counter-example because I am sure I am wrong on this—that there is virtually no energy-intensive investment taking place in the UK or the EU at the moment.

As the corollary of that, look at the eastern seaboard of the United States where at one stage over 100 petrochemical plants were being built and that is on the basis of cheap shale gas. It is not, "Is anyone leaving?" It is, "Is anybody adding more production base in place?" There is a lot of discussion about leakage and there are some studies claiming to show there isn't much leakage. It depends how you measure it, and it depends whether it is dynamic or static. If you carry out an exercise that I

advocate in my recent book—which is construct your own carbon diary and look during the day at all the things that you consume and have a rough guess how much carbon is in them and work out where all the stuff was produced—you will find that not just those headlined so-called carbon leakages but virtually everything, from a jar of chocolate spread to shoes or whatever, can have multiple countries of origin and multiple components.

If Europe and the UK want to have energy and intensive production in the future we have to get serious about this issue. The leakage numbers, as officially reported, are only the tip of a pretty substantial iceberg—to use that hackneyed cliché.

Q11 **Helen Hayes:** Thank you. How does a CBAM compare with other methods for reducing carbon emissions from imports such as product standards?

Sir Dieter Helm: People imagine that we can avoid having a carbon price by imposing a standard. Virtually nothing we import does not have a standard attached to it. There is regulation around everything. All markets work because the rules of the game are defined. You cannot import a car if the brakes do not work. It is pretty straightforward. There is nothing new in product standards and they are perfectly compatible with CBAMs. The question is, if you want to have a CBAM in respect of, say, Brazilian beef, could you instead say that a bit of beef must not have hormones in it or must not come from a bit of rainforest and so on?

The prohibition cases are straightforward. You may decide that we do not want GMO crops or whatever, and you just say no. We do that for a whole host of things that you cannot import into this country. That is not the interesting case. The interesting case is where you want to put an incentive to decarbonise but not ban it. Then the question is: how good is the official at judging and guessing what the impact would be of a particular product and standard to the cost structure of an importing country? Frankly, the answer is that we do not know. It would be wide open to lobbying, all the kind of regulatory capture, standard capture that goes on, and my guess is that it will be pretty difficult if not counterproductive.

To be practical too, try doing product standards, to work through a list of all the things that a trade deal with the United States might contain that you don't want, in the sense that you do not want challenging domestic industry. Standards lend themselves to protectionism. CBAM is open, common to all players, the same price as domestically, there is no distortion to trade taking place. I think that is a better route, but of course there will be standards. Why not?

Q12 **Helen Hayes:** It sounds like your assessment is that CBAM is a necessary part of our path to net zero and something that is essential that the UK implements. What is your assessment, overall, of how effective it would be at reducing carbon leakage on its own and are there

any other measures? You have mentioned standards but are there any other measures that would need to accompany it for it to be as effective as possible?

Sir Dieter Helm: Just go back to the question I was asked right at the start. It is not a good mechanism if you want to be able to claim you are making progress towards your territorial carbon production target, which is the 2050 net zero target. It is best to close all these industries and import the stuff instead if you want to achieve that target. That is the mistake. If you unilaterally no longer want to cause climate change, you recognise that climate change is global, that it does not matter where a tonne of carbon is emitted, it really does matter that you do not discriminate between imports and domestic production and in the process you make things worse.

Look around at this. For 30 years we have added 2 parts per million to the atmosphere every single year, including last year. There has been no progress in 30 years in slowing down that addition. Where have those additional emissions come from? Overwhelmingly they have come from the far east, and China is now 30% of emissions. Now, why did that happen? Well, there were massive export markets for China. It is not as if the Chinese are responsible for 30% of emissions in the sense of they are buying the goods that are causing them. They are responsible for a lot and it is very important they address their territorial carbon production, but it is the carbon consumption that counts.

Of course, no tax, no environmental charge, no attempt to put a price on pollution will be sufficient to address any environmental problem. Some will be better than others and, in this case, it is incredibly important because there are all sorts of ways we could reduce carbon, globally and domestically. That is why, for example, we should not exclude agriculture from carbon pricing or heating or transport but at the same time put it on the power sector. That is what this common carbon price does. It finds the cheapest way. My view is that decarbonisation will be very costly and completely contrary to the conventional wisdom. Therefore, to take the public with this story and impose the minimum burdens, we want efficient outcomes.

As with all trade, domestically when you go to the shop and buy stuff at the supermarket, you go online or you buy something that is imported through a supplier, you rely on a whole set of frameworks institutions and rules around that trade, so one of the things that is important here is disclosure. You want to know where stuff is produced. You really do need to know the origins of stuff, not where it was packaged but where it came from. You need transparency and the great opportunity here is that the coming of digital data can tell you a vast amount about any and all commodities that are traded anywhere.

That little barcode now contains fantastic information. We can tell you exactly where the ship is by satellite data. We can tell you which bit of the rainforest has been burnt down, so that tracking and reporting, which

is part of the whole drift of climate change policy—and actually was one of the things that was helpfully reiterated at COP26—is all part of the frame and, of course, the standards and rules and so on that need to be put in place.

I do not think that is really any different from doing trade domestically. I do not think it is different between the north-east and the south-west and I do not think it is different between China and American federal states between each other. Yes, we need that, and the transparency will help a lot and it will help with incidental and unrelated benefits to know what is going on in our carbon polluting world.

Q13 **Caroline Lucas:** It sounds like you are a great advocate for including consumption emissions in our overall targets. If that is the case, it is music to my ears because it always feels very unfair that we only ever look at our targets through the lens of territorial emissions.

What benefits and risks might the UK face from being an early mover and introducing its own CBAM? You have talked about the importance of a coalition of the willing, but if we go first and there are no willing around us, are there any perverse impacts from that?

Sir Dieter Helm: The first point is that all my approach to climate change is on the basis of carbon consumption. That is the only way to think about pollution because—and it is always politically difficult to make this point—in the end everything is produced for us to consume. There is no way of thinking about pollution as a purely production activity. As an aside, it has this rather perverse notion that many of the public end up thinking that, "If only we could stop nasty polluting firms doing stuff, it is fine. It is not our fault. Nothing to do with us." That sadly is not true. They make the stuff for us not for fun, so it is absolutely crucial.

My next point is that we have decided to do something unilaterally. There are lots of times when unilateral policies are very sensible, but this is a global problem. I hear this stuff about, "The costs of addressing climate change, of mitigation, are much less than the costs of the climate change itself." It is a delusion to think that if we decarbonise the UK we will not get hit by a lot of climate change. Most of the climate change going forward will come from those great developing parts of the world—China, India and sub-Saharan Africa as well. We will get both the costs of mitigation and the costs of climate change, and that is pretty much baked in whether you think it is 2.4° or more going forward. You have to be realistic about what is involved here, and you have to realise it is down to our consumption.

If you want to act unilaterally on a global problem of which you are not a particularly significant part any more—we are a small economy relative to the world—you have to make sure that you are not causing perverse results. That is why you have to address all and every bit of carbon that you consume, and it does not matter a damn from a climate change point of view whether it comes from Brazil or from Kent.

Sequestration is slightly different. On the sequestration side, it is true that it does not matter where a tonne of carbon is sequestrated but the associated costs and benefits of action do matter on a location basis because biodiversity is not ubiquitous around the world. Its location matters and I think that we should include sequestration as well as emissions into this framework.

What are the risks of us doing this? The risks of us doing this with a CBAM seem to me to be less than the risk to us of doing it without a CBAM. If we do it without a CBAM, we will not be in a position where we are no longer causing climate change so we are not achieving our objective and we may do a lot of damage to British industry in the process. Why would you want to do that? The answer to that question is a short-term political notion that we must not scare the horses—the voters—by telling them that whatever you consume, wherever it comes from, if it is carbon-intensive it will be more expensive and if you are importing or producing something domestically, either way, which is low-carbon-intensive it will be relatively cheaper than it otherwise would have been.

The risks are in the unilateral bit. We end up doing the right thing, and we no longer cause climate change, but we just get a hell of a lot of climate change. That is probably going to happen anyway. The question for you is whether you want to bear the costs of at least you no longer being responsible—

Q14 **Caroline Lucas:** We do have the historical responsibility, let's not forget. If we looked at this since the industrial revolution our contribution to the problem is massively higher, as you know.

Sir Dieter Helm: That is exactly the point I was going to follow up with.

Caroline Lucas: Marvellous.

Sir Dieter Helm: The position the Indians took, for instance, in the run-up to COP was, "You put all the stuff up there, not the methane, which is short-life carbon. We didn't. You have developed the lifestyles that go with the industrialisation that was built on fossil fuels. We didn't. Therefore, you have an historic moral responsibility and that is why you must see unilateralism to a global problem as a moral or ethical principle." Dare I say this from an Oxford college—what is wrong with having a bit of ethics or morality in politics?

Q15 **Caroline Lucas:** You will be a Green party member yet.

Are there are any trade and substitution effects that arise if the UK were to implement a CBAM, and what impact might those have on the UK's ambitions for a greener economy? I suppose I am just probing a bit more as to whether or not there would be any perverse impacts of substitution.

Sir Dieter Helm: Before you get to the word "perverse" I hope there will be trade impacts. That is the whole point.

Caroline Lucas: Substitution effects, though, in particular.

Sir Dieter Helm: I really hope that there are substitution effects. There is nothing optimal about the level of global trade. More trade may be better than less or the other way round. Trade should simply be where it is more efficient to produce something elsewhere than it is here, having taken the pollution and environmental costs into account. If there were going to be no trade or substitution effects whatsoever, what would be the point of doing this mechanism?

Will there be perverse effects, which is the second part of your question? In itself, no. If you have an artificial import subsidy, a subsidy to people exporting into us, which says, "You do not have to pay the price of carbon but your competitor in the UK will," if that is what you are saying to remove a distortion to trade—this is absolutely crucial—not to have a carbon price is a distortion to trade. If you are removing that distortion it seems to me—I am hesitating for a moment because there may be a counter somewhere but I want to claim unambiguously the case—that this will be what we would call in economics an efficiency welfare improvement.

Q16 **Caroline Lucas:** What about the exporters? Paris and Glasgow made commitments to consider the different capabilities and circumstances of developing countries. What I am thinking about there is that presumably there are some developing countries that could be hit quite hard by this measure, who rely heavily on exports to the UK and, while their exports may make up a small proportion of overall CBAM revenue, none the less, they might make up a high proportion of that particular country's revenue. Are there some countries that you think could be, in their own revenue, particularly hard hit by this and is that something we need to consider? For example, should some of the revenue go back to some of the poorer countries, if indeed there are poorer countries that will be involved?

Sir Dieter Helm: The first part of this is that any country that wants to base its future development on highly-polluting carbon-intensive industries probably will not have much of a role in the world economy going forward anyway. The second point is that there are economies that rely on carbon-intensive exports and they have their markets by virtue of not facing the same prices of carbon that we do domestically.

To me, that is a development question. I think you should not confuse having the right prices and incentives with development and development aid to support countries. These countries cannot go on in a world that is decarbonising building a model based on carbon-intensive industries. The quid pro quo—and it is true domestically about we can have a proper carbon price, but we have to worry about the distribution of justice and the impact on poorer people—is you need two policies, not one, because you have two different problems. You have a development problem, and you have a carbon problem.

The carbon problem is best served not exclusively by a carbon price but with a carbon price as part of the frame. The development problem is huge, and you have to say that if we are serious about climate change, but even if we are just serious about development, 0.5% or 0.7% of GDP, given the historical responsibilities, is chicken feed. I want to give you an example of that from COP that, frankly, just angers me. The developing countries said—India in particular leading the argument in the summer—"If you want us to develop in a low-carbon way, given you have had the benefits of all the oil and gas, you help us."

The climate fund, which is supposed to be $100 billion a year, has turned out—we had that at Paris—to be about $75 billion. $75 billion is the annual dividend of Saudi Aramco, projected. It is the biggest oil company but one oil company in the world. If you compare the need to address climate change across the globe in the developing countries with how much we spent on coronavirus and the pandemic—I am not questioning whether we should spend it, but we spent it on that—it gives you an order of magnitude.

It is even more serious when we say to countries, "You can't develop by cutting down your forests. We are not going to let you do that. We want to stop you doing that." I think the number was 14 billion—half private, half public. I think we wasted vastly more on test and trace in this country than we are prepared to provide to address the rainforests of the world. Therefore, I think the problem you address is one that has to be addressed if you want a cogent approach to climate change. But I do not think you do favours by exempting people from facing the pollution that we are causing by consuming their goods, simply because you cannot come up with a serious development package. That seems to me to be if that is where we have got to, let's just admit that we are not going to crack climate change and let's get on with adaptation. I think we can do better than that.

Caroline Lucas: I agree. Chair, shall we move on because I think the fourth question has sort of been covered?

Chair: Thank you. Jerome Mayhew.

Q17 **Jerome Mayhew:** We have talked about the theory of the implementation of the CBAM up to now. I want to get a bit more into how you see the detail, how the practicalities could work. Just kicking off, let's talk about the timescale. Let's say that the Government had an epiphany tomorrow and said that the CBAM should form part of Government policy—I hope it does—how soon could or should it be implemented?

Sir Dieter Helm: It depends how you want to go about it. My starting point is to some people hopelessly pragmatic. I think not having a CBAM is to be precisely wrong, and I want to be roughly right and I want to go in the right direction. In my pragmatism, even small steps are helpful. I think there are good reasons for going careful because you want to start relatively low and you want to take some time, because you are trying to

get people to change their capital stocks. You are trying to change the structure of economies to be more low carbon otherwise.

It is not quite true any more, but it used to be true that something like 70% to 80% of world carbon trade was made up of just five industries: aluminium, steel, petrochemicals, fertiliser and cement. I would start with a small number. That is what the EU is planning to do and it is dead right. Start with a small but important set of categories and then pluralise it over time. That is also what the EU ETS has done over time, trying now to think about transport and heating and so on.

I would get on with it and be focused on those five areas. I would have a transition process to introduce it but we cannot—

Q18 **Jerome Mayhew:** Over what sort of timeframe would you anticipate the transition lasting?

Sir Dieter Helm: It is out of my area of expertise to understand precisely how long the bits of administration would work. I am just appalled at how long the administration of the Brexit border things took, the paperwork and so on. There are other people who know these things much better than I do, but this is all digitisable and setting up the infrastructure to do it will be an important part of it and how well it is done will affect it. In all these things, I think we ought to set a date by which it has to be fully up and running and on the same basis domestically, and that is later on in this decade but the next two or three years should be about getting this right.

Q19 **Jerome Mayhew:** You mentioned the big five products but, of course, the EU CBAM draft Bill also envisages including electricity as a sixth issue. Why is it doing that, do you think the EU is right and should we copy it?

Sir Dieter Helm: I was once a special adviser to the Energy Commission, but it was some time ago so I am not close to the exact reasoning for this. It would not have escaped my notice, if I was in Brussels, that the UK is involved in a lot of trade in electricity with the continent. Electricity trade is usually pretty close. We do not have really long-distance cables yet so it is within the frame of the EU and countries like Norway, which are associated, and us outside. My guess is that if you are on the European side and you want to push this forward and you want to flesh out the carbon action plans, you want the UK to align its UK ETS with the EU ETS and you want it to come in line with a CBAM that it is putting in place.

I have to say as an aside, for the UK to sit on the side lines, let the EU get on with it and think, "We will work out what we are going to do later," you have to remember that the bulk of our trade is actually with the EU and that is where this will have, if not all of its effect, the main bulk of its initial impacts. Therefore, I think we should shadow it. My personal view is that the EU's position is rather too cautious and too slow. I would like to see things move faster, but we ought to be sitting around a table and

having a friendly, grown-up conversation with the EU to make sure that what we are doing is consistent with the broader efforts all in line with Glasgow and so on.

Q20 **Jerome Mayhew:** Yes. In the internal discussions on policy around CBAMs—whether CBAMs are a good idea or a bad idea—one of the big arguments against CBAMs is the practical technical difficulties of establishing an assessment process for assessing carbon levels and that they will inevitably be approximations and, by definition, inaccurate. You have already told us being roughly right is better than being definitely wrong, but to your mind what are the technical challenges in measuring carbon emissions and how can we get round that?

Sir Dieter Helm: The first point is that there are enormous numbers of interference in trade, from tariffs, and all sorts of things around the world, which also have many of these characteristics, so this is not new. That is the general point. The specific bit that is new is that you want to know what the carbon intensity of that stuff turning up at Southampton docks is, just as you want to know what the carbon-intensiveness is of that steel made in Port Talbot. You have all of those problems domestically and you have—

Jerome Mayhew: We have already addressed them domestically.

Sir Dieter Helm: Exactly, and so you have a methodology for doing some of this stuff. Now, globally, there are precise ways of doing this that I think are beyond practical reach and then there are pragmatic ones. The precise way of doing it, the speed with which digital technologies can map what is happening virtually anywhere without actually having to be in the country, is just a revolution in the making. It is very important, by the way, on sequestration, but we can tell what is happening down to 20 square metres anywhere. We know which coal power stations are being built where, whatever countries say. We know what wind farms are being built. We know all these component parts.

If we take steel from China, we know roughly how much electricity is involved in making a tonne of steel. We know how much coal is involved in making electricity in China. You can take a conservative view about what these numbers are, apply the national energy mix to these big industries—because, remember, I am starting with just five of these—but you say to the importer, "If we have it wrong, if you think we are overcharging you, you provide us with the data to the contrary." That is fantastic news in its own right because it gives a massive incentive for these countries to all improve their data collection, as we are doing for our home production. I think do not over-egg it but always have the option and, of course, in the background, "If you give us a certificate you have already paid the carbon tax, great, you don't have to pay anything."

Again, if you start small, you use the digital data that is available so you can double check, you offer the option of dispute "If you want to give us different data," and you build that into the huge exercise of basically

building our carbon database of what is going on, our sequestration database, you will get a long way down the track. I really do stress this point. You can always find a very picky technicality that tells you that you are never going to get this perfectly right, and I just tell you, yes, and you will have the nice result that you will be perfectly wrong. I want to go in the right direction and create that coalition bottom-up of the willing, because I am very sceptical of the top-down coalition of the apparently willing that we get at the COP conferences.

Q21 **Jerome Mayhew:** What you have described is a fairly good description of the proposals from the European Union. The EU makes an estimation of carbon intensity or content and then it is available for the importer to pay for a more detailed analysis to prove the contrary. Do you think we should be collaborating very closely as a project of rapprochement—let's put it that way and bring a bit of politics into it—to get involved in their European CBAM?

Sir Dieter Helm: Why do you want to replicate this stuff? If Chinese steel is going to Rotterdam and Southampton—I don't want to just pick on China, lots of countries are involved in this thing—why do you want two bureaucracies doing the same exercise? Why would you? This comes down to this observation, which is that because something is done in Europe it isn't necessarily bad. It can actually be done quite well occasionally.

I had the privilege of working on—in fact I chaired—the 2030 road map for the Commission back when I was in Brussels. These are very good people. We have very good people. Why reinvent the wheel when we are all on the same planet and we are all going to suffer climate change and it doesn't matter where the carbon is emitted? Therefore, let's co-operate and see whether we can have a working group with the United States. Even before they do this, let's try to see if there is a common ground. As I said, that is the sort of stuff that I would have liked to have happened at Glasgow.

Jerome Mayhew: Thank you so much. I am going to hand you back to the Chair.

Chair: Thank you very much, Professor. That concludes our questions to you today. Thank you very much for taking the time out of your schedule to join us. We will have a brief break while we move over to the next panel, so thank you, Dieter Helm.

Examination of witnesses

Witnesses: Dr Sanna Markkanen, Michael Mehling and Dr Misato Sato.

[*This evidence was taken by video conference*]

Chair: For our second panel we are being joined by a group of academics, spreading our reach to most of the leading academic

institutions around the world on this subject. I would like to start by welcoming Dr Sanna Markkanen from the Cambridge Institute for Sustainability Leadership, who is present in the room, and we are joined virtually by Dr Misato Sato from the London School of Economics and Michael Mehling from MIT. Welcome.

Ian Levy will ask our first set of questions. When you answer a question just give us a little bit of flavour of the nature of your research, which is relevant to our inquiry.

Q22 **Ian Levy:** Thank you for attending today, coming before the Committee. Dr Markkanen, if I could start with quite a broad question. How significant are the risks of future carbon leakage and what are the different ways that could be tackled? I know it is a broad question.

Dr Markkanen: That is a very broad question.

Ian Levy: It is a very broad question.

Dr Markkanen: I am drawing a lot of my expertise from a project that we did looking at the EU's proposed CBAM and the economic and environmental, diplomatic and legal implications that it may have.

First, to start unpacking what is quite a difficult question, it is worth pointing out that there is very little current evidence available that the risk of carbon leakage actually exists. There have been several attempts to study the impact of EU ETS, in particular, on carbon leakage and then to try to quantify what exactly the impact would be caused by EU ETS. There is no evidence so far that EU ETS has caused carbon leakage.

There is an assumption that is widely accepted, or at least widely discussed, suggesting that the reason why EU ETS has so far not caused carbon leakage is because, historically, the carbon price has been low. Therefore, when we enter into the period where the EU ETS is strengthened, the cap is tightened, the linear reduction factor is increased and carbon price goes up and the free allowances are removed, we would potentially see more carbon leakage.

I do not personally necessarily agree with that argument. Quite often, when we talk about carbon leakage, we consider that it would entail a company physically relocating its means of production from one country, whether that is an EU country or the UK, to another country that has a more favourable environment with a more relaxed climate policy, for example. That process alone is not simple. It is not straightforward. You do not just pick up your means of production from one country and shift them into another. You would need to consider various factors that I am not going to go into here, but I can elaborate if you are interested. You would consider so many other factors than just the climate policy framework in the country that you are relocating into.

Increasingly, even if you do consider climate policy as a factor, considering how many countries are now signing up to net zero by 2050,

2060 and 2070, even if you only consider climate policy you would still be hard pressed to find a country that would provide all the other factors that you require, such as a stable investment environment, availability of workers, energy generation and distribution technology that supports energy-intensive industries, and would not have the risk of climate policy and carbon pricing being implemented in that context.

Moreover, even if you did pick up your means of production from the UK and relocate them to another country, the actual amount of carbon leakage that you would generate would be the difference between the carbon intensity in your productions in the UK and the carbon intensity of what you produce outside of the UK. That may not be very significant because you would be highly unlikely, as an industrial company, to go back to a less efficient means of production as you relocate.

Then we are looking at two other scenarios potentially. One of them is a situation where a company already has operations in the UK and in another country, most likely outside the EU considering that the EU also has quite a high level of climate policy in place and a similar carbon price. In that instance, you would think that company would potentially close down or phase out its UK operations and increase its operations elsewhere. Again, the amount of carbon leakage that that process would generate would be the difference of how much carbon that company's operations produced in the UK and how much they will produce in another context.

The third option, which is probably the greatest risk for carbon leakage, is that an industrial operator in the UK would close down its operations in the UK, not relocate its operations elsewhere but its market share would be taken over by another producer that utilises a lot more carbon-intensive technology in its production. That would probably be the most severe form of carbon leakage.

Q23 **Ian Levy:** Thank you. It was a very broad question. Dr Sato, how effective do you think a UK CBAM might be towards achieving the UK's environmental objectives in the way of decarbonisation of the industry and creating green jobs?

Dr Sato: I am slightly less optimistic than Professor Helm, definitely. How effective CBAM is as an alternative to free allocation and preventing leakage, achieving the domestic goals, I think depends on the precise design of the CBAM that can be implemented in practice. Of course, in theory, CBAM is very intuitive. It could combine with full auctioning, so the carbon price is strong domestically and the adjustment mechanism would allow for carbon costs to adjust for import prices and reimburse exporters. However, in reality, implementing CBAM faces quite a few limitations as the EU today is showing right now.

For example, reimbursing carbon costs for exporters is quite controversial. It contradicts with the domestic policy goal of driving forward carbon neutral production. It might be challenged under the WTO

law. On the other hand, if the exporters are not reimbursed the leakage risk would still remain. Also, in theory, the CBAM adjustment rate is according to the actual carbon content of the goods but, in reality, obtaining accurate data can be difficult. I am a little bit sceptical about how good the data quality is on that.

Even if you have the data, there could be issues around reshuffling. An exporter to the UK might reshuffle its carbon-intensive and low-carbon goods from different facilities so that the exported one is low carbon, but it is just displacing the emissions from what was previously exported to domestic, so it does not drive any global mitigation.

Another issue is where the coverage of the products ends in the supply chain. In theory, you want to apply CBAM to both the basic materials that are carbon-intensive and, also, the semi-finished products and even some final products if they have a very high material content or high-carbon-intensive materials in there. By only covering the basic materials or basic industrial goods, this is administratively easier. However, it could distort trade patterns or trade incentives, so instead of importing the basic material you might import the semi-finished product.

With all these limitations in the real world, we might not be able to transition fully from the current free allocation protection for leakage, such that emissions might be scaled down so we can only cover the emissions of the free allocation benchmark and then the policy objective would not be achieved.

Q24 **Ian Levy:** Thank you. If I could move on to Dr Michael Mehling. Should the UK implement the CBAM? If we did not implement one, is there an alternative that you think might be worth looking at?

Michael Mehling: Thank you for the question. It is not an easy question to answer, I think, because I concur that on the theoretical side what Sir Dieter laid out makes perfect sense: to think of a CBAM as a logical complement to carbon pricing domestically. On the implementation side, however, I also concur with Dr Sato that it has a number of thorny implications. I have worked on the topic of border carbon adjustments for probably about 15 years and have advised a number of governments in the European Union, outside of the EU, here in the United States and also in the developing world. My work suggests that there is a number of issues that Dr Sato has already highlighted. It will make it a learning experience, for sure, if we implement it.

At the same time, I would like to bring in something that I think Sir Dieter has already alluded to and that is the politics. I have seen the political economy of the discussions around these border carbon adjustment instruments on both sides of the Atlantic. It is hard to envision the support that we need for deep decarbonisation within a very short timeframe without considering this instrument. It resonates very well with important constituencies, trade associations and industry,

labour unions, and so again I think it will inevitably be part of the discussion.

I would encourage not necessarily to see it as an either/or but as a part of a broader package, and perhaps we will continue in the discussion to also look at some of the alternatives because there are many that can complement the CBAM. Sir Dieter has already mentioned product standards.

One thing that I think we have not yet touched on, which in my view is a surprising effect of just debating and discussing border carbon adjustment measures in the EU and elsewhere, is the impact it has had on climate policy debates in other countries. Along the eastern European border, for instance, and the southern border of the US and northern Africa we have seen an acceleration of discussions on how to progress carbon pricing and climate policies more generally; it had been dormant or stagnated for many years. That is a very important development because ultimately the first best alternative is if we can get co-operation across the board and convergence on climate policies, which we will not do in the short term but in the medium and long term, that has to be the desired outcome.

Q25 **Helen Hayes:** My first question is Dr Sato. What impact could the proposed EU CBAM have on the UK and how might it affect whether or not the UK Government choose to introduce a CBAM?

Dr Sato: The economic impact is likely to be not very big. The UK carbon price is currently higher than Europe's. It is likely to be credited by the EU CBAM, such that for the basic material exports the CBAM covers it will probably not have to pay the EU CBAM when exporting from the UK.

However, there could be some high administrative costs that could accumulate, especially in some imported supply chains, integrated value chains that cross the border or the channel several times. Blanket exemption is quite unlikely but there might be some targeted exclusions. For example, in the electricity sector in Northern Ireland, which is integrated into the EU's electricity market, there will be potential for exemption.

One of the main channels of impact the EU CBAM could have on the UK is that proposed in the larger package of the EU Green Deal, which will include various other support strategies for industrial carbonisation in Europe, including hydrogen regulation, ETS reform, CCFD and so on. Ensuring that a similar level of support for decarbonisation is provided to UK industry on this side will have a very important impact on UK competitiveness.

Q26 **Helen Hayes:** Thank you. You mentioned the impact on energy in Northern Ireland. Are there any other impacts you anticipate specifically in Northern Ireland?

Dr Sato: No, I am afraid this is not my area of expertise.

Q27 **Helen Hayes:** Thank you. My next question is to Dr Markkanen. Could future UK consultations on the UK Emissions Trading Scheme provide an opportunity to consult on a CBAM at the same time? Is that an opportunity the Government should be taking?

Dr Markkanen: Yes, assuming the UK Government decide to definitely consider CBAM seriously as a policy measure. If we look at the main issues that will be up for discussion on a UK CBAM, there will be a question of whether the UK is interested in linking the UK ETS to the EU ETS, because that would afford exemption to UK producers from the EU ETS and remove all administrative costs as well. Therefore, it will be economically beneficially and potentially quite helpful for especially smaller producers in the UK to do that.

However, other issues that would be open for discussion in the ETS revisions in the UK would most likely consider the removal or phasing out of free allowances that many people argue must happen for the UK to meet the 2050 climate neutrality target, the strengthening of the ETS while this process is ongoing—the linear reduction factor—strengthening of the cap and potentially the removal of excess allowances from the system.

If we think about a business perspective and at what kinds of businesses are most severely affected by the ETS revisions, it would be the companies that use large amounts of electricity that are covered by the ETS—effectively all energy-intensive industries but also others—and the heavy industries and the basic materials industry that is producing the goods the CBAM would most likely apply to. When the conversation starts around those issues it would be very helpful for that conversation to simultaneously cover any other measures that would mitigate potentially the quite possibly adverse impacts, or at least short-term adverse impacts, those revisions to ETS would have on the profitability of industrial operations in the UK.

It would be very helpful if we looked at the reality, which is that many business leaders deal with not just climate policy but many other policies and many other contextual factors that affect their operations as we move towards climate neutrality. They do not have indefinite time on their hands for the conversations around ETS to cover all these other policies that might come into play.

Q28 **Helen Hayes:** Thank you very much. My next question is to Professor Mehling. What could be done to mitigate any adverse trade impacts, including any retaliatory measures that could potentially arise from a UK CBAM?

Michael Mehling: Thank you for the question. There are two dimensions that have to be looked at: the design of a prospective CBAM mechanism and then the process in which it is prepared and then implemented.

There is a number of different design choices that can be done, and they have to be done very carefully to avoid discrimination and arbitrariness. For instance, if it were considered discriminatory or arbitrary, it could then result in grounds to challenge it before the WTO. We have already covered some of them, for instance crediting for policy efforts, especially carbon pricing already paid or complied with in the country of origin and how we determine the carbon intensity of imports and the process we use for that.

On the process, I think it is tremendously important that the Government, if they start considering this, reach out to trade partners early on, especially the potentially affected trade partners, to engage them. This was a criticism of the EU to some extent. While the Commission said it was engaging behind the scenes, many representatives—including officials in trade partner nations prospectively affected by the EU CBAM—felt there had not been enough engagement. This is incidentally also quite important in the jurisprudence of the WTO dispute settlement body. Panels and the appellate body have often placed great emphasis on the transparency and inclusiveness of the process in which trade partners are integrated and are involved in any trade-related environmental measure.

Ultimately—this may also be discussed later—how we treat less-developed and developing countries more generally is also very important. There are different ways to do so. One proposal is to exempt LDCs, less-developed countries, altogether. That has some trade-offs, but it is at least an option we can consider. Another is to reach out to them very openly, very early on and very transparently to show how we will give assistance to ensure this does not result in undue hardship for those nations that have contributed the least historically to global climate change. Of course, the revenue from the CBAM can play an important part in facilitating such support and outreach.

Generally, I would encourage thinking on leaving some flexibility and leeway. Many different countries have slightly different approaches to carbon-intensity determination standards or methodologies. There are some international standards but, by and large, most of them achieve the same outcome. Giving a bit of flexibility rather than requiring only a strict UK-based sort of approach might also help to lower resistance and opposition.

Ultimately, as Dieter already mentioned, trying to build coalitions of the willing, co-operating on defining principles, processes and procedures to get an international harmonisation would also help. However, it may not address precisely the resistance from the countries that are unlikely to join such a coalition of the willing as carbon-intensive producers, especially in Asia and east Asia.

Q29 **Helen Hayes:** Thank you very much. Professor Mehling, what impact might a UK CBAM have on existing free trade deals? Would there be a

need to incorporate it into future trade deals as they are negotiated?

Michael Mehling: There are two ways to look at this question. Prima facie, my first instinct is to say that it need not have an impact. The WTO is a multilateral free trade agreement. In that context—and it would be very similar in regional free trade agreements and bilateral trade agreements—the imposition of a CBAM will be considered the extension of an internal measure, a charge or a regulation to imports. That is part and parcel of international trade relations, with sales taxes, VAT and so on. Therefore, it would not necessitate a renegotiation of existing agreements.

That said, free trade agreements, such as the CPTPP, for instance, into which UK accession is being negotiated, include chapters—Article 20 of the CPTPP—that deal with environmental impacts of free trade. They could offer an opportunity, if amended in the future or for any newly-negotiated free trade agreements, to also incorporate some reference that allows the parties to this agreement to implement border carbon adjustments or even goes beyond that and tries to agree or set the starting point for some co-operation on general principles, maybe minimum standards, methodologies and so on. That could become the germinating point for something such as a coalition of the willing or a carbon club. That is a distant prospect. I do not think the trade negotiations and the politics of free trade will move quickly enough for what we expect to be the timeline for many of these border adjustment measures in different countries. However, by and large I think it would be an important option for the future.

Q30 **Helen Hayes:** Thank you very much. My final question is to Dr Markkanen. We have heard about a possible exemption for countries in the global south from a future CBAM and some obvious disadvantages that might have. If CBAM was to be applied to all countries with whom the UK has a trading relationship, how could any negative impacts on countries in the global south be mitigated, short of exemption, while still drawing down the benefits of the scheme?

Dr Markkanen: Initially I would advise against applying a CBAM to less-developed countries. It is one of the aspects of the EU proposal that has received a lot of negative attention from various NGOs as well as less-developed countries but also other trade partners—thinking it is inappropriate to do that because you are generating revenue from the less-developed countries. The EU proposal is planning to use this revenue to support the economic recovery from Covid-19 in Europe.

Assuming the UK decided to go down the same path and apply the CBAM also to imports from less-developed countries, perhaps the most effective mechanism to mitigate the negative impacts would be to recycle the vast majority or all of the CBAM revenue back to those countries and to very specifically support industrial decarbonisation and the decarbonisation of the power networks—similar to what the UK, US, EU and South Africa

deal is planning to do already. It is something along those lines but very much industry focused with support and technology transfer.

Helen Hayes: Thank you very much.

Q31 **Chair:** Professor Mehling, I will pick up on the point about free trade agreements. The UK is in the process of negotiating fresh free trade agreements with existing trading partners and new ones. In the event we were to introduce a CBAM, having just concluded a free trade agreement—and you mentioned the CPTPP as an example that is currently under negotiation—do you envisage that it would reopen the existing agreements we have and could be regarded by trading partners as a restraint of trade?

Michael Mehling: Thank you for your question. I would not expect so because the most likely way the UK would implement it would be an adjustment based on the UK ETS. It would not be perceived as a tariff, which is the meat of these free trade agreements to harmonise tariffs or to abolish them altogether in bilateral trade relations; it would be considered an adjustment for an internal charge or regulation at the border on imports.

As has been the case with the WTO, for instance, there is a likelihood of challenges—certainly there have been questions submitted before the WTO—but I do not think it will spark a feeling that we have to completely renegotiate and open up the trade negotiations underlying the World Trade Organisation's trade agreements. I expect the same to apply to regional and bilateral trade agreements.

Q32 **Cherilyn Mackrory:** I want to ask a few questions on how this could all impact on UK businesses and consumers. Dr Sato, if a CBAM was introduced, we heard in the last panel Dieter Helm's thoughts on which sectors and products could potentially be included. What are your thoughts on that? What do you think would be included?

Dr Sato: As I alluded to before, the precise scope of the imports covered will affect the effectiveness as well as the distributional impacts of the CBAM. I think is one of the design elements that need to be considered very carefully relative to the ambition of the policy.

It also relates to the question of free allocation, the current mechanism of preventing leakage, and which are the sectors currently receiving free allocation, which of them should transition to CBAM and how can we phase out free allocation and move entirely on to CBAM. That is another area that needs to be thought through before deciding the scope.

In addition to what sectors are included, we need to think about the precise rate at which the CBAM is adjusted, what products, how detailed the products are defined and what carbon intensity is applied, a careful examination of the current UK trade composition, their origins and destination and how elastic this trade is to prices. These careful examinations will be necessary to determine the scope.

Q33 **Cherilyn Mackrory:** Do you have any examples? I think Dieter gave examples of fossil fuels and so on. He mentioned five categories. I am not an expert on this, so could you give some examples that would resonate with businesses and consumers here?

Dr Sato: The key ones in the carbon-intensive sector are the basic materials, steel, aluminium, some oxygen products in cement like clinker, pulp and paper. The EU proposal currently does not include petroleum refining—which chemicals to include. These are the key sectors. Within these sectors it is how far you go down the supply chain that is the real key question.

Q34 **Cherilyn Mackrory:** Thank you. Dr Markkanen, you were talking to my colleague Helen not long ago about small and medium-sized enterprises and you touched on how they might be affected. Could you expand on that and talk about how a UK CBAM might affect consumers and small and medium-sized enterprises? We have talked potentially about higher prices but there seems to be some disagreement on whether that would actually impact on them. If it does, what could also be done to mitigate any negative impacts?

Dr Markkanen: Our research shows that if you put a CBAM in place, applying it to, let's say, the sectors that the EU is currently planning to do, which is basic materials such as steel, aluminium and cement and electricity—electricity is very unimportant here, electricity would not be a particularly significant part of a UK CBAM—it would most likely increase the cost of those materials to all the manufacturers that use large quantities of them. As a result, the manufacturers would most likely pass on this increased material cost to their consumers. Prices of products such as cars and buildings, which have large amounts of these materials in them, would most likely increase.

It is worth pointing out that the average consumer does not buy a new car or a new house regularly. Also, there are ways that manufacturers and developers, the construction sector, could seek to mitigate the impact of the increase in material prices and they could use more alternative materials through the process of material substitution. This could result in some unintended market distortions, which may not be ideal. They could also improve the material efficiency of their production processes, which would again mean that even though the cost of some of the basic materials increases, the cost of the final products would not go up quite so much.

It is also worth pointing out that currently nobody is really considering seriously applying a CBAM to things such as agricultural products, which would have a direct and quite severe adverse distributional impact affecting low-income households in particular.

There are two parts of the question of how SMEs would be affected. One is looking at how SMEs in the UK would be affected. Here we would see an impact most likely among SMEs in the construction sector, for

example, which rely heavily on some of the materials that would be covered by the CBAM. Alternatively, we could see a situation whereby SMEs that produce a very significant component that is used in automotive manufacturing or other industries where, let's say, 80% to 90% of this specific component are materials that would be covered by CBAM.

At the same time, SMEs are less likely than big corporations to be able to redesign and adjust their production processes to increase the material efficiency in their production or to use alternative materials instead. Therefore, they would most likely be quite severely affected and their share of the market could potentially be taken over by imports because imports, using large quantities of those materials, would not be affected by the CBAM. It could cause a distortion there.

SMEs in developing countries in particular, if you are looking at developing innovative mechanisms—innovative production processes that are carbon neutral or close to carbon neutral, extremely low carbon, well below what the average product in that country is—might be very adversely impacted because they would be required to prove and verify that their emissions are well below what the national average is to be treated fairly by the UK in the CBAM procedure. There is a good chance that cost would be too high for them and, therefore, imports from those companies would decline.

Q35 **Cherilyn Mackrory:** From what I am hearing it sounds like there are very short-term adverse effects on the cost of living and cost of production for our domestic market as well as the overseas markets. You can see why this is quite difficult politically for a government to introduce. That would be short term—it would be if the magic wand said that CBAM started today. Can that be mitigated by doing it over a very long period to give companies a chance to readjust? Do you have research on that?

Dr Markkanen: Technically I suppose you could. In the EU the plan currently is that you would start asking importers in 2023 to account or record the carbon content of their imports but you would not ask them to pay anything until 2026. Even from 2026 onwards you would then have to deduct the benefits that local domestic producers get from the free allowances.

Considering how very small the most likely environmental impact of a CBAM is, it is a valid question to ask whether this is worth it, whether the benefits in emission savings would be sufficiently high to impose these adverse short-term impacts on consumers and businesses in the UK and on businesses abroad and worth the potential reputational risk on the UK of implementing a CBAM.

Q36 **Cherilyn Mackrory:** Thank you. Dr Mehling, I will turn to you and talk about freeports. According to academics at Lancaster University and Teesside University there seems to be a conflict between the policy of a CBAM and the policy of freeports. What is your take on that and what

possible environmental issues might arise?

Michael Mehling: Thank you for that question. If I may, can I also very briefly address the previous question?

Cherilyn Mackrory: Of course.

Michael Mehling: I also want to note that some research I have conducted with countries in the EU, trying to determine the economic impacts of introducing the CBAM, suggests that while the steel, cement, fertiliser and so on sectors will see gains in employment, gains in output and so on because it levels the playing field with growing competitors, it is indeed the case—as Dr Sato and Dr Markkanen pointed out—you will have spillover effects. For instance, the economic benefits in those basic material sectors were almost entirely offset, in the ex-ante modelling used in that impact assessment, by cost increases in higher value-added sectors like consumer goods, electric appliances and so on. Therefore, it is important to see the bigger picture.

While I also agree that purely focusing on the static environmental benefit may suggest the political, legal and administrative costs of introducing a CBAM seem perhaps not so worthwhile, I want to go back to what I said earlier. The politics of it, and how it affects the political debate both domestically and internationally, should not be underestimated. It is much harder to capture that, of course. It is very intangible. However, again, we have seen direct reaction, even citing the EU's announcement of a CBAM, from Russian, Turkish, Ukrainian and Moroccan officials saying, "Here is our plan. We're going to come up with a carbon price or we're going to move forward much quicker than we initially intended." Therefore, I think it is also really important to factor in these dynamic bigger-picture implications. That is not to mention, of course, also assuaging domestic constituencies, labour unions, trade associations and so on that you have their back as the country moves forward with decarbonisation.

Freeports is a complex issue. I absolutely want to disclose I am not an expert on that. I looked at the written evidence submitted by Professor Tyfield and Professor Yuille. I think it illustrates how the devil is in the detail with this instrument. Indeed, the more one works on it the more one sees these various exemptions and complications on the margins.

On special economic zones, I want to highlight that, for instance, in the EU and the customs process, there will also be some exemptions—inward processing, outward processing and returning goods relief—that will try to avoid applying the CBAM to products that are only manufactured and then exported again. I understand the freeports will have the same principle. For instance, if a product is manufactured with imported basic materials and domestic materials, it would only be subject to the CBAM or to customs tariffs and so on once it enters the UK market. If it is exported, it will not apply.

Prima facie, I can see the logic of exempting that from the CBAM. However, I also see what Professor Tyfield and Professor Yuille pointed out, which is that this suggests that there might be some environmental impact. You might, for instance, then have the perverse effect of stimulating more production in such freeport areas where the manufacturers have access to imported carbon-intensive raw material goods that they use in production, which could have an environmentally detrimental effect. I think it merits more research to understand exactly how much of that production enters the UK and would be subject to CBAM and how much will be exported and will potentially not be subject to CBAM.

There are ways one could also try to mitigate that by, for instance, helping to add transparency and support for low-carbon goods, low-carbon basic materials, ultra-low-carbon steel, ultra-low-carbon cement specifically in such freeports, with carbon contracts for different sectors targeting production there to maybe offset that. Ultimately it will be a political weighing of trade-offs, the economic benefits of having freeports versus the potential environmental disadvantages.

One thing I want to highlight is that how we treat exports, as Dr Sato already mentioned, has become one of the most important red-line issues in the European political debate. International WTO rules on prohibited subsidies make it very hard to exempt exports or to rebate or credit exports upon leaving the European Union customs territory. Of course, the same will apply to freeports. If these goods are exported, whether it comes from a freeport or even from outside the freeport in the UK, there will be a debate about whether or not they require some sort of protection and rebate under the CBAM to make them compete, or better able to compete, with the same product in global markets in third markets.

Q37 **Cherilyn Mackrory:** Thank you. That is very helpful. Dr Sato, if the UK were to introduce a CBAM, I think there has probably been quite a lot of research on what success looks like and how we can see that it is working very well. How can the Government in particular monitor its environmental and wider impacts?

Dr Sato: This is closer to my area of expertise: statistical techniques to ascertain causal inference and evidence on whether policies work or not. I think it will be very difficult to assess causal effect of the CBAM on reducing leakage, creating a level playing field and so on. I guess that we could keep an eye on the trade intensity and some of these carbon leakage indicators. However, there is likely to be a phase-in and phase-out period with the CBAM free allocation. Many other measures will be implemented at the same time to try to drive forward large-scale decarbonisation, like rapid investment in these sectors.

I think that we should focus more on to what extent CBAM really reduces uncertainty and delivers these investments for these sectors, even perceived uncertainty, how much the move to a CBAM really gives

confidence to the sectors that by going low carbon they will be able to recoup their investment costs and drive forward or kick-start that decarbonisation process. I think that is the key thing that we ought to ask. Close industry consultation is important for this rather than ex-post economic analysis in five or 10 years' time.

Cherilyn Mackrory: Thank you, that is great.

Chair: That concludes our questions to our second panel. I would like to thank Dr Sanna Markkanen for being able to join us today, Dr Misato Sato for joining us from wherever you are in the UK, and in particular to thank Professor Michael Mehling, who is joining us, I believe, from Washington DC, where I think he has gone to celebrate Thanksgiving tomorrow. We are particularly grateful to you for taking time out to join us today. Thank you very much indeed.

Examination of witnesses

Witnesses: Mike Thompson, Domien Vangenechten and Hannah Dillon.

[*This evidence was taken by video conference*]

Chair: We will now move to our third and final panel of the day, where we are joined physically in the room by one witness, who I will introduce when she has managed to sit down, and virtually by Mike Thompson, who is joining us from the Climate Change Committee, where I believe you are the chief economist, Mike. Welcome. Forgive me if I mispronounce this, we have Domien Vangenechten from E3G, and I think he may be calling in from Brussels. Thank you for joining us. We are joined by Hannah Dillon from the Zero Carbon Campaign, who I think has appeared before the Committee previously. Welcome, Hannah. Our first set of questions will be from John McNally.

Q38 **John McNally:** My set of questions are on CBAM as a tool for supporting decarbonisation and the role that CBAM might play on the path to net zero. The Committee on Climate Change said that free allowances alone are unlikely to incentivise long-term UK decarbonisation and recommended that work commence on developing either CBAM or product standards for imports. Mike, why has the Climate Change Committee recommended that the Government begin work on either CBAM or product standards for imports and what are the relative merits of each option?

Mike Thompson: Thank you. The fundamental shift for us has been that since the UK has adopted a net zero target it has become very clear that we have to tackle all of our emissions to get them down to zero. That means that there are no more hard-to-treat sectors that can be left alone and that particularly focuses our attention on to industry, which is trade exposed, and on to agriculture, which can be trade exposed. At the moment, we deal with that trade exposure by applying a carbon price but then giving free allocation of allowances so that industry ends up not having to pay the carbon price. That is a relatively weak incentive, and it

is not something that you can keep doing in the long term. Once you get your cap in your trading scheme down to zero, you clearly cannot keep allocating allowances and giving them away for free because there aren't any in total.

Furthermore, we are paying to subsidise industrial decarbonisation. That comes from the Exchequer. That obviously is a draw on public funds that poses a problem longer term for the public finances and is a bit of a weak signal again for investors who are relying on a subsidy. It is not as powerful as a market mechanism that is more likely to be enduring.

Our focus is that these mechanisms will not cut it in the longer term and, therefore, we need to expose businesses and industry, even when it is trade exposed, to a full and growing carbon price. If we are to do that and not to have any border mechanisms, you would risk carbon leakage. You have to have something at the border to see that off. CBAM is one option for that. As you have said, the product standard is another way of doing it. You would say that if we are applying a carbon price to UK-produced materials, that same carbon price applies to imported materials, or you would say that we will only allow UK-produced or imported low-carbon materials. You make sure you have a level playing field across the industries that you are trying to affect.

On the relative merits of the two, pricing is a more flexible mechanism. Regulation is generally a simpler and easier to implement mechanism, and that is essentially what we see as the differences here. The CBAM route would allow you to have more flexibility. It would allow you to distinguish between not just good and bad, so high carbon and low carbon, but different ranks of high and low carbon. You can have a spectrum there. A standard would tend to be that either it is green or it is not green, and you allow the green one. That, of course, means that the standard is easier to implement. It comes with that advantage of being easier to get through, easier potentially politically with some of the WTO rules, but not simple either.

Neither of these is a straightforward option to implement. The CBAM, with the flexibility that it has, would allow you, for example, to phase out free allocation while you phase in the CBAM, so an increasing proportion of the carbon price that has to be paid at the border as the proportion of free allowances reduces. It is much harder to do that kind of phasing with a standard. It is inherently a much blunter thing.

Q39 **John McNally:** Staying with you, Mike, following on from what you were saying, are the Government taking sufficient action now to counter the risks of future carbon leakage and what more is needed to be done?

Mike Thompson: Broadly speaking, the current mechanisms do work for addressing carbon leakage where we are now. We have free allocation of carbon permits for heavy trade-exposed industry. We have compensation or exemption for higher electricity costs that they face as a result of the carbon price, and we are planning subsidy mechanisms for bringing

forward, say, carbon capture and storage, and hydrogen switchover. That is taking the cost off industry so that it isn't exposed to carbon leakage, but it is not something you can keep doing for ever, realistically.

What we would like to see is a bit more rapid progress in developing these alternative mechanisms, developing the carbon border adjustment or developing the product standards. We know that there is a lot of tricky work to do there in the measurement, reporting and verification. We know that there is a lot of tricky diplomacy and politics to be got through, and we know that there will be a transition period. Even once we have committed to going in this direction, it will take a while to get it implemented. At the same time, we have already a review of the free allocation process that is going on. Other things are moving, and we feel that the CBAM and the product standard could do with catching up a bit with those policies.

Q40 **John McNally:** Thank you. Hannah, I will turn to you with a very simple and straightforward question: should the UK introduce a CBAM?

Hannah Dillon: A simple and short answer from our perspective would be yes, but I will provide a bit more context. The Zero Carbon Campaign has been looking at how we might extend fair and effective carbon pricing across more of UK domestic emissions over the past two years. We have been thinking a lot about how we can make these policies publicly popular but also politically viable. We absolutely think that there is a case for action to implement CBAMs because primarily it can level the playing field and create the conditions under which deep domestic decarbonisation can take place.

It can also enable, as Mike was just alluding to, gradually phasing out policies such as free allowances that are removing incentives for heavy industry to abate or reduce their emissions at the moment. It also enables us to do things like think about expanding carbon pricing across more of the UK economy. We know that the Government have committed to looking at that in the latest net zero strategy they have released, but particularly when we are thinking about expanding carbon pricing to sectors like agriculture, from our perspective CBAMs will be a very necessary part of extending carbon pricing to other sectors.

Carbon leakage and addressing the impacts of that has been talked about a lot today, but I will quickly make the point that as we strengthen domestic decarbonisation policies to try to drive progress to achieve our strengthened domestic targets, it is likely that the threat of carbon leakage, whether we agree that it exists now or not, might increase.

This was raised in a session earlier, but the impact that these can have—which was previously theoretical but now is becoming a reality in encouraging other jurisdictions to look at carbon pricing mechanisms very seriously—is very positive because importing jurisdictions would rather set up their own carbon pricing system and receive the revenues from it

than pay it to a UK Government. We are seeing that happening in practice at the moment.

To put that in context, currently I think 22% of global greenhouse gas emissions have a carbon price attached to them, which is fundamentally too few, and the average global carbon price is about $2, which in some jurisdictions, of course, is enough to drive change but in others it is absolutely too low.

As a final point, from our perspective CBAMs can create the market conditions for investment in low-carbon innovation, so it could be a really important export opportunity for the UK but globally too, to signal that decarbonisation is the direction of travel and it will be a competitive advantage to invest in low-carbon innovation.

We absolutely think it is necessary. I will include a few caveats on that. One of the concerns around CBAMs, which is absolutely right, is that if you focus on carbon intensity alone you could have some adverse impacts. It is not the only measure that we should be looking at. For example, thinking about agriculture, there is a world in which you could say that Australian agriculture and UK agriculture are equivalent because under some conditions you can grow cattle very quickly in crowded conditions over a very short lifespan and end up with a similar emissions intensity to what we have in the UK, but then you are forgetting things like animal welfare standards and environmental standards.

We think that CBAMs are absolutely necessary, but they are one of a suite of measures that is needed. When we think about the trade deals that we are striking, we need to think about ensuring equivalence of environmental standards, animal welfare and then—I am sure we will come on to this—how developed economies can effectively fund and support low-carbon transitions of developing economies. There is no point greening western economies if you are not doing anything with developing economies, too.

Q41 **John McNally:** That is an excellent point, yes. It seems to be unending that society's poor pay for the mistakes of society's richest, you think to yourself. You are probably right on the point you made earlier. I think the public, with everybody now very well educated, has an understanding of what needs to be done.

Could I ask you the same question, Domien? Should the UK introduce CBAM? Do you think there are any other alternative approaches that the UK should consider instead?

Domien Vangenechten: From my end, the answer is a bit less straightforward. I think it is logical that the UK is exploring CBAMs, for a number of reasons that have already been highlighted today. Obviously, when going for net zero and deep decarbonisation, carbon leakage is an issue that needs to be addressed. As has been said, the current ways of doing that are good for avoiding carbon leakage from taking place but are

flawed in the incentives for climate action for these sectors that are exempt from carbon pricing through free allocation, for example.

Likewise, politically it is logical that the UK wants to react to some of the developments that are taking place in other jurisdictions. The EU is exploring CBAM and has proposed a CBAM. We are seeing similar discussions in Canada, the US and Japan. It is only logical that the UK tries to react and define how it will approach those developments internationally and what kind of system it puts in place domestically as well.

Having said that, I think it has been repeated quite often that CBAM, at least the classical CBAM, is only one possible avenue. I think that product requirements have been mentioned here already. They are also an adjustment at the border that is not based on prices but on carbon content of products. Indeed, we have to look at a whole suite of policy options, some of which might be more suitable for some sectors than others. On the other hand, some policy options might be less contentious internationally and that might also impact your decision on whether or not to introduce such policies for those sectors.

Specifically on CBAM and the way we are discussing it—adjusting for the carbon price paid at the border—it is a very suitable policy solution for those carbon-intensive, trade-exposed sectors. It might be less suitable for sectors down the value chain, where we believe that the product requirement route might be a lot more suitable to address potential carbon leakage issues in sectors down the value chain.

When going to other sectors that are, for example, currently not priced—I think agriculture has been named before—we do not see CBAM as necessarily a good policy tool, most notably perhaps for the fact that it is very internationally contentious. The possibility of agriculture being included in the EU CBAM, for example, has been one of the main concerns from developing countries that were afraid that the sectors that provide more added value domestically would also be targeted by these policy tools.

It is very clear that CBAM is a contentious tool. I do not think it will lose that status. I think it will remain a contentious tool, so having a very limited approach to what kind of sectors are included in CBAM is a more pragmatic way forward.

I do not think it is part of your question, but I think it is important to highlight that we are quite often talking about unilaterally introducing a CBAM. That is what the EU is doing and that is also one of the main criticisms that a lot of NGOs and international partners have and some of the concerns that they have voiced against it. Co-operative approaches in designing a CBAM, in designing principles of how we apply this—what kind of sectors we apply it to, what kind of exemptions we introduce, if any, and what we do with revenues and so on—could go a long way in increasing the acceptability of this tool. There is a range of more co-

operative approaches that should be explored next to something that is considered contentious to also showcase good will while supporting the multilateral system for climate policy.

John McNally: Thank you.

Q42 **Duncan Baker:** I want to talk about current global context that might affect the attitudes towards CBAM. Hannah, I will start with you. Very simply, what role could CBAM or import standards play in reducing the UK's consumption emissions from imports?

Hannah Dillon: This is a really important point. If it is okay, I will pick up briefly on something that was said before. We acknowledge that CBAMs are contentious, but hopefully that can show how effective they could be. In a world in which decarbonisation initiatives have largely been voluntary, they might force jurisdictions to act where they might not want to.

Consumption emissions is the elephant in the room. I mentioned earlier that having a domestically net zero environmental rap sheet looks great but that does not account for the impact of British or other consumption abroad. As I understand it—and this is an ONS statistic—the UK is currently the largest net importer of carbon emissions among the G7 and 46% of our total carbon footprint comes from emissions produced abroad as a result of domestic demand in the UK. An IFS figure is that our consumption emissions in the UK are 37% bigger than our production emissions. It is certainly something we need to address and steps have been taken, a nod to the CCC that has made these recommendations to include things like emissions from international aviation and shipping in our Sixth Carbon Budget. We are taking steps to address it but certainly more needs to be done.

I have a few different points on the impact that CBAMs can have. One of the primary ones is that if we look at this pragmatically, carbon-intensive imports are artificially cheap at the moment. They do not reflect the environmental costs of production. Unless we start to do that, we are not going to have a huge amount of success in addressing the climate crisis. There are a lot of benefits here in environmental transparency, in the products we are importing and also in supply chains. As was said in the previous session, there is a lot of complication that comes with assessing emissions intensity of products, but it is also something we will have to put a lot more focus on if we want to start working out what is good environmentally and what is not.

We have talked about offshoring a lot so I will not talk about it too much here, but it can play a role in ensuring that more of what we consume both domestically and imported internationally is subject to more stringent environmental regulations as well as carbon pricing. That, of course, will encourage abatement, so hopefully can help to develop a system under which more of the products that we are importing are lower carbon.

As a note on revenues, CBAMs are theoretically going to be a revenue raiser and the revenue that would be produced from CBAMs should also be put towards environmental objectives. This was raised earlier, but if we can think about using some of the revenues from CBAMs to invest in decarbonisation abroad and helping developing nations produce products in a more environmentally friendly way, that will have an impact on our consumption emissions too.

There are lots of benefits and certainly it has been good over the last year or so to see more of a focus on the fact that the UK needs to take accountability for our consumption emissions as well as our domestic emissions.

Duncan Baker: Yes, absolutely. Mike, do you agree with that?

Mike Thompson: Yes. We came at CBAMs and product standards from the perspective of territorial emissions. We were coming at it from the view that this would allow us to do more in the UK to cut our territorial emissions—our UK-produced emissions—because it would allow us to have a higher carbon price without that free allocation and, therefore, with a pass through to the final consumer. It allows consumers, for example, to make choices between a high-carbon product that is made more expensive, which it is not today, and a lower-carbon product, which would also be more expensive and would be today.

It corrects the perversity of the current system that carbon prices are not really passed through. That helps to cut emissions in the UK, which as Hannah says is over half of our consumption emissions footprint. Additionally, it has the benefit that it encourages others to do more on their emissions. You get this double effect of being able to cut UK-produced emissions more quickly and potentially encourage deeper reductions in imported emissions as well.

Q43 **Duncan Baker:** Domien, can I bring you in? How close are we to the sort of multilateral agreements on carbon emissions that might render CBAMs unnecessary?

Domien Vangenechten: Obviously, we are hinting towards a global carbon price or a common global carbon price floor. There is definitely momentum around carbon pricing discussions globally. As has been mentioned before, we see increasingly more jurisdictions implementing carbon prices either through an emissions trading system or through carbon taxes.

At the same time, there is a tremendous push from some multilateral organisations or there are discussions at the IMF, the OECD and so on continuously pushing for the use of carbon pricing in any climate policy framework. CBAM has only added to this momentum, I would argue, where carbon pricing directly or indirectly is now being discussed in some other fora that in the past might not have given so much attention to carbon pricing, such as the WTO. Then we have had recently at COP26

the global rules for Article 6 emission trading on a global carbon market being introduced as well.

There is a lot of momentum, but we are still a long way away from having a uniform global carbon price or equalisation of carbon pricing over jurisdiction, and that is for a number of reasons. Some of the major economies are still very reluctant to introduce carbon pricing domestically, either willingly so or because of domestic reasons. Most notably, it keeps being a very difficult discussion in the United States. At the same time, especially talking about the EU perspective or the EU experience, it has taken us about 15 years to establish a relatively well-functioning system. It is a long learning process, a long learning curve, for companies as well as for policymakers. Different jurisdictions or different countries that are implementing carbon pricing policies are at a very different level of maturity in their system or have a very different scope for which sectors are included in their system.

A third point is to some extent the desirability of having a global carbon price or economy-wide carbon price, given the principles of common but differentiated responsibilities and historical responsibilities in taking a more leadership role and reducing emissions faster in some countries than others.

There is obviously scope for co-operation on carbon pricing, bilaterally and multilaterally, and we increasingly see that, but I do not think that we are close to a global arrangement that includes a global carbon price, no.

Q44 **Duncan Baker:** To finish off, starting with Hannah and going through—and if we can keep the answers quick and snappy because I know that the Chair will want to keep it that way—to what extent might the drive towards overall net zero policies and agreements globally end up making CBAMs or carbon clubs naturally more attractive overall?

Hannah Dillon: I definitely think it will make it more attractive. We are starting to see instances where that is happening already. The recent deal between the US and the EU on steel and aluminium is an explicitly environmental trade deal, which is exciting. I have not read it so I cannot pretend I have, but I understand that the Whitehall briefing explicitly said that others are welcome to join, so that is an open invitation to others to be part of that club.

On the notion of carbon clubs, we think they can go hand in hand with CBAMs, where you could have a coalition of the willing aligning on a carbon price floor, for example, outside of which you would introduce a CBAM, and we know that that can have positive impacts. I know that I am meant to keep this short, but the IMF has looked at this. It said that even at the G20 level if you had agreed a carbon price of US$50 for developed countries and $25 for developing, you could increase mitigation efforts versus what they are within the Paris agreement by

120%. We can see it happening. I think there is momentum here and that is exciting.

Duncan Baker: Yes, a way to go. Mike, what are your comments on that?

Mike Thompson: I agree that there is an emergence of a consensus around the move to net zero. That is adopted across 90% of global emissions roughly now. That opens up the politics of CBAMs to make it easier to get through. I agree with Domien that it does not mean that everyone is moving at the same pace. Countries are moving at different paces. They are using different policies domestically to do it, so there is still value in having a CBAM or a border adjustment of some sort and it is easier to get through.

Duncan Baker: Domien, to finish us off, please, on that?

Domien Vangenechten: My answer is very similar. Indeed, there is momentum, not only for CBAM specifically but the US-EU steel and aluminium global arrangement has been mentioned. It is still very early days to know what it is and whether or not it entails some kind of carbon club arrangement, but we also have to look a little bit beyond just carbon clubs or climate clubs that are solely based on the carbon pricing. There is a lot of momentum on industrial decarbonisation more broadly and we do look at CBAM in the context of decarbonising those energy-intensive industries. You see a lot of momentum around clubs that are not necessarily based on carbon pricing. The UK has always been at the forefront of this. We have the industrial decarbonisation agenda under the economic ministerial meeting. Last year under the G7 the industrial decarbonisation agenda was launched.

There are a lot of these co-operative club arrangements or club-like arrangements or initiatives that are taking off from the ground and are very promising to decarbonise these sectors we are talking about rather than just protecting against carbon leakage. They will do both, but it is also important to take this into account next to CBAM.

Q45 **Jerome Mayhew:** We have heard a lot about carbon leakage and we have heard a conflict of evidence this morning, I think it is fair to say, ranging from one saying there is no real evidence of it—it is highly questionable whether it actually exists in reality, certainly at the moment—to some of the written evidence that we have received from the chemicals industry saying it is not just something that will happen in the future, because there is clear evidence it is happening to their sector right now. They point to the lack of investment in the sector for the last 20 or 30 years when compared to investment in high-carbon economies elsewhere. Professor Sir Dieter Helm also gave strong evidence that this is a factor right now.

I want to explore, first of all with you, Domien, what we do about this. In the current system we have the allocation of free emissions trading

scheme allowances. This is our approach to carbon leakage. Can we carry on like this? Let's imagine that we just carry on with that as our policy response to the reality of carbon leakage or the threat of carbon leakage. Where does that take us?

Domien Vangenechten: As has been mentioned before, the system of free allocation is very effective if you look at only one objective, which is reducing the risk of carbon leakage. Likewise, I have not seen very much ex-post evidence of carbon leakage taking place, at least not until I think the last academic studies that go until 2017 or 2018 for data. Carbon price developments have been very different over the last few years. Prices are a lot higher than they were three years ago. It is not all emissions that are covered by free allocation. Free allocation is given at the level of the 10 best performers, so likewise what we are hearing here in EU discussions is that its carbon price is high. It has impacts or it has carbon leakage effects on those emissions above the 10% best producers. As I said, evidence is still lacking in that respect.

Q46 **Jerome Mayhew:** From a conceptual perspective—I am a former businessman—if you have an increase in input costs in one area and you can avoid that input cost in another area, why wouldn't you get carbon leakage? It may be that you do not relocate a factory because there are costs associated with that as well that might outweigh the benefit, but if you are taking an investment decision—is it here or is it there?—it is an obvious truth, isn't it, that you will go to the lower-cost jurisdiction? Why wouldn't you?

Domien Vangenechten: Obviously, yes, but it is a complicated decision. I am not an investor, nor have I ever been in a leading position in a company, but understand that the issue of competitiveness or the issue of where you make investment decisions is a lot more complex than just looking at carbon constraints and climate constraints. There is a whole suite of impacts or factors that make up the decision of where you produce and where you invest, including labour costs, stability of—

Jerome Mayhew: Yes, there are all sorts of factors that go into an investment decision, but input cost is a key one, isn't it? We would all accept that.

Domien Vangenechten: Yes.

Q47 **Jerome Mayhew:** Okay, thank you. Mike, coming on to you, on the technical challenges, we have heard quite a lot about some of the pushback against CBAMs or investigating CBAMs. It seems to coalesce around this general feeling that they are too complicated, that it is too hard to do this. Could you please explain from the CCC's perspective what these technical challenges are and how we can get around them? How can we address them?

Mike Thompson: It is worth saying that in a sense we are getting beyond the level of policy detail that the CCC looks at. To engage with the question, you clearly need to be able to measure the emissions

footprint of the product that is being traded. You need to have some kind of monitoring, reporting and verification for that, and ideally you need an agreement internationally about how that is done. You would like to have alignment internationally, for example, with what the EU is doing and what the US is doing so that you avoid unnecessary bureaucracy and red tape for it. You would like to align it to other UK policies that are out there. I mentioned the phasing out of free allocations. That is an obvious one that you need to get the technical details right on.

You need to also look at any new risks of leakage that you introduce. I think this was talked about a bit in earlier sessions. If you introduce a CBAM on primary products—steel, electricity, for example—but not on final products like cars, you could create a situation where the car manufacturer moves offshore, does the assembly offshore, and then that is imported to avoid the tax. That is probably not a big enough issue that it ought to bite that much, but those are a few things that you would certainly need to look at. We have not done an in-depth study to list out all of these, but those are some that you need to do.

Clearly, at the front end of that, the emissions footprinting and the MRV is the one that gets a lot of focus. There is a policy decision there about how specific and detailed you go with that, whether you use benchmarks that you apply quite broadly, whether you try to literally estimate the carbon footprint of each different product that is coming through and trace all of its inputs across the integrated global supply chain.

Q48 **Jerome Mayhew:** On that point, the general approach has been to probably start quite simple, walk before you can run, and start with the big five, possibly electricity as well, but we have heard competing evidence on that, and then you have the potential to roll out as your confidence and competence increases. Is that the sort of approach that you think might make sense?

Mike Thompson: Yes, absolutely. This is one of the reasons why we have said work should be starting on it now. The work is both to do that well but also to understand how well you really need to do it. There will be shortcuts; there always are. Some of those will be acceptable and some of them will fundamentally undermine the policy. It is quite difficult as a policymaker sitting in Whitehall to work that out, so you have to get on with it. You have to do your consultations. You have to gather the full evidence in sessions like these, of course, to inform that. That is what it points to. It points to getting on with it now and, as you say, starting simply with a fairly small number, like the EU is doing, with a view to rolling it out more widely beyond that.

Q49 **Jerome Mayhew:** In our discussions we have mentioned product standards as well. Would it be correct to describe your view as being that it is both/and. We are not getting a silver bullet with a CBAM, we are not getting a silver bullet with product standards, and some of the challenges that you have in a CBAM you will have also in assessing embedded carbon, for example, in products. We need to get on with both of them.

Have I précised your evidence accurately?

Mike Thompson: Yes, it is, it is both/and. I would add public procurement into there as a kind of step to the standards. In particular, Domien mentioned the deals that are coming out of COP. As part of their plans, they are looking at building up the methodology for it, the way of reporting, the way of evidencing it. Some of these can also be avenues into the other one. You might start with something simpler like a procurement as a route to moving towards CBAMs, for example, as well. Yes, it will be horses for courses to some extent. For something like electricity it may be relatively easy to trace that through as to what the carbon footprint is. Once you get into the higher end of things, standards may be easier things to apply, perhaps.

Q50 **Jerome Mayhew:** Yes, thank you. Finally, Hannah, I want to discuss the evidence we have heard about the impact on consumers. On the one hand, that is the point, isn't it? We want to unleash the power of the free market so that consumers can see a price differential between a high-carbon product and a lower-carbon product. On the other hand, that is politically quite challenging sometimes because no politician likes to put the price up on anything. How do we address that? What is your advice?

Hannah Dillon: It is an important question and a lot of the work we have been doing has been looking into this and how you can ensure a greater focus on equity, domestically and also in the way that we treat emissions reductions internationally, which we have spoken about today. The other point is to factor the environmental costs of production into products and services but also to encourage investors and businesses to produce products in a more environmentally friendly way, which gives more freedom of choice to consumers.

It is worth saying that carbon pricing always gets saddled with this, but it is a factor of broader environmental policies that some of these things will have cost impacts. They are also going to have positive impacts in other ways. We have done a lot of work with this. We brought together, working with the Joseph Rowntree Foundation and the IPPR, anti-poverty groups and green groups to work through what the challenge is, where the poverty risks are in the net zero transition and how you can address them. I am happy to submit that as evidence as well. We have a suite of principles but also recommendations.

The Government have a responsibility to use both policy and fiscal measures to address the distributional impacts of decarbonisation, whether that is through things like VAT cuts on low-carbon products or provision of grants. Things like carbon dividend have been given quite a lot of airtime recently, which is exciting. It is something that we have been talking about.

The danger here is that we either design a system that has no impacts, which means it is not working, or we just pretend it is not going to have impacts and do not take it by the horns. Certainly, through all the

research that we have done, the public opinion polling, working with industry and so on, there is a way through to make sure that as many people as possible—and this is the point that we have been making—have access to the net-zero transition and are able to benefit from it, regardless of circumstance.

Of course, interventions will happen, particularly at the vulnerable and low-income household level, to help facilitate that, but ultimately under a system of carbon pricing that works, you will increase access to low-carbon products and they will be cheaper than high-carbon products. Whereas at the moment, to be honest, it is essentially a middle-class privilege to be able to live a low-carbon lifestyle because you can afford it.

Q51 **Jerome Mayhew:** We have had written evidence from WWF on this area. Are you aware of an opinion poll that it has commissioned of 22,000 residents in the United Kingdom, where they were presented with a number of policies to support a lower-carbon transition, and the most popular one with the public right across the political spectrum was a reasonable tax on carbon?

Hannah Dillon: Yes, it was music to my ears because I have been telling everyone that for two years. It was 94% of 22,000 people. It is also worth saying this was in the context of being educated about what these different policies are. It was not just saying, "Do you think polluters should pay for the damage that they can do?"

Jerome Mayhew: It was not just that someone else can pay, yes.

Hannah Dillon: I think that is really exciting, but again in a lot of the opinion polling that we have done this comes with caveats. Yes, you need to put a price on carbon and you need to ensure that polluters pay; you also need to use the revenues from that price to invest in supporting low-income and vulnerable households through the transition in a variety of ways.

Hypothecation has come out in a lot of our polling, and I know that it is not a Treasury-friendly line. We have found in lots of the testing that we have done that you are more likely to get support for initiatives such as pollution pricing if you ring fence the revenue from those initiatives and you invest that in people, essentially. I know it is not the most Treasury-friendly thing to say, but it certainly makes these policies way more politically popular, which is, of course, the challenge.

Q52 **Jerome Mayhew:** This is my final question. Do you think—shock, horror—that the public might be ahead of politicians on this one?

Hannah Dillon: I think that you are being ungenerous to some politicians and probably overly generous to others. I do think it is really important. There was polling this week—and I have not read it in detail, so I do not want to misrepresent—that essentially put concern about climate change ahead of things like wanting to invest in the NHS. That

has been important over the years, but we see that, regardless of age, where you live in the UK, political affiliation, financial background, there is unprecedented support across all sorts of divides for action on climate change.

In our own polling, we found that 77% of the British public want to see a clear and transparent plan for how the UK Government facilitates decarbonisation, and that includes things like looking after vulnerable households, recognising that fuel poverty and food poverty are not different things. They are the same things; it is poverty and you have to address all of these things at once. Of course, for certain households that are trying to choose between heating their homes and eating, even if they are able to do either of those things properly, they are not going to care about carbon border adjustment mechanisms and that is completely reasonable.

I think that the public are definitely shouting very loudly that this needs to be addressed, and it is very exciting that mechanisms like we are talking about today are getting proper engagement.

Jerome Mayhew: Thank you very much.

Chair: If you have some research that you are willing to share with us on public opinion, I think it would be very helpful for the Committee to have sight of it. Thank you.

I would like to conclude that panel by thanking Hannah Dillon from the Zero Carbon Campaign, Mike Thompson from the Climate Change Committee and Domien Vangenechten from E3G for joining us today. I would like to thank our Committee clerks, particularly Martyn Atkins, and members of the Committee who have stayed with us through the whole Committee hearing.