

# DÁIL ÉIREANN

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## AN COMHCHOISTE UM CHUMARSÁID, GNÍOMHÚ AR SON NA HAERÁIDE AGUS COMHSHAOL

## JOINT COMMITTEE ON COMMUNICATIONS, CLIMATE ACTION AND EN- VIRONMENT

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*Dé Céadaoin, 16 Bealtaine 2018*

*Wednesday, 16 May 2018*

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Tháinig an Comhchoiste le chéile ag 3 p.m.

The Joint Committee met at 3 p.m.

Comhaltaí a bhí i láthair / Members present:

Teachtaí Dála / Deputies	Seanadóirí / Senators
James Lawless,	Tim Lombard,
Eamon Ryan,	Joe O'Reilly.
Bríd Smith,	
Brian Stanley.	

I láthair / In attendance: Senator John Dolan.

Teachta / Deputy Hildegarde Naughton; Seanadóir / Senator Hildegarde Naughton sa Chathaoir  
/ in the Chair.

*The joint committee met in private session until 3.35 p.m.*

*Deputy James Lawless took the Chair.*

### **Implementation of National Mitigation Plan: Discussion (Resumed)**

**Vice Chairman:** I welcome the delegates and look forward to hearing their contributions in our discussion of the national mitigation plan. By virtue of section 17(2)(l) of the Defamation Act 2009, witnesses are protected by absolute privilege in respect of their evidence to the joint committee. However, if they are directed by it to cease giving evidence on a particular matter and continue to so do, they are entitled thereafter only to qualified privilege in respect of their evidence. They are directed that only evidence connected with the subject matter of these proceedings is to be given and asked to respect the parliamentary practice to the effect that, where possible, they should not criticise or make charges against any person or an entity by name or in such a way as to make him, her or it identifiable. Any submission or opening statement made to the committee will be published on its website after the meeting.

I welcome the delegates who will engage with the committee on the implementation of the proposed actions included in the national mitigation plan. If they could keep their presentations on topic, that would be great. On the format of the meeting, it is proposed that the main delegates speak for five minutes each. If delegates in a group wish to share their speaking time, that is fine, but five minutes is the total allocated to each group. Each member of the committee may then ask questions and will have three minutes in which to do so initially. There will be scope for a discussion to and fro but only within the time available to us. We will hear all of the presentations first before proceeding to take questions from members. Is that agreed? Agreed.

Before the presentations commence, there was an error in the Official Report of the meeting on 24 April. The official record of the meeting on page 17 stated the following: “The expectation is that we will be several percentage points short of the 68% binding target to be met for renewables by 2020”. Of course that figure should have been 16% and not 68%, quite a difference. I acknowledge the correction to the minutes, which will be reflected in the written record.

Our first witnesses represent the Institute of International and European Affairs, IIEA. We have Mr. Joseph Curtin and Mr. Max Muenchmeyer with us today. I invite the witnesses to make their opening statement.

**Mr. Joseph Curtin:** I thank the Vice Chairman. It was nice to meet him a couple of days ago. I am delighted to be here. It is always an honour to be invited to speak to this committee. My colleague and I are delighted to contribute to the committee’s debate on implementing Ireland’s climate change strategy.

To be brief, I want to focus on two issues in our opening address, but we are happy to take questions on any issues arising. First, I will make a few comments about the national mitigation plan. Second, I want to talk about how we can meet Ireland’s climate objectives by reducing income taxes. Reducing income taxes is something that I know politicians often like to do, so I hope that if I talk about the opportunities for reducing income taxes, that might capture the

committee's attention.

As members will know, the Government's climate strategy envisages that we will exceed our climate targets for 2030 by between 87 and 113 million tonnes of carbon dioxide emissions. It could actually be more than that, because of how rapidly the economy is growing and how quickly the dairy sector is expanding. An analysis of the draft mitigation plan that the institute produced last year made a number of observations. First, we said that the plan makes no provision whatsoever for the cost that failing to meet the obligation might impose on the Exchequer. Second, the plan did not assess the dramatic overshoot and what implications that will have for the key sectors individually. Third, there was no analysis of the relationship between strategies for individual sectors, for example, Foodwise 2025 and our carbon budget. Finally, very few new measures were brought forward in the national mitigation plan.

There have also been a number of critical developments since this plan was published. On the positive side is the national development plan, which made a number of highly ambitious commitments to climate investment. On the negative side, the Department of Finance produced an estimate which suggested that the Exchequer would be liable to €600 million per annum in total compliance costs by 2021 if we fail to take action. That is €600 million euro per annum between 2021 and 2030. Lastly, Ireland's climate target for 2030 was finally agreed by the European Parliament on 17 April 2018. On the basis of these three developments and the shortfall or the shortcomings we identified in the original national mitigation plan, the first point we want to make is that it may be time for a new national mitigation plan already. If the plan is to spend billions of euro of taxpayers' money to buy compliance instead of decarbonising at home, this should be made explicit in the plan.

The second point I wanted to make concerns how we can address climate change by reducing labour taxes. The national mitigation plan promised in 2018 that Government would provide an examination of the impact of the carbon tax. I want to state that between 2008 and 2016 the share of labour taxes as a proportion of overall taxation rose from 31% to 36%. This has damaging impacts. Obviously it reduces the incentive to work, it damages economic competitiveness and it reduces the growth potential of the economy. The biggest opportunity for immediate climate action is to reduce these income taxes. In our written statement we illustrate several ways that this could be achieved - through modification of the universal social charge, USC, or the 20% or 40% income tax rate. Before I come to the catch, I note that this would yield €500 per annum to every taxpayer in the country. The catch is that we would need to increase the carbon tax by €50 per person, and that would offset the overall reduction in tax take to labour taxes. Taxing bad things like environmentally destructive pollution makes sense, especially when we get to alleviate the burden on hardworking families at the same time.

Increasing the carbon tax in this manner gives householders choices. It encourages short-term and long-term behavioural change. Electric vehicles and hybrids are going to become much more attractive, because petrol and diesel will be pricier by about 13 cents per litre. Many commuters have options to avail of public transport, walking and cycling, but of course not all commuters have options of those kinds. Many people are locked into car-dependent lifestyles and would need to use some of their tax windfall to pay for additional transport costs, at least until the time comes to purchase a new vehicle.

Another area of concern is home heating. An electric heat pump or a wood-burning stove will suddenly seem like a great deal. The incentive to invest in a retrofit, which many families are considering already, will become a greater priority, and thriving new economic sectors will arise to meet those needs. A bale of briquettes and a bag of coal are going to be more expensive,

so wood-based solid fuel heating products will take up more and more shelf space in stores over time. If the tax can be accompanied by low-interest loans to help householders make deep retrofit investments, all the better. In fact, I think this would be very important.

It is obviously essential to ensure that the impacts are managed carefully for the most vulnerable in society. Increasing welfare payments and fuel allowances can offset the negative impacts for the elderly, the unwell and the unemployed. We often hear that there are no solutions to climate change from the Government. While an increased carbon tax is certainly not a silver bullet and it would not solve all our problems, it would be a good start. It makes every other measure that we need to achieve easier to achieve. It makes the Government expenditure required for things like subsidies for heat pumps or home retrofit lower because fuel costs will be more expensive, so these measures are more attractive by themselves. Practically every single climate expert in the world who might testify to this committee would say that an increase in the carbon tax is not a silver bullet, but it has to be at the absolute core of a coherent national climate strategy. What we need now is not more analysis but some focus on implementation.

**Vice Chairman:** Our second presentation is from Trócaire. Our witnesses are very welcome to the committee. I invite Ms Garvey to make her opening statement.

**Ms Niamh Garvey:** We would really like to thank the committee for the invitation to contribute to today's session on progress in the implementation of the national mitigation plan. In our contribution, we will look at the global context of climate impacts and climate action in which the national mitigation plan is set. We will then conclude with a few concrete recommendations to the committee. I will be handing over to Ms Cliona Sharkey for those recommendations.

Globally, climate impacts are already at crisis levels. In Ireland, Europe and elsewhere in the rich world we are becoming increasingly aware of our vulnerability to extreme and erratic weather. Poor countries, however, which have contributed least to the problem and have the least capacity to cope, are being hit first and hardest. In countries where agriculture is the major source of food and income for people living in poverty, the situation is devastating. Today in Ethiopia alone, almost 8 million people are in need of food aid as a result of persistently poor rains compounding the drought of 2016 and 2017. That is more than the entire population of the island of Ireland.

Drought is not a new phenomenon in east Africa, but we are seeing drought spread to areas that were not affected in the past, and we are seeing the gap between droughts decreasing, with long-term development work needing to give way to cyclical humanitarian response. Families are unable to recover before the next drought hits, resulting in a downward spiral of poverty, hunger and vulnerability. According to the Intergovernmental Panel on Climate Change, given the stock of carbon now in the atmosphere and current emission pathways, the impacts are set to manifest increasingly over the next decade and increase thereafter. Trócaire and other organisations will continue to support communities to increase their resilience to climate shocks and to provide humanitarian relief each time it is needed. However, there is a limit to what efforts of this kind can do. Delivery on the commitments made in the Paris Agreement to limit warming to 1.5° C above pre-industrial levels and holding it well below 2° C at most is absolutely essential if we are to avoid further climate impacts to which these communities, and indeed our own societies, cannot adapt. In this context, it is critical to ask whether the national mitigation plan, NMP, pursuing a transition in line with the temperature limits Ireland signed up to as part of the Paris Agreement. The answer is "No". Regrettably, while we can debate the details of the NMP and its implementation, unless we acknowledge and address this fundamental issue, we

are undermining the hard-won progress of the Paris Agreement and we are tacitly accepting the significant additional impacts associated with a rise of 2o C or more and all of the human, environmental, economic and political risks that this will entail globally and for our own society.

Importantly, moreover, it is also clear that since the adoption of the Paris Agreement that the EU's collective emission reduction ambition, like that of all individual countries, will need to increase if it is to be brought into line with the temperature limits set out in the agreement. The pathway that is implicitly set out for Ireland in the NMP is one of minimal reductions over the next decade, followed by an increase in reductions in the period coming after 2030. In their in-depth report on global emissions UN scientists, who are part of the UN environmental programme, are warning us that unless we increase action and ambition in the short term, delivery of the temperature limits set out in the Paris Agreement will become virtually impossible.

**Ms Cliona Sharkey:** Thankfully, in recent months, thanks to the political leadership from a number of EU member states, the European Council has requested the European Commission to produce a new EU long-term climate strategy in accordance with the Paris Agreement. Let us be in no doubt that this is the beginning of a necessary process to increase the EU's collective ambition. In this context, it is also worth recalling that the Paris Agreement itself contains a so-called ratchet mechanism, which requires all parties to regularly increase their ambition and action. Ireland's obligations to reduce emissions are only going in one direction and the pressure to increase short-term ambition is set to increase.

On another positive note, energy system modellers in University College Cork, UCC, have recently published a study on options for bringing Ireland's energy system transition into line with a global pathway aligned with the Paris Agreement. Critically, they highlight that short-term national mitigation ambition needs to increase to play this role in meeting the Paris Agreement goals. Based on their modelling of Ireland's energy system, they conclude that this is possible and can be done at significant cost, but while continuing to grow the economy. Importantly, like the Environmental Protection Agency, EPA, they also highlight that delay makes the transition challenge all the greater and increases costs. While no one model can or should give us all the answers, their work, like that of others, clearly indicates that there is a need for significantly greater ambition if Ireland is to do its fair share to contribute to deliver on the Paris Agreement and that this greater ambition is possible.

The Paris Agreement was a diplomatic triumph and a testimony to what political leadership can do. National and international experts are telling us that, while difficult, a Paris-aligned transition is possible, including here in Ireland. Political leadership is what will decide whether we remain on the path we are on or whether we will join those who are increasing their ambition by embracing head on the challenges and opportunities of the inevitable transition, which is in all our interests, and out of respect to those for whom we know climate change impacts are already too much.

I mention the recommendations we would like to leave with the committee. Looking at the national mitigation plan, we propose action 1 which is to publish an updated analysis on transition pathway scenarios to 2050. We urge the committee to write to the Minister to ask him to ensure that the terms of reference for the commissioning of this analysis explicitly request only scenarios that are aligned with the Paris Agreement and can be justified as Ireland's fair share of a global effort to deliver on this agreement. This is to ensure that we do not have a repeat of the current situation with the national mitigation plan as it stands.

We are also sincerely grateful to all the parties and all elected representatives who are cham-

pioneering and supporting Bills that seek to increase climate policy ambition in Ireland over the past year, including the Fossil Fuel Divestment Bill, and we urge the committee to see all of these Bills through to enactment as soon as possible.

The report and recommendations of the Citizens' Assembly provide a clear and highly legitimate basis for near-term policy developments that can increase ambition beyond that contained in the NMP in the short term. We urge the committee to establish a workplan as soon as possible to consider and provide a report to the Oireachtas on the Citizens' Assembly's recommendations on climate change.

**Vice Chairman:** Thank you, Ms Sharkey. I call Mr. Joe O'Carroll of Renewable Energy Consumers and Producers, RECAP.

**Mr. Joe O'Carroll:** I thank the Vice Chairman and members of the committee for the invitation to address them again. We are delighted to have this opportunity to present our views on the NMP and in particular the energy aspects of that plan. I will read the opening statement and my colleague, Mr. Bill Sadlier, a senior investment manager at NTR plc, will take any questions members of the committee may have.

At this stage of their work, members do not need reminding about the urgency of taking meaningful action to avoid the full impacts of climate change or the fact that Ireland is well behind its targets. Our over-arching observation of the NMP is that similar to the renewable electricity support scheme, RESS, consultation document, it lacks a sufficient level of urgency or ambition. We appreciate the broad nature of the plan and the difficulty with co-ordinating the inputs from a wide range of stakeholders, so we not here to criticise the Department but to offer assistance from the significant weight and resources our membership base holds.

Unfortunately, the narrative around renewable energy continues to suggest that the transition from fossil fuels to renewable sources of energy will involve a net cost increase to the consumer. We previously presented analysis conducted by Baringa that outlined how we could achieve a greater proportion of renewable electricity combined with the right flexible technologies without increasing electricity costs. To achieve this, it is important to have the correct blend of renewable technologies, including onshore and offshore wind, solar photo voltaic, PV, and bioenergy. In the areas of heat and transportation, increased electrification is certain but there will also have to be developments in biogas, hydrogen and district heating.

The scale of the task at hand is easily under-estimated, therefore it is essential that all the resources available to the State, including the semi-State companies, are properly co-ordinated and targeted to achieve the best outcome in terms of greenhouse gas emissions reduction.

Having reviewed the transcript from this committee's meeting of 24 April, it is appalling, but not surprising, that we, as a State, are now resorting to buying compliance with our 2020 targets through the use of statistical transfers despite Ireland having far better renewable energy resources than the majority of member states. It is not that long ago that 2020 seemed some distance into the future and perhaps that explains the lack of urgency in the past. Our real fear and the fear of our membership is that 2050 is the new 2020 and that the lack of urgency will be allowed to prevail. This simply cannot be allowed to happen.

The overall framework of activity involving the NMP also includes the national development plan, NDP, and more recently the preparation of a national energy and climate plan, NECP. RECAP is firmly of the belief that the NECP is the most important document that we



should now collectively focus on. It is due to be drafted by the end of this year and in some respects is our final chance to get the level of ambition and urgency right, as it will guide our activities out to 2030 and beyond.

We calculate that we need to treble our rate of deployment of renewable energy if we are to optimise the energy transition. Around the globe we are increasingly seeing renewable energy projects being delivered with little or no subsidy but this is happening only in jurisdictions where there is a clear and ambitious vision for renewable energy that is articulated publicly and State and industry work together to remove barriers and lower the costs associated with project development. This is the model that we must follow.

Therefore, we wish to offer, on behalf of RECAP, to work with the Department, which is the main co-ordinating body for climate action, to prepare and implement an ambitious vision with a programme of activities that will allow the quickest and least-cost transition to a 100% renewable energy future which we know to be technically feasible. In doing so, we will stimulate employment and economic activity in rural Ireland while protecting and enhancing the natural environment.

We recognise the resource constraints within the Department so RECAP is willing to provide the secretariat for this working group which would undertake to provide regular reports to this committee. The scope of the group would be agreed with the Department and its purpose would be to provide a more efficient channel through which the vast knowledge of RECAP members can be made available to the Department in its efforts to accelerate climate action and to ensure that the NECP seizes on the great opportunity that we are now presented with.

Progress on renewable energy cannot continue to be stifled either by the erroneous notion that more renewable equals greater costs or by targets imposed on the State but by the opportunity for Ireland to have lower energy costs with a lower carbon impact and for renewable energy to become a key Irish export in the near future. I thank the committee.

**Vice Chairman:** Very good. I thank RECAP and Mr. O'Carroll. Our fourth and final opening presentation is from the Irish Environmental Network. We welcome Mr. Oisín Coghlan from Friends of the Earth and Professor Barry McMullin from the Dublin City University, DCU, school of engineering. I understand Mr. Coghlan is sharing time with Professor McMullin. Is that right?

**Mr. Oisín Coghlan:** Yes, and Professor McMullin will go first.

**Professor Barry McMullin:** An Taisce, as a nominated member of the Irish Environmental Network, is very pleased to have the opportunity to appear before the committee. We have provided a detailed written submission, so in these opening remarks I will confine myself to the national mitigation plan's overriding objectives and overall fitness for purpose.

We agree with the quite trenchant criticisms of the plan that have been expressed by the Climate Change Advisory Council but we would prefer to be even more plain speaking about it. It is our view that the national mitigation plan, as currently constituted, is so fundamentally flawed that it should actually be withdrawn and reformulated in its entirety. This process could be integrated with the preparation of the national energy and climate plans, NECPs, that are required this year anyway. We think they should be formally integrated together in recognition that the current plan is not fit for purpose. The underlying basis of the plan - and our colleagues in Trócaire have already referred to this - is the quantitative climate mitigation targets adopted

originally in the national policy position of 2014. We are particularly concerned that these self-adopted national targets are now clearly inadequate and obsolete. It is widely agreed that the current collective commitments expressed by the parties to the Paris Agreement fall far short of what is required to meet that agreement's temperature goals. As a good faith participant in the agreement, it is therefore essential that the mitigation targets in the Irish national policy should be urgently updated to reflect this new reality. Concretely, we propose, as applies to carbon dioxide in particular - and there are different nuances to different greenhouse gases - that the national target should be expressed quantitatively as a limit on our national "fair share" of the global carbon budget, as it is called. This basically sets a limit on the amount of carbon dioxide we as a nation will ever emit at any time into the future, a fixed limit within which we guarantee we will live. We will have exited completely from fossil fuels by that time. Just such an approach has recently been proposed by the European Parliament for adoption at European level as part of the governance regulation.

Based on our own assessment of the scale and urgency of action that this now implies, we suggest that the required rate of mitigation, that is, the rate at which carbon dioxide emissions in particular must be reduced year on year, is now an absolute minimum of 6% per year and, to take proper regard of equity, global justice and a prudential approach to the uncertainties in climate change, should probably be closer to 12% per year. A very rapid exit is now required. This fundamentally changes the way one would approach the matter and the steps one would take, and we need to be clear about that. This would absolutely require wide social understanding, acceptance and co-operation. We think the model of the Citizens' Assembly can be scaled up as part of the national dialogue or otherwise, and many lessons can be learned from that. We are very heartened by the response from the citizens in the Citizens' Assembly, and we commend that to the committee as a model.

In conclusion, we really are pleased and delighted that the committee is engaging with the national mitigation plan and with this issue and holding hearings on it. If there is anything further we can do at any stage to support that, we would be delighted to do so. I will hand over to my colleague, Mr. Oisín Coghlan, now.

**Mr. Oisín Coghlan:** It is almost a year since the national mitigation plan was published. Our analysis at the time was that was "more an action promise than an action plan" and simply did not contain enough measures to cut pollution. This verdict has been confirmed by the critique of the Climate Change Advisory Council, which said the plan needed new and extra measures to be fit for purpose, and the Environmental Protection Agency, EPA, when it presented its analysis of our rising emissions. Even more recently, the European Commission country report on Ireland for 2018, published in March as part of the semester process, stated: "As [the plan] stands ... it offers few specific new mitigation measures." The EPA is due to release new projections in about two weeks time. Given the current state of its methodology and Irish policy, it is very likely the projections will project even more increases in Irish emissions. As members know, the Taoiseach himself said that Ireland is a laggard on climate action and that he is not proud of our record. For us, given everything the committee has heard, the obvious conclusion is that the current national mitigation plan simply is not fit for purpose and needs to be scrapped and replaced.

There a number of ways this can be formally triggered. The Minister himself can trigger a revision or a replacement of the mitigation plan on foot of the latest periodic review of the climate council, under section 4(5) of the Climate Action and Low Carbon Development Act 2015. This is specifically provided for. The Minister has called the plan a living document



and has said it will keep changing. The council says new measures are required. The prudent course of action, then, is for the Minister to formally trigger a revision. This could be integrated with the national energy and climate plan that is now required. The second way is that the Dáil could call for the mitigation plan to be replaced. I think all opposition parties represented on this committee voted for such an amendment to the climate Bill that would have required the mitigation plan to be voted on by the Dáil because it is so important and because of its five-year duration. Of course, there is nothing to stop the Dáil organising itself to have such a debate and such a vote to call on the Minister to revise the plan. A third way is that the Government could decide it needs to revise the plan on the basis of the evidence, of the landmark Citizens' Assembly report and of the need for the national energy and climate plan under the Paris Agreement's EU's plans to implement that.

What can the committee do now? We think it should write to the Minister asking him to trigger the revision of the mitigation plan on foot of the critiques of the climate council and the Citizens' Assembly. We call on the parties that are represented on this committee to organise time for a Dáil debate to that effect. Specifically, it is also about the Citizens' Assembly report, which is to the Oireachtas and not just the Government. As members know, we wrote Stop Climate Chaos to both the Business Committee and to this committee saying it is really up to the Oireachtas to ensure that that report is treated with the same seriousness as the Oireachtas treated the report from the assembly on the eighth amendment and that some kind of dedicated committee needs to be put in place to ensure that happens in as timely a fashion as possible. We look forward to hearing the committee's plans for that.

**Vice Chairman:** To briefly come in on that last point, we are conscious of that correspondence and those items are under consideration. I am sure Mr. Coghlan will be glad to hear. I thank the four groups and all the speakers. I will now open the floor to members who have questions. Deputy Ryan may be stepping into the breach in many ways shortly, so I will invite him to go first and then I will come around to the other members.

**Deputy Eamon Ryan:** Very good. I was going to be shy and wait for the others, but I will start if the Vice Chairman so wishes.

I have been struck by a number of details that have been put out recently. I think yesterday the record in global emissions of carbon dioxide in the atmosphere was reached at 412 parts per million, the highest ever - well, in-----

**Mr. Joseph Curtin:** In 800,000 years.

**Deputy Eamon Ryan:** In 800,000 years. I saw another frightening figure last week: the move from 400 parts per million to 410 parts per million had occurred in just five years, whereas the move from 390 parts per million to 400 parts per million took six years and the move from 380 parts per million to 390 parts per million took seven years. In other words, there is an accelerating concentration of carbon in the atmosphere, and that is there for thousands of years, no matter what we do. It is scary that, as I think John Gibbons said yesterday, the clock is ticking more loudly every day when one looks at the effects of this that we are already seeing on the natural world. I mention this just as a backdrop. The work the witnesses are all doing in Trócaire, Friends of the Earth, the Irish Environmental Network, the International Energy Agency, IEA, and others is really important in raising this issue in the public discourse. There is an urgency to this.

In respect of some of the comments that have been made, I will briefly ask specific questions

concerning the recommendations, starting with Mr. Joseph Curtin. The main recommendation in his presentation is for a carbon tax, not, as he says, as the silver bullet, but as a key measure. I would not rule that out, but would Mr. Curtin not agree that the scale of change required, given what Professor McMullin has said we want, is complete system change rather than marginal change? It is interesting that the Department was before the committee two weeks ago pretty much advocating carbon taxes as one of the main tools it is now considering. However, the difficulty is that carbon taxes give marginal change rather than system change. For example, I do not think the issue as to whether we move to electric vehicles and so on will be determined that much by whether 13 cent is put on the price of diesel. Thirteen cent has been put on the price of petrol in the past two years with no effect, it seems to me, in terms of system change in our transport system. The switch to a low-carbon transport system and all the benefits that would come from it require State decisions around investment in the charging network. It is a regulatory issue. If the State is saying that from 2030 we will have no more new combustion engines, let us regulate that. I do not disagree that it is one of the components but I fear that the over-reliance on carbon tax allows the State to step back from the decision to say, “we do not have to do anything, we can just put on a carbon tax and, hey shazzam, the market will deliver”. This is just one fear I wanted to raise.

With regard to Trócaire - and I pick this one example from a whole range of points that have been made here today - I very much agree that one of the things we should start with is an acknowledgement that our current level of ambition is not sufficient. It has a fatal flaw. By stating there will be an 80% reduction in our emissions by 2050, it allows every sector off the hook because each sector is saying that it will be the 20%, it will be the sector that does not have to act and it will then point the finger at every other sector. This is happening in our system. Has the Institute of International and European Affairs, IIEA, done any assessment of this, or can it refer an assessment to the committee? If Ireland is to abide by, and ratchet up to, its commitments to the Paris Agreement when it kicks in, what is the scientific analysis of what our targets should be? Does the IIEA have a figure in mind of what the Paris Agreement is likely to mean, given that talks on the agreement are ongoing?

I agree with Mr. O’Carroll that the narrative that renewable energy will cost us is fatally flawed. I also agree that the scale of our ambitions should be to treble rates of renewable energy. If we look at 2030, as opposed to 2050, does Renewable Energy Consumers and Producers, RECAP, have an outline of what this would mean in each of the main renewable energy categories such as offshore wind, onshore wind, rooftop solar, field solar, geothermal and so on? Does RECAP have a recommended figure for 2030 on how many megawatts or gigawatts of each would be needed?

Professor McMullin spoke about the need to reduce our rates of CO<sub>2</sub> emissions. In his brief comment, the professor concentrated on CO<sub>2</sub> and did not look at methane, nitrous oxide or other greenhouse gas emissions. I am concerned about the proposal, as set out here, on the quantitative fair share of global carbon budget. How is land use included in that proposal? What is being done on land use climate related emissions?

Mr. Oisín Coghlan’s analysis is absolutely correct - as are others I have heard here - regarding the new national climate and energy plan. I understand that this plan will be the new plan because it will automatically trigger an amendment to the national mitigation plan. The national climate and energy plan will become the new plan, it will be accepted as the national plan and the national mitigation plan will, effectively, be redundant. Perhaps the witnesses will let us know if they have a different view on this. I understand that this plan covers not just energy;

it is about land use and other areas. As the Vice Chairman said, this committee's responsibility is to respond to the Citizens' Assembly report and to use the review in a very productive way to influence how the new national climate and energy plan is framed in the next six months.

I will finish on a slightly frightening note about the acceleration of climate greenhouse gases in the atmosphere. The real fear is that it comes at a time when actual emissions are not rising. They are rising because of global growth but it appears that the natural system's capability to absorb what we put in must be starting to break down. This accounts for the faster rise in concentration of greenhouse gasses in the atmosphere than is being admitted. The ability of land and sea banks to store the carbon now seems to have reached a frightening point where the natural systems that have so far protected us from the effects are gone. This is why the challenge and the sense of urgency are all the more real.

**Vice Chairman:** I am not sure what particular order witnesses would like to respond to the questions. Who would like to respond first?

**Mr. Joseph Curtin:** I thank Deputy Eamon Ryan for his comments. I am not here to try to sell a carbon tax. I am here to try to sell a reduction in income tax. If this is an argument that the committee finds convincing, then perhaps this is how the committee can sell it to the public also.

On systems change, hundreds of thousands of homes in Ireland still use oil in their heating systems. No other country in Europe can believe that this is the case in Ireland. When we consider the countries that have achieved systems change, for example home heating systems in Sweden, it has a much higher carbon tax than the level I propose. A carbon tax makes every incentive that needs to be given to decarbonise the economy more attractive. I am not disregarding the need for other measures and carbon tax is not a silver bullet. I am a strong believer in the need for a whole range of measures. Government cannot just come forward with a carbon tax, wash its hands and say that it is mission accomplished. Carbon tax has to be at the core of a climate strategy, but it is only one aspect.

Deputy Ryan referred to electric vehicles. Ireland was out of the blocks quickly on electric vehicles when Deputy Ryan was the Minister for the Communications, Energy and Natural Resources. Since then, however, Ireland has made no progress in putting in place an effective charging network for electric vehicles. A carbon tax will not solve that problem. It will not solve every problem but it is an essential component of an effective climate strategy, and it is something we can do immediately in budget 2019. There is no reason why it should not be part of budget 2019.

**Vice Chairman:** Before we take another response, I apologise for having to leave as I have a double booking this afternoon. Deputy Ryan will chair the rest of the meeting.

*Deputy Eamon Ryan took the Chair.*

**Acting Chairman (Deputy Eamon Ryan):** We have a new world order. Would Ms Cliona Sharkey or Ms Niamh Garvey wish to respond to the other questions I asked?

**Ms Cliona Sharkey:** Trócaire's expertise is more on the impacts of climate change rather than on the very technical analysis that goes into drawing up the pathways and proportionate shares of different countries. I defer to colleagues with expertise such as Professor McMullin who highlighted that Ireland's annual emissions would need to be on the basis of 6% to 12% per year, compounded, in order to be aligned with the Paris Agreement pathway.

Trócaire is very attentive to the idea of an equitable global pathway to delivering on the Paris Agreement given the disproportionate contribution of rich countries such as Ireland to the problem, and the disproportionate impact of climate change on those countries that have contributed least and that have least institutional financial capacity to cope. Ireland's fair share contribution to delivering on the Paris Agreement involves not only domestic mitigation here, but also contributing financial and technical resources to developing countries to support them to adapt to the impacts and to ensure they can develop in a zero-carbon way. This is an important part of the fair share discussion.

While Ireland has contributed to the global finance commitments for climate action in developing countries and has, commendably, focused on adaptation or pro-poor climate action in developing countries, proportionately Ireland contributes much less than our EU counterparts. We would like to see this contribution increased, alongside Ireland's domestic mitigation ambition.

**Acting Chairman (Deputy Eamon Ryan):** Are there any other comments?

**Professor Barry McMullin:** I thank the Acting Chairman for his insightful comments and questions. He queried the emphasis on carbon dioxide. I said that in the case of carbon dioxide, we thought it should be done this way, but that was not intended to suggest that there is no issue, particularly with methane and nitrous oxide. We need broad action on all of them. The question of how to balance action on different pollutants is scientifically complex and I will not go into all the details here. In essence, however, carbon dioxide trumps everything else. If we do not get the carbon dioxide issue under control, it does not matter what we do with methane and nitrous oxide. There is a hierarchy of action here. We absolutely must act in respect of carbon dioxide. Acting effectively on methane and nitrous oxide buys us a little extra time, not a lot, to deal with carbon dioxide. It is time measured in a few years or decades, not time in terms of centuries. However, we need action on all climate pollutants, not just carbon dioxide.

In terms of the analysis of what the targets should be and what would be Paris alignment, it is a complex area. Coincidentally, I will be presenting at a conference next week on this subject, wearing my academic hat, as part of an EPA-funded project. A paper on that will be submitted for publication shortly and I will be delighted to share it with the committee as soon as it is fit to read. In essence, however, and getting slightly quantitative for a moment, in order to come up with a specific limit on how much carbon dioxide a particular country should permit itself - the structure of the Paris Agreement is bottom up - there is a scientific element and there is an ethical and value element. It is not a scientific answer. It depends. How much does one value other people who are not living here? How much does one value future generations? How much does one value the natural environment? These are ethical issues, so one cannot get a single scientific answer to that. However, one can set an overarching limit.

I will give my personal perspective on that. Taking what I regard as an absolutely minimal interpretation of global equity and a minimum deference to equity, which is basically to allocate every person living today in the world an equal share of the remaining carbon budget, and taking seriously the precautionary principle, which says that in view of scientific uncertainty one should act now on the basis of the conservative view of the science, and given the minimal interpretation of the Paris Agreement, which says we need to keep temperature rise definitely below 2°C over the pre-industrial, putting all of that together, one comes up with a remaining carbon dioxide budget for Ireland of roughly 400 megatonnes. This includes land use. It is net carbon dioxide from fossil energy, agriculture and carbon dioxide sequestered in land use, if there is any. That 400 megatonnes compares to current annual emissions in excess of 40 mega-

tonnes. Basically, it is less than ten years. That is a minimal interpretation of all the things I mentioned.

Before we get into the ethical issues, I will quote David Roberts, an online environmental journalist, who said in the last week, “the chances of us overdoing it - trying too hard, spending too much money, reducing emissions too much or too fast - are effectively nil.” There is no risk that we will do too much. Wearing my An Taisce affiliation hat, our impression in An Taisce - this is not unique to Ireland but it is particularly noticeable here - is that we seem to have a fixation on the risk that we will do too much, spend too much and overreact. From a scientific point of view, that ship has sailed. There is no possibility that we will overreact. Setting really strong targets for ourselves is a good faith contribution to the international agreement with which we have engaged. It is a collective action problem. We need support from our friends in Europe and globally.

We have invested a huge diplomatic effort in the national interest around Brexit, but the threat of climate change puts Brexit in the penny place. We should be mobilising as much diplomatic effort as we can internationally, but we can only do that with any credibility if our diplomats can go abroad and say that we as a small nation - a rich nation but not very rich in certain senses - with very limited natural resources are doing our bit and this is how we are doing it. If we can say that, we can have influence on the European and global stages. However, if we cannot say that, we are contaminating and undermining international action and that will be bad for every other country in the world as well as ourselves. It is simply bad for us.

**Mr. Joe O’Carroll:** I will address some of the Acting Chairman’s questions and Bill Sadlier will speak on the 2030 targets. It is worth drawing the attention of the committee to work that has been carried out by Stanford University called the Solutions Project. It has identified the pathway to 100% renewable energy for 139 countries around the globe, including Ireland. It has quantified some of the high level benefits of achieving the 100% renewable energy target. In terms of jobs, it identified the creation of 35,500 new permanent jobs to achieve 100% renewable energy, and it defines a permanent job as a job that will exist for more than 40 years. Leaving aside all the benefits from the job creation and the investment, it has quantified the health benefits alone as in excess of €10 billion per annum by lowering and removing air pollution resulting from fossil fuels. All of that can be achieved with no extra cost to the consumer. It is worth making the point that if there was a technology company in Palo Alto that provided us with an opportunity to create 35,500 permanent jobs and benefits in that order, every politician in the land would, quite rightly, have a pathway beaten to the door of that company. That is the scale of the opportunity we have. We wish to move away from talking about costs. The move to 100% renewable energy is a massive opportunity. Even outside the economic benefits it has huge social and environmental benefits.

**Mr. Bill Sadlier:** As part of our RESS submission, we modelled the impact of various technologies for the consumer cost and the cost of electricity. One is looking at approximately 7 GW of additional renewable energy by 2030. To put that in context, we will have 3.7 GW of renewable energy at the end of this year. It has taken us approximately 20 years to get to where we are now. We have another 12 years to treble that. It is a significant leap forward from where we are today. We took the low carbon living scenario and the consumer action profile from EirGrid and we modelled the impact of electricity prices with those technologies. To answer the Deputy’s question, they would cut across a number of larger scale renewable energy projects from onshore wind, offshore wind, ground mounted PV, rooftop PV to flexible behind the meter demand response, storage and more interconnection. It was to look at how we can stand



behind a low cost, zero-impact cost to the consumer and a reduction in electricity prices. If one starts the roll-out of an additional 7 GW of additional renewable energy on top of the 3.7 GW we have today, it is a very positive story. However, and this refers back to what Joe O'Carroll said in his opening statement, that is a tremendous gap for us to bridge.

The Department needs to embrace RECAP's offer in terms of delivering that. It is trying to deliver renewable energy and to incentivise people to invest but there are issues with planning, which was seen most recently with the Apple case. We are trying to attract foreign direct investment to Ireland but there is no visibility in terms of how one can connect one's projects to the grid. The CRU came out recently with its enduring connection policy for one round but give no visibility beyond round one. What will happen in four or five years in respect of how communities engage with investment in renewable energy projects? We are looking at greater interconnection, microgeneration and net metering. That is what RECAP is here to say to the committee and we would like to put out our hand to the Department to figure out how we will do it. It is all well and good to publish the NMP and statements but one needs to understand how the plan will be developed.

**Mr. Oisín Coghlan:** On the subsidiary question regarding the relationship between the NECP and the existing NMP, the requirement for a process to produce the NECP is the opportunity to upgrade, revise and replace the NMP but we must not run the risk of assuming that is what will happen in a process we can all be proud of if we do nothing because it is my understanding that the Government's first idea was go to the Commission and ask whether it could use the NMP as the first draft of the NECP at the end of this year. Thankfully, the Commission said "No" because that is not the template required under the draft governance directive. However, the Government's second plan appears to be to send some poor civil servant off into a corner to write this in the dark without thinking of the Paris Agreement and other obligations and without publicly consulting other stakeholders. Apart from not being in the spirit of the Paris accord and the energy White Paper which refers to a societal transformation and putting communities and citizens at the centre, that would be a huge missed opportunity. That is why it is important that we at least formally agree that this should be a revision of the NMP because under the Climate Action and Low Carbon Development Act 2015, revising the NMP requires specific consultation and input from appropriate stakeholders. It is also possible that the Government could produce the NECP without talking to the Climate Change Advisory Council. That is why we need to publicly, explicitly and formally integrate the two processes rather than just hope for the best that one will replace the other.

**Deputy Brian Stanley:** The discussion is useful but perhaps questions from a few members could be taken at once as all the witnesses are replying to each question. We can carry on as we are otherwise.

There could be a correlation between a reduction in income tax and increased carbon tax, and changes in habit and behaviour. The big concern about that relates to low income households. If somebody is earning less than €24,000 a year, they are not in an income tax bracket while the majority of pensioners and all those on disability allowance, for example, do not pay income tax. Part of the solution in this respect is to retrofit their homes but they often are in the coldest and hardest to heat homes. Unless it was front-loaded, I do not see how an income tax reduction would work. It should be borne in mind that half of the workers in the State who get up early in the morning, according to the Taoiseach, earn less than €28,000. There is another cohort on social welfare or whose earnings are less than the minimum wage of approximately €19,000. Tax reductions would also have to be front-loaded for retrofitting their homes. The

retrofitting will be deep because many of them are in the oldest of houses. How will that dichotomy be resolved? If it is not, a huge section of the population will be driven into fuel poverty, which nobody wants. I agree that the tax code will have to change. All the witnesses can respond to that question.

I said in this room and in the Dáil four years ago when we took the climate action Bill that the lack of binding sectoral targets in the legislation would be a fatal flaw. Do the witnesses feel binding targets are needed at this stage? The projected increase in agricultural emissions is between 4% and 5% over the next 18 months while it is between 10% and 12% for transport emissions in comparison to 2015. The projection for the non-ETS sector is between 4% and 6% below 2005 levels whereas the minimum target reduction should be 20% by 2020. Given that we are way off the targets at this point, how do we achieve acceptance of the need for binding sectoral targets?

RECAP addressed the energy mix going forward and Mr. Sadlier might like to elaborate. He mentioned Stanford University research and it is useful to reference that. Currently, I can go home and plug in my electric car but the power I am using to charge the battery could be generated by coal, peat or a nuclear plant. We have to change the sources of power quickly. What is the ideal energy mix over the next two or three years? What are the main obstacles and opportunities in this regard? I agree with Mr. Sadlier that the conversation should be about the opportunity and not about there being a problem. The conversation needs to be turned on its head. What are the immediate steps the State needs to take to make progress over the next two or three years? I agree with everyone that the State's record is shameful. Some of us predicted this. When the Climate Action and Low Carbon Development Act 2015 was going through, I said that we would hit a carbon cliff and now there is a high one in front of us with no planning done to address it. The Government is just drifting and hoping everything will be all right.

**Acting Chairman (Deputy Eamon Ryan):** I will call Deputies Smith and Senator O'Reilly before the witnesses reply.

**Deputy Bríd Smith:** I thank the witnesses for their contributions. My first question is for Ms Cliona Sharkey of Trócaire on the issue of inequality. I agree completely with the Acting Chairman that we do not just need to deal with climate change but that we also need a system change. In her presentation Ms Sharkey spoke about global climate impacts being at crisis levels. She has pointed out that in the rich world we are becoming increasingly aware of our vulnerability to extreme weather conditions, but the poor countries that contributed least to climate change and that have the least institutional, financial and technological capacity to cope are being hit first and the hardest. Is there any way by which we can measure how inequality impacts within rich countries in the context of climate change? We must look at this issue in a global way because not everyone in the developed world is responsible for the problem. It is the case that not everyone in the developed world is refusing to take responsibility for the developing world; rather, it is a tiny percentage - the rich - who are responsible for most of the problem. Is there any way by which we can measure it? I heard Mr. Kevin Anderson make a presentation recently in which he spoke about the wealthiest 5% in the world being more responsible than everyone else. Is there any way to measure it to illustrate the point better?

The recommendations made by Trócaire are excellent, in particular, the call for regular updates on the transition pathway to 2050. Reference has been made to the need to support legislation, including the fossil fuel divestment Bill and the climate emergency Bill. The organisation has also called for the establishment of a work plan as soon as possible to consider the recommendations made by the Citizens' Assembly. The committee must deal with the outcome

of its deliberations as a matter of urgency. It came together, did great work and made many recommendations, but we are not going through them systematically. Perhaps I am wrong about that. Its recommendations may be on the agenda for consideration at a future meeting, but we must address them urgently.

I wish to ask a number of questions-----

**Acting Chairman (Deputy Eamon Ryan):** I am sorry to interrupt, but we did discuss that issue earlier in private session.

**Deputy Bríd Smith:** That is good. Was a date set to discuss the recommendations made?

**Acting Chairman (Deputy Eamon Ryan):** Yes, we did.

**Deputy Bríd Smith:** That is fine.

The delegates from RECAP made a very strong statement. They said it was appalling but not surprising that, as a state, we were resorting to buying compliance with our 2020 climate change targets through the use of statistical transfers. I agree with them and welcome their strong statement. I ask them to comment on how we could use the possibility of our facing fines of €17 million per year for failing to reach our targets as an argument in favour of spending money now to deliver renewable energy resources. Not spending money on the public transport system, to retrofit homes and on other initiatives is a shocking waste of time in the context of the survival of the planet, especially if it means that we will end up spending large sums in fines. I would like to see a statistical estimate and how we could spend the money required now, rather than paying fines in the future. That is the budgeting required.

The representatives of An Taisce spoke about scaling up the model of the Citizens' Assembly. That is a brilliant idea. It would be very democratic and also possibly the only thing that would work. We could sit here, week after week, in a bubble or a vacuum, separate from what the Citizens' Assembly has done, communities would like to see done and what the delegates are working on. I ask them to give us some concept of how we could scale up the model suggested. Do they think the climate emergency Bill and the fossil fuel divestment Bill would help? Could they help in putting a bomb under the establishment and forcing it to do something about these issues?

**Senator Joe O'Reilly:** I welcome our guests and will begin with a comment. We have to strike a balance. Effectively, we are close to full employment. A few days ago approximately 800 permits were permitted for non-EU nationals to come to work in Ireland. That is a wonderful development for them and the country. It is part of our responsibilities, as legislators and leaders, to balance the need to have people working and accommodate more people coming into the country with the need to deal with the very real issue of climate change. I am not for one moment suggesting we do not deal with the issue; nor am I disputing the science or the importance of the targets set. However, a balance must be struck in the achievement of those targets in the context of the impact on real people. I know that the classic response is that we will replace the jobs lost with others in the alternative energy sector, but there is a process involved in that regard.

There is no point in members of the committee lauding everything the delegates have said. We must stress-test what has been presented to us as much as we can, even though we may come at it without scientific qualifications. On the presentation made by Trócaire, one of the classic arguments made by people involved in the agriculture sector is that if we curb our lev-

els of food production to minimise transport or methane gas emissions, for example, forests in the developing world which are important in dealing with global warming will have to be cut down to replace the food not produced here. Furthermore, replacement food would have to be imported, which would give rise to huge transport costs and thus increased emissions. How do the delegates respond on the balance that needs to be struck? I note what the representatives of Trócaire have said about the horror of what is happening in the developing world. I am interested in how we can strike a balance in that context.

The community in County Cavan whence I come has taken to wind energy generation with huge enthusiasm. It is one of the few communities where there has not been a negative reaction to or a popular protest against the development of wind farms. There has been no example of not in my back yard, NIMBYism. Ironically, many of the people who engage in NIMBYism would also be among the first to say we need to deal with carbon emissions and the impact of global warming. The reason my community took to wind energy generation so well was the leasing arrangements with the small farmers on whose land the wind turbines were located. The leases are a source of income for them and have made an enormous difference. Community inputs are also important.

The classic argument being made against wind energy generation is that it is inordinately expensive and heavily subsidised. I would like the delegates, specifically those from RECAP, to comment on or refute that argument, if possible. I do not believe it and believe it is important to develop the wind energy sector further. Microgeneration of wind energy has significant and unexploited potential for individual householders. How can we improve on it? We have underdone the solar energy sector. In what way would the delegates be prescriptive in developing it? How can we increase our use of solar energy, even though it may have limited potential for job creation?

**Acting Chairman (Deputy Eamon Ryan):** We will have to suspend the sitting because there is a division in the Dáil.

*Sitting suspended at 4.50 p.m. and resumed at 5.20 p.m.*

**Acting Chairman (Deputy Eamon Ryan):** We are resuming in public session. Senator O'Reilly was finishing his question.

**Senator Joe O'Reilly:** A motion on my area of responsibility will be taken in the Seanad at 5.30 p.m. and I have no option but to leave. I will read the responses to my question in the Official Report. It is a pity that is how it worked out. I had asked about microgeneration and wind energy. The areas the North-South interconnector will pass through are Monaghan, north Meath and part of Cavan. The people affected are collectively of the view that it should be undergrounded. EirGrid's response is that if it is undergrounded, it will be less accessible for alternative energy, notably wind energy. Do any of the witnesses want to respond to that point? How could we reconcile the two conflicting issues given the overwhelming public meetings taking place to demand undergrounding? There have been suggestions of civil disobedience if the interconnector is routed overground.

The co-operative movement at the end of the 19th century and into the 20th century was transformative for Ireland. The potential of co-operative movements such as the credit unions and ordinary co-ops to deal with the alternative energy question needs exploration and should be supported by Government. There should be support for communities coming together to produce alternative energy as a collective, generating their own energy and becoming self-

sufficient.

On education, I do not have empirical evidence and do not see much anecdotal evidence of third level, post-leaving certificate education in the areas of alternative energy and decarbonisation. I am aware of some courses in Dundalk Institute of Technology but am not aware of any effort across the board at third level to get these courses in. They would generate jobs, interest and community activity.

It would be interesting to do the figures on the potential fines if we do not reach targets and to see what the money spent on fines would achieve if used to support green energy and avoid missing the targets. If those figures could be put into some marketable, presentable form I think there would be buy-in. To what degree would the potential fines mitigate the problem in the first place?

I thank the witnesses for their time. I will read the answers with interest.

**Acting Chairman (Deputy Eamon Ryan):** I apologise for the suspension. I ask witnesses to be as concise as possible in their responses for fear another vote may be called in the Dáil. We also have another panel coming up in our own committee meeting. I invite witnesses to respond to Deputy Stanley's, Deputy Bríd Smith's and Senator Reilly's questions.

**Mr. Joseph Curtin:** I am grateful for the questions. Deputy Stanley raised the issue of carbon tax. I will address this and then ask Mr. Muenchmeyer to answer the sectoral questions. Deputy Stanley put his finger on the button. It is the distributional issues around the carbon tax that make it difficult to achieve. For that reason, a 1.5% reduction in the lower 20% rate of tax to start off with would yield a tax reduction in the region of €900 million or approximately €500 per person. The tax credits and tax-free allowances have been reduced very dramatically. The tax-free allowance kicks in at about €2,000, is that correct?

**Deputy Brian Stanley:** There is a lot of low pay. I was looking at a constituent's wage slip this morning who was drawing €32,000 for a man, a woman and two children and he is not in the tax bracket.

**Mr. Joseph Curtin:** He has the combined tax credits from both parties. We need to start with the taxes everybody pays such as universal social charge, USC, and the lower rate of tax. That is the starting point to make it as progressive as possible. Then we need to look at the benefits system to compensate those who are not in the tax net. The evidence suggests that retrofitting is a core component of making this work and ensuring that programmes like the warmer homes scheme are properly funded. Those programmes are targeted generally at people who are in receipt of some form of benefit. Through a combination of those measures and through careful design, this can be done in a progressive way.

**Deputy Brian Stanley:** They are not targeted at deep retrofitting. There is a deep retrofit pilot scheme under which a certain number are being done.

**Mr. Joseph Curtin:** I absolutely agree. There is no more passionate proponent of deep retrofit than myself. It is something I have worked on for a decade. We need to bring those issues together.

I will hand over to my colleague, Mr. Muenchmeyer, on the sector issues.

**Mr. Max Muenchmeyer:** I will briefly point to two features of the energy union gover-



nance regulation which, as we speak, is in inter-institutional trilateral negotiations in Brussels. The outcome of those will be important.

On renewable energy targets, the governance regulation specifies sectoral trajectories for heating and cooling, electricity and the transport sector will have to be included in the plans. It specifically mentions sectoral targets as an option in greenhouse gas reductions and energy efficiency. Once those sectoral targets are set, if set within the energy and climate plans, the Commission will then hold Ireland to those targets and they would have to be included in the periodic reports to the Commission.

The issue of fines was raised. Ireland is likely to miss its binding renewable energy target under the 2020 renewable energy directive. If we see fines as a penalty payment that is imposed by the European Court of Justice following an action pursuant to Article 258 of the Treaty on the Functioning of the European Union, they are quite an unlikely option. The average time in environmental cases for a fine to be handed down by the European Court of Justice is about four years. It is interesting to note, and is connected to the ongoing trilateral negotiations, that the Commission proposal sets the 2020 target as a binding baseline share. Article 27 of the proposed governance regulation specifies that if a state does not maintain that baseline, under the Commission proposal, it would be required to contribute to a financing platform administered by the Commission. Those funds would then be used for investment in renewable energy projects throughout Europe, which means the fines will be invested in renewable energy in any case. The way in which the contribution will be calculated will be up to the Commission but the projects may be in Ireland.

**Ms Niamh Garvey:** On Deputy Bríd Smith's question on inequality, we know that the richest 10% of people contribute 50% of global emissions, while in all countries, rich and poor, it is the poorest who are most impacted, such as in the case of Hurricane Katrina or the heatwave in Europe several years ago. We need a global transition that is equitable as well as equitable transitions within countries. There are models, which I would be happy to share with Deputy Smith at another point, on how to work on some of this and Trócaire is very supportive of measures related to just transition domestically as well as internationally.

On legislation, the climate emergency Bill and other Bills being brought forward to tackle the problems and offer potential solutions are vital to increasing ambition and facilitating transition. We are very supportive of the range of Bills currently before the House.

Senator Joe O'Reilly asked about agriculture. Agriculture and land use are responsible for 30% of global emissions. To stay within the 2 °C limit requires tackling this on a global level. The great thing about the Paris Agreement is that it covers all countries, rich and poor, big and small, that have signed up to its goals. Therefore, all countries, whether big or small, rich or poor, have obligations under the agreement. Ireland needs to concern itself with doing its fair share to meet those objectives, including in the area of agricultural emissions, rather than pleading special cases for particular sectors. All countries have particular sectors that concern them. By doing our fair share, leading by example through diplomacy and encouraging and supporting other countries to do their fair share, we will get there collectively.

**Mr. Bill Sadlier:** Deputy Stanley spoke of a carbon cliff, but what it really comes down to is action and accountability. We have known this is coming for the past ten years. There has been no grid connection offered in Ireland other than from wind since 2008. There has been no route to market developments since 2015, when refit was extended. We have had a four year void in the area of renewable energy auctions. The result is that there will be penalties of between €200

million and €400 million per annum, which will be paid from the Exchequer and ultimately the population. Who is accountable?

On the energy mix, it must be diversified in order to create sustainable security of supply and competitiveness. What we need to do, and it is part of the engagement that Renewable Energy Consumers and Producers, RECAP, envisages having with the Department, is progress the renewable energy auctions because these are what trigger more renewable energy deployment in the immediate term. Without establishing a route to market for solar, offshore and wind energy, etc., people will not invest in grassroots community development and utility development projects to enable that energy transition. We need a clear plan from the Commission for Regulation of Utilities, CRU, and ultimately the Department for grid development over the next ten years to meet our 2030 targets.

**Deputy Brian Stanley:** Has Mr. Sadlier seen any evidence of a clear plan at this point?

**Mr. Bill Sadlier:** No, to be frank. We look to other European member states for guidance and they are generally ahead of us in how they plan. France, for instance, set out with a renewable energy plan. It announced it would auction 500 MW of wind and 500 MW of solar every six months for the next five years. People can now start to invest in community projects through the planning phase, which is a long, laborious process in need of reform. In Ireland there has been a complete absence of activity for the past four years.

**Professor Barry McMullin:** I will not attempt to answer all the questions but I will take some together. They are useful and insightful.

There has been extended discussion around the taxation system and the possible measures under it. I am not a tax expert but the distributional implications are very important. Deputy Stanley is rightly drawing attention to that. Everything we do in the areas of subsidies or taxes has implications for that and we need a joined-up view of how those things play out. There are other innovative instruments which we have not attempted to use yet, such as the universal basic income or having taxes on certain activities tied to distribution on a population-wide basis. These could be among the issues we might examine.

Deputy Bríd Smith asked about scaling up the lessons from the Citizens' Assembly and trying to get wide societal engagement. The Citizens' Assembly has demonstrated it can be very effective in engaging a representative set of citizens with access to independent reputable advice, but where they are in charge of the process and get to determine what they discuss, how they discuss it and what questions get asked, and where there is genuine dialogue as opposed to lectures from experts, which do not work. How does one scale it up? One has to spend money. By comparison with the other measures we are talking about, however, this is cheap. We have seen this week in the context of the citizens' dialogue the announcement of the first really substantive event. It is a regional event in Athlone in the midlands later in the summer. That is well and good but that is a region that covers perhaps one third of the country. What we need is something that reaches down virtually into every parish in the country and that gives access to people throughout the country on an extended basis, over a year or 18 months. Perhaps ten times the resources that are currently being contemplated are needed.

In terms of overall national expenditure, what we are talking about is trivial. We are talking a low number of millions of euro over a two-year period. The idea that we would not be willing to spend money on a device to engage the entirety of our society in something that will affect us, future generations and the rest of the world for decades to come is extraordinary. We need

to talk about investing the very modest amount of money required to have the staff, in the order of approximately 50, and to engage in administration, training and the hosting of hundreds of events over 18 months or two years. In each case, one is talking not only about relying on people volunteering to participate, because that was not the Citizens' Assembly model. On a town, city or county basis, one can use the Citizens' Assembly model of identifying a random stratified group of representative people and invite them. Of course, they will not all come but one can back off from that. That is a much better way of getting representative participation than relying on the interest of volunteers, as with the first regional meeting. Bearing in mind the lessons from the Citizens' Assembly on how to engage, make engagement bilateral and have access to expert advice, all these things can be scaled up. Admittedly it costs money but the costs are utterly modest by comparison with the scale of what we are talking about and the opportunity to engage our entire society in what is a fundamental generational challenge. I do not believe we should quibble over that.

Deputy Bríd Smith asked about the Fossil Fuel Divestment Bill and the climate emergency Bill. We support both. In both cases, the fundamental physical reality is that we have already available to us on a global basis far more fossil fuels than we can safely use. We must engage in limiting that, both upstream and downstream. There is no point in operating just on the consumption side; one might as well do it on the supply side as well. The Bills speak to that. We support both of them.

A question was asked by Senator Joe O'Reilly on balancing economic development, particularly in respect of jobs, and the transition. He is absolutely right. We very strongly support the need to consider distributional effects, just transition and the inequity within our country, quite aside from the inequity internationally. There are ideas that need to be put into operation. They cover tradeable energy quotas, the fair flying tax and initiatives that tie actions to the activities that are disproportionately responsible for emissions. There are ideas but we just need the will and collective social discussion, through a scaled-up Citizens' Assembly process, to implement them.

I cannot comment on the technical specifics of the North–South interconnector. The committee would have to get EirGrid representatives in to explain that.

With regard to education and training, I come from the education sector. We would love to do more but we need the societal buy-in. In this regard, I must refer again to the scaled-up Citizens' Assembly process. There is no widespread cultural perception in Ireland that there is a major challenge with which we all need to engage, not in terms of replacing light bulbs but in terms of engaging in collective societally agreed and largely political action. Everybody needs to be engaged, however. Greater educational opportunities, among many other goods, would flow from that if we got it right.

**Mr. Oisín Coghlan:** On the issue of carbon tax, Deputy Stanley's good question on how one ensures any rise in that tax is not regressive in practice, and Deputy Eamon Ryan's question on how we prevent it from being the only thing we do, I am much taken by Mr. Curtin's proposal that we ramp it up and use the income constructively but I am very aware of the risk Deputy Eamon Ryan alerted us to, namely, that it might be the only thing the Government does and that it will stand back after doing it. My experience is that while it is a useful signal, people actually respond to the subsidies and a congestion charge, for example, rather than a road tax or an increase in diesel charges. They responded to the plastic bag tax. They respond to initiatives that are smaller and more tangible.

I accept Mr. Curtin's analysis that every scheme gains more traction if there is a basic price of carbon underlying it than is higher than we have now. The debate on progressive and regressive measures is very important, however. It is worth remembering that when the carbon tax was introduced in budget 2010, VAT was reduced at the same time. The Government did not make much of that but it was a case of one regressive indirect tax being increased and one being reduced, roughly to the same annual level. There was not much communication or championing of that as a revenue-neutral way of avoiding socially regressive impacts. I agree that if we were to proceed in this regard now, we would have to be careful about the people in lower income tax brackets and, potentially, those outside the tax net altogether.

We should ring-fence some of the money and not just say we will do so. It was said in 2010 but, with the recession, it was not done. It has to be ring-fenced. The Department of Public Expenditure and Reform and the Department of Finance do not like hypothecation but we need to ring-fence the money for some sort of transition fund.

There is a radical proposal, floated in the United States, to give some of the money back as part of a tax and dividend system. If one takes all the tax in and gives it all back *per capita* as a direct dividend, in practice lower-income households do not use as much of the windfall because they have lower overall pollution even though they spend a higher proportion of their income on polluting activities. They would actually get a cash transfer from the state. It becomes more than equitable and has a progressive impact. It is certainly worth considering. Perhaps half could be done by dividend and half by putting money in a ring-fenced fund. I am not sure we should be reducing our taxes right now given where we are in the economic cycle.

On the issue of binding sectoral targets, I have never been of the opinion, throughout the eight years of the climate law campaign, that we needed to have such targets in law. I believe we would be okay with a system more like that in the United Kingdom, where what is legally binding is the overall envelope for a five-year period. We currently have no domestic legally binding target. Our political target, to reduce carbon dioxide emissions by 80% by 2050, is underwritten by the law but not actually in the law. In the United Kingdom, one has to come before the Parliament every five years with a carbon budget not just for the next five years but for the next 20 years. This results in a political, democratic negotiation on what departments and sectors are to receive in the budget. It might be difficult to put the sectoral number into law but if one puts the carbon budget number into law through a revised climate Bill, it is really powerful. It has worked in the United Kingdom to induce a debate not on whether we act but how we share the effort between the various sectors.

On the energy mix, I was asked about electric vehicles. I was searching for the numbers there, and I have found them. Based on figures from 2016, even with the current mix, an electric vehicle will average about 70 g of carbon dioxide per kilometre, whereas with a combustion engine the average output was 118 g per kilometre in 2016. Even now, it is much better to use an electric vehicle that is charged by plugging in. Obviously that will get better the more we decarbonise the grid, which of course we must do.

Absolutely, I think the Fossil Fuel Divestment Bill 2016 and the Petroleum and Other Minerals Development (Climate Emergency Measures) Bill 2017 are hugely significant, as much for their symbolic value and their message about where Ireland is going-----

**Deputy Brian Stanley:** I refer to the Microgeneration Support Scheme Bill 2017.

**Mr. Oisín Coghlan:** Yes, I will come on to that. I am answering Deputy Smith's question,

but absolutely-----

**Deputy Brian Stanley:** It is the Bill that I introduced. There is also the Waste Reduction Bill 2017.

**Mr. Oisín Coghlan:** I am very interested in the Waste Reduction Bill 2017 too-----

**Deputy Brian Stanley:** We welcome support for them.

**Mr. Oisín Coghlan:** I will finish with that in a second, because I want to combine that with something that Senator O'Reilly asked about. If I understood correctly, he was concerned about the issue of balancing job creation and job loss. All the evidence from all the economists that we hear from is that overall, the transition will create jobs. Second, it is worth noting that the International Trade Union Confederation now repeats all the time that there are no jobs on a dead planet. The choice is not between keeping the jobs we have now and the risk of losing some, it is about creating sustainable jobs for the future.

The sector that Senator O'Reilly did not mention but may be on his mind is the peat sector. There is no alternative other than some sort of just transition task force. Any time a US company announces it is closing down its factory in Ireland we have a task force overnight. The Industrial Development Authority, IDA, Enterprise Ireland, Solas and all the agencies knock their heads together to find a use for the factory and jobs for the workers. It will be ten years next month since the Government was first advised, not by us environmentalists but by its advisers, that it was time to close the peat stations and stop burning peat for electricity. If we had set up a just transition commission then, we would be fine. We now need to do it in a two-year timescale to close the peat stations in 2020. There needs to be community development support and just transition support, not just for training but for the development of those areas.

Briefly, Deputy Stanley raised the issue of micro-generation. To address the issue of societal buy-in, I think it is possible to engage people in dialogues and get them thinking, but it is much easier to get them engaged in something practical. I want every school in the country to have solar panels on its roof, so that schools can sell the electricity they do not use back to the grid, save money on their energy bills and invest that in educational activities. That is what would really get communities to buy into this and engage in this. This also applies to farm buildings, community halls and parish halls. We do not just need the grant system that the Minister is proposing to pilot from this summer, of which we have not yet seen evidence. We need a price, a payment for solar energy. It was not in the strategy for renewable energy. They say they are interested in it in the Department. It is overwhelmingly what experts advise and what the public wants. If we do that, then we have a real chance to actually practically engage people in something from which they can build their interest and their engagement in the transition we all want to see.

**Deputy Brian Stanley:** I ask the various organisations here to look at those two Bills. We would appreciate any support they can give to them. I introduced the Waste Reduction Bill 2017 last year. It is a very comprehensive Bill. I refer also to the Microgeneration Support Scheme Bill 2017. I would appreciate any support for it.

**Mr. Oisín Coghlan:** Friends of the Earth Ireland and Stop Climate Chaos have said that they absolutely support the Microgeneration Support Scheme Bill 2017. It is a useful contribution.

**Acting Chairman (Deputy Eamon Ryan):** On behalf of the committee I would like to



thank the witnesses for coming before us today and for their very worthwhile engagement. We will be closely engaged as we progress work on the climate issue, which we hope to do in response to the Citizens' Assembly report. The committee will publish the opening statements and submissions received to the committee web page. Is that agreed? Agreed.

*Sitting suspended at 5.54 p.m. and resumed at 5.58 p.m.*

### **Developments at Hinkley Point C Power Plant: Discussion**

**Acting Chairman (Deputy Eamon Ryan):** I welcome the officials to the discussion on the development at Hinkley Point C power plant.

I draw the attention of witnesses to the fact that by virtue of section 17(2)(l) of the Defamation Act 2009, witnesses are protected by absolute privilege in respect of their evidence to the committee. However, if they are directed by the committee to cease giving evidence on a particular matter and they continue to so do, they are entitled thereafter only to a qualified privilege in respect of their evidence. They are directed that only evidence connected with the subject matter of these proceedings is to be given and they are asked to respect the parliamentary practice to the effect that, where possible, they should not criticise or make charges against any person, persons or entity by name or in such a way as to make him, her or it identifiable.

Members are reminded of the long-standing parliamentary practice to the effect that they should not comment on, criticise or make charges against a person outside the House or an official either by name or in such a way as to make him or her identifiable.

I also wish to advise witnesses that any submissions or opening statements they have forwarded to the committee will be published on the committee website after this meeting.

I welcome the witnesses to the meeting today to engage with the joint committee on developments at Hinkley Point C. I propose that the main witnesses speak for no more than five minutes. If they wish to share speaking time, they may indicate this to me at the start. The presentations will be followed by a question and answer session during which each member may ask a question not exceeding three minutes. I ask committee members to wait until the presentation has concluded before putting their questions. I apologise for the long delay. Unfortunately, due to votes and the previous item running over, we are very late. I apologise for the inconvenience, and I look forward to hearing the witnesses' presentations.

**Mr. Paul McDonald:** I thank the joint committee for the opportunity to appear before it today to discuss issues pertaining to the development at the Hinkley Point C nuclear power plant and the UK new-build programme. I am joined by Mr. Paul Shortt from the Department and by Dr. Ciara McMahon and Dr. Micheál Lehané, from the Environmental Protection Agency, EPA.

The Irish Government has been aware since 2009 of the UK's plans to build nuclear power stations at sites judged as potentially suitable. The UK Government identified up to eight locations for the construction of new nuclear power plants by 2025, five of which are on the Irish Sea coast and the remaining three are on the east coast.

Ireland has been recognised for some time by the UK as a stakeholder in any nuclear development proposal. When the UK initially decided to embark on plans to build a new fleet of power stations, Ireland was one of the stakeholders consulted as part of that process. Following

strategic level environmental assessments, the UK concluded in 2009 that there would be no likely significant transboundary effects for Ireland arising from the new build programme. The assessments showed that while in the event of a significant unintended release of radioactive emissions, for example, as a result of a major accident, there would be a possibility of transboundary effects the probability of such an event was rated as extremely low due to the robustness of the regulatory regime.

This assessment was considered by the then Department of the Environment, under the technical advice of the Radiological Protection Institute of Ireland, RPII, prior to its merger with the EPA, and it was determined that there was no reason to contradict the conclusion that there were not likely to be significant transboundary effects. These matters were conveyed to the Government in a memo dated 17 January 2011 and the decision arising was that the existing bilateral engagement supported by ongoing contact at regulator level was the most effective mechanism through which to raise and seek to have Irish concerns addressed. This was conveyed to the UK Government in a letter from the then Minister for the Environment, Deputy Ó Cuív, to his counterpart on 24 January 2011. This letter further states that having regard to these considerations, the Government of Ireland is of the view that the appropriate and most productive way forward would be to avail of the aforementioned mechanisms of consultation rather than to seek a formal transboundary consultation. This proposed way forward was accepted by the UK and remains the adopted position. It should be noted that under the EURATOM treaty, the UK was required to satisfy the European Commission that the development at Hinkley would not result in the radioactive contamination of the water, soil or airspace of another member state. In this context a Commission opinion, issued in February 2012, considered that in normal operating conditions, discharges of liquid and gaseous radioactive effluents were not likely to result in exposure of the population of another member state.

The Government then asked the Radiological Protection Institute of Ireland, RPII, to prepare a report on the potential radiological implications for Ireland from the proposed suite of new plants. A principal finding of this report is that the routine operation of the proposed nuclear power plants will have no measurable impact on Ireland or the Irish marine environment. This report continues to inform Irish engagement on the UK new nuclear build programme. The Irish established position is that while we are not a nuclear energy producing country, we acknowledge the right of states to determine their own energy mix but we expect that where a state chooses to develop a nuclear power industry, this will be done in line with the highest international standards with respect to safety and environmental protection.

In terms of current engagement and recent development, there are now twice yearly meetings of the UK-Ireland contact group on radiological matters. This forum has been existence for a number of years. The meetings are attended by representatives from central Departments of both the UK and Irish Governments and their respective colleagues from the regulatory and environmental protection agencies. As part of the process of engagement between the two Governments, officials from Department of Communications, Climate Action and Environment and radiological experts from the EPA have visited numerous UK nuclear related sites in recent years, including Hinkley Point and Sellafield. What we gain through this process is access to the UK experts and an opportunity to visit the various sites. The issue of the UK new build programme is a standing agenda item at these meetings and arising from these discussions a letter was received from the UK Department for Business, Energy and Industrial Strategy in December 2016 concerning the UN Convention on Environmental Impact Assessment in a Transboundary Context - generally referred to as the Espoo Convention. In this letter, the UK reiterated its view that the development at Hinkley was not likely to cause a significant adverse

impact on the environment of another state and that, therefore, the UK was not required to undertake trans-boundary consultation. It further stated that following a recommendation from the Espoo committee, the UK was seeking our opinion as to whether notification would be useful at the current stage for the development at Hinkley Point C. The Department responded by letter dated 2 March that such notification would be useful and set out the basis for this view and adding that having the opportunity to formally comment on the UK new build programme is extremely valuable in allaying public concerns in relation to the programme.

The new build programme and specifically Espoo related matters were discussed at the meeting of the UK-Ireland group on 27 April, following which, on 28 July 2017, a further letter was received from the UK by the Department of Housing, Planning and Local Government - the lead department in relation to Espoo - in which the UK stated that while it maintained its position that it did not breach the Espoo Convention, it recognised the value of constructive engagement and in that spirit it was providing an opportunity to comment on the current environmental information in relation to potential transboundary impacts. The letter further stated that if likely significant adverse transboundary effects are identified on the basis of scientific evidence, it would then look at how the regulatory regime might address any identified effects. A consultation process was then initiated by the Department of Housing, Planning and Local Government through the local authority network and this process was recently completed.

On emergency preparedness, in the unlikely event that there is an accidental discharge from a nuclear power plant in the UK, the Irish regulatory authorities are well primed to deal with such an eventuality. The UK and Ireland have agreed and developed an early-warning notification system to alert Irish authorities of any problems in nuclear facilities in the UK. This system is regularly tested and discussed through the UK-Ireland contact group to ensure that it remains robust and fit for purpose. Ireland has also developed a detailed national emergency plan for nuclear and radiological accidents, NEPNA, to make provision for preparedness and response to nuclear and radiological emergencies taking place both inside and outside the State. Officials from Irish Departments and agencies who will have a role in the event of such an emergency take part in international exercises to evaluate and improve our response arrangements and capabilities with regard to nuclear and radiological emergencies.

In 2017, Ireland participated in a large-scale exercise held by the International Atomic Energy Agency to test our operational arrangements of the convention on early notification of a nuclear accident. The outcomes from this Convex exercise will inform an update to NEPNA which will then be established on a statutory basis to ensure that Ireland's preparedness and responses to nuclear and radiological emergencies remains first rate.

**Acting Chairman (Deputy Eamon Ryan):** I thank Mr. McDonald and I invite Dr. Lehane to make his opening statement.

**Dr. Micheál Lehane:** I thank the joint committee for the opportunity to attend this meeting to assist it with its deliberations. I am joined by Dr Ciara McMahon who was lead author of the 2013 report on the potential radiological implications for Ireland of the proposed nuclear power plants in the UK.

As the committee is aware, the Environmental Protection Agency, EPA, is an independent statutory body with a wide range of responsibilities. Since 2014, it also has responsibilities in regard to radiological protection, following its merger with the Radiological Protection Institute of Ireland. One of these roles is to monitor scientific and technical developments abroad in regard to nuclear installations and to provide advice to the Government on the implications

for Ireland. Some specific areas of work in the EPA over the past number of years include the review of the new nuclear build plans in the UK, the provision of technical support at meetings of the UK-Ireland contact group on radiological matters and the preparation of national reports and reviews to the convention of nuclear safety. The EPA also carries out an annual programme to monitor radioactivity in air, food and water. The EPA's monitoring of the environment confirms that while the levels of artificial radioactivity in the Irish environment are detectable, they are low and do not pose a risk to the human health of the Irish population.

The EPA has several key roles under the national emergency plan for nuclear accidents, including: maintaining arrangements for early warning and operation of an on-call duty officer system; maintaining the national radiation monitoring network; maintaining a national laboratory for the measurement of levels of radioactivity in the environment and food; and providing advice to the national emergency co-ordination group and Departments on possible protective actions to minimise radiation doses to the Irish population. Undertaking hazard assessments is a key element of emergency preparedness.

In 2010 the RPII was asked to carry out an assessment of the potential radiological impacts of the new nuclear power plants in the UK. That was published in 2013. One of its conclusions was that the routine discharges from the proposed nuclear power plant would be of no radiological significance for people living in Ireland. The assessment also considered the potential for severe nuclear accidents and five potential accident scenarios were assessed with probabilities ranging from 1:50,000 to 1:33 million chances per year. The impact of each scenario was modelled for a reference location on the east coast of Ireland over timescales ranging from 48 hours to one year after a release. Apart from the amount of radioactivity release weather was felt to be the most significant factor. Ninety per cent of the time, during the 48 hours after a potential accident scenario, radioactivity was not transported by wind over the reference location. On those occasions when the wind was blowing the radioactivity directly towards Ireland, the predicted levels of contamination and radiation doses varied significantly. Where the chance of an accident was estimated to be 1 in 50,000, the impact on Ireland was predicted to be relatively small. The radioactivity levels would not be high enough to warrant short-term measures but food controls and/or temporary agricultural protective actions would be required for a period of days to weeks following the accident.

On the other end of the scale, for the least probable but most severe accident studied, short-term measures, such as sheltering, may be warranted in the immediate aftermath of the accident to reduce exposure of the population. Food controls and protective actions would be required for many and protective actions would be required for many years to reduce radiation doses from consumption of contaminated food. While these controls have been shown to be very effective in controlling radioactivity levels in foods for sale, they do have significant socio-economic implications and costs. This was also subject to an assessment by the Economic and Social Research Institute, ESRI, in a subsequent study.

Dr. McMahon is the lead author and I can provide additional information and answer any questions on these matters, if the committee wants.

**Deputy Brian Stanley:** What specifically resulted from the EPA's reports on radioactivity in those parts of the Irish Sea close to Sellafield? Dr. Lehane referred to the commission and said the results showed that the population of another state was not likely to be harmed by exposure. What is the effect under normal operating conditions? An accident may not happen under normal operating conditions but under abnormal ones.

I am not a scientist but I have been to a nuclear plant and am aware of some of the issues surrounding storage of nuclear waste. There are major concerns because nuclear waste cannot be wished away and we cannot hope it will go away. It will be with us for thousands of years. With the construction of eight new plants, in addition to the ones already there, in the three foreign countries, England, Scotland and Wales, which are on an island with a fairly small land mass, there will be a huge volume of nuclear waste in Britain. Some of the plants are getting old, for example, Torness will probably be decommissioned within the next five or ten years. Perhaps the Department and the EPA could give a concise answer to each of those three questions.

**Dr. Ciara McMahon:** Since the early 1980s the EPA, and previously the RPII, have monitored sea water sediment, shellfish and fish, looking for artificial radioactivity mainly as a result of discharges from Sellafield. It is not a nuclear power plant. It is a nuclear fuel reprocessing plant and because of the difference in those operations its discharges of radioactivity into the environment are much larger. That is partly why people have difficulty understanding that new nuclear power plants may not lead to large increases in radioactivity going into the environment. It all comes down to whether fuel is reprocessed or not. Reprocessing leads to larger discharges to the environment.

We can measure the radioactivity in the environment as a result of the Sellafield discharges. What we are measuring comes mainly from discharges in the 1970s and 1980s when they were much higher. Much of what was discharged ended up in the seabed sediments just off the coast of Sellafield and there were muddy sediments just off the coast of Louth too. It got trapped in the sediment there but now because the discharges are lower at Sellafield it is starting to come back up into the water.

We measure radioactivity that has been there since the 1970s and 1980s. Even if discharges stopped completely tomorrow we would probably continue to measure around the same levels of radioactive caesium and plutonium in the sea water, sediments and shellfish and so on. The levels are extremely low. If we add what we are exposed to from all sources of radiation in the environment, including radon, medical exposures and so on, what we are actually exposed to from Sellafield, Chernobyl, Fukushima plus nuclear weapons testing, represents less than 1% of our overall radiation dose. That is for an average member of the public. For somebody who has high levels of radon in his or her home or workplace the percentage coming from Sellafield and Chernobyl, etc., will be even smaller.

In response to the question about what normal operations means, when a nuclear power plant is operating there are discharges to the environment. They are much lower than those from a reprocessing plant but there are ongoing discharges to air and water. As five of the plants will possibly be on the Irish Sea coast we assessed the discharges and what the radiation doses would be. These are routine releases from the 60 to 70 year plant life. We worked with Met Éireann to get data on the weather patterns for the past 21 years and used that to model what would happen over the next 60 years of operation of the plants for discharges to air. We also studied average sea currents and worked with the National University of Ireland, Galway, NUIG, which has experts in sea modelling to assess the maximum discharges that could occur at nuclear power plants.

We had to make assumptions because these plants have not been built yet but we had information on what the UK regulators were considering as the maximum amount that could be discharged to air and water. We also had information on what similar, older plants would currently release into the environment in Europe and the world. We used all that data to examine



the radiation doses that would occur over 60 to 70 years. The radiation dose we get currently is approximately 4,000 microsieverts per year, this would increase by less than one additional microsievert. We would not be able to measure that above what we get at the moment. That led to the conclusion that for the routine releases, excluding any emergency occurring, the radiological impact would be insignificant.

**Mr. Paul McDonald:** In response to the question of storage, there has been some discussion about geological disposal facilities, GDFs, and how the UK would manage the waste coming from the nuclear industry. Consultations have commenced within the UK to enable stakeholders and members of the public to submit comments on the GDF programme. At this stage they are of a very general nature, and are appropriate to an internal UK audience. At present there are no proposals to site one of these geological disposal facilities on the island of Ireland. Following a number of unsuccessful attempts to identify a long-term facility, the UK Department for Business, Innovation and Skills launched a consultation paper on how better to engage and represent communities across England and Northern Ireland in any future process to consider siting a geological disposal facility. The consultation paper notes that the process to identify and select a site for one of these facilities requires detailed technical work that would be estimated to take somewhere between 15 years to 20 years. That is the sort of timescale we are looking at.

Even if a community proposal won public support in Northern Ireland, we are talking about a long-term game here. The final decision on whether there would be a geological disposal facility for radioactive waste would be a decision for the Northern Ireland Executive as a whole, taking into account the various planning and environmental considerations. I assure the committee that the question of the management of waste, particularly the GDF programme, is a standing agenda item at the UK-Ireland contact group I mentioned previously, which comprises officials from the various Departments and the regulators and which meets twice-yearly. This is something we keep our eye on and we get regular updates from central government. I emphasise that we are at the very early stages of the process, which could take somewhere between 15 years and 20 years.

**Deputy Brian Stanley:** Which central government?

**Mr. Paul McDonald:** The UK Government and ourselves.

**Acting Chairman (Deputy Eamon Ryan):** Thank you, Mr. McDonald. Unfortunately, a vote has been called in the Dáil, so I am going to have to suspend the meeting. If it is not too inconvenient, I hope you will be able to come back straight after the vote. I have some quick questions I want to ask. I am sorry for the inconvenience and the long delay. We will suspend briefly for the Dáil vote.

*Sitting suspended at 6.22 p.m. and resumed at 6.34 p.m.*

**Acting Chairman (Deputy Eamon Ryan):** We are back in public session. I apologise to the officials, we have had a difficult day with votes in the Dáil and an overrun on an earlier session.

I want to ask short, concise questions one at a time. In Mr. McDonald's presentation, on the second page he said that back in 2009 the UK's assessment considered that there was no significant transboundary effects for Ireland on their new nuclear programme. This assessment was considered by the Department of the Environment, Community and Local Government at

the time and under the technical advice of the Radiological Protection Institute of Ireland, RPII, it was determined that there was no reason to contradict the conclusion that there would likely not be significant transboundary effects. Can you forward that written assessment to the committee?

**Mr. Paul McDonald:** I can look at the documentation. I know there was a memo for Government which would have had a lot of the background to that so I can forward that to the committee in the coming days.

**Acting Chairman (Deputy Eamon Ryan):** Could he also send us that? That memo to Government was on 17 January 2011.

**Mr. Paul McDonald:** Yes.

**Acting Chairman (Deputy Eamon Ryan):** However, there would have been an assessment carried out in 2009 or 2010.

**Mr. Paul McDonald:** It was over that period. I do not have the precise date but I can find the supporting documentation and get it to the committee.

**Acting Chairman (Deputy Eamon Ryan):** Perhaps Mr. McDonald could send it all, including the memo. I was a member of that Cabinet and I cannot say that I remember much from 17 January 2011 other than that we were in something of a crisis at the time.

**Mr. Paul McDonald:** The Acting Chairman had other things on his mind.

**Acting Chairman (Deputy Eamon Ryan):** I would appreciate it if Mr. McDonald could send all the background documentation to the committee.

**Mr. Paul McDonald:** Certainly.

**Acting Chairman (Deputy Eamon Ryan):** Subsequent to that meeting on 17 January 2011, a letter went from the then Minister, Deputy Ó Cuív, to his counterpart on 24 January. Deputy Ó Cuív had only been in office a day. He was holding down three portfolios at the time, which was quite a feat. The letter stated that, having regard to the relevant considerations, the Government was of the view that the appropriate and most productive way forward would have been to avail of the mechanisms of consulting mentioned rather than a formal transboundary consultation. Was it not the case that that letter went on to say that in cases that we did expect formal transboundary consultations on the environmental assessments relating to each proposed power plant?

**Mr. Paul McDonald:** Yes. I was trying to give an indication of the policy that we currently operate of dealing with these issues through the engagement with the UK-Ireland contact group and that was the background to it. Moving on through the various stages that we have had and the more recent engagement around Espoo and so on, the UK has agreed that there would be full consultation in respect of future nuclear power plants or any change to the current planning permission around Hinkley.

**Acting Chairman (Deputy Eamon Ryan):** The impression that was created in Mr. McDonald's presentation was that we would not be seeking a formal transboundary consultation. However, the letter to which I refer said that we would be doing so in respect of specific projects.

**Mr. Paul McDonald:** We were trying to talk specifically about the Hinkley project so that is why I was extracting that statement from the letter. At that stage, we were talking about the Hinkley project. The idea would be to deal with it through consultation rather than the trans-boundary consultation.

**Acting Chairman (Deputy Eamon Ryan):** On page 3 of his presentation, Mr. McDonald cites the fact that the UK Government again wrote a letter in December 2016. The Department of Business, Energy and Industrial Strategy reiterated its view that Hinkley was not likely to cause a significantly adverse impact and that it was not required to undertake transboundary consultation under the Espoo Convention. Mr. McDonald also says that the Department of Communications, Climate Action and Environment responded by letter on 2 March. Was that 2 March 2017?

**Mr. Paul McDonald:** Yes.

**Acting Chairman (Deputy Eamon Ryan):** I refer to the Espoo Convention. There was a complaint by an Irish non-governmental organisation, NGO, to the convention implementation committee about the lack of consultation with the Irish public on Hinkley. Ireland received a letter from the committee on 14 October 2013 asking if we thought the proposed nuclear plant was likely to cause significant transboundary effect. The UN committee asked specifically whether the Government considered “that the proposed development at Hinkley Point C is likely to cause significant adverse transboundary impact on the territory of Ireland”. The response we provided on 22 November 2013 did not answer that question. When the Norwegian Government received a similar letter a year later, it responded by saying that it could not confirm that it was not likely that the proposed NPP at Hinkley Point C, in the case of a major accident or incident, could cause significant adverse transboundary environmental impact on the territory of Norway. Why did we not answer the question that was asked by the UN committee?

**Mr. Paul McDonald:** I would surmise that, at the time, we were still relying on the report from the RP11, which stated that until the normal operation of these power plants commenced, there was no significant threat to the Irish environment. There was no change in the position. The scientific evidence had not changed. There would not have been any change in the policy positions. The position was maintained.

**Acting Chairman (Deputy Eamon Ryan):** There may be confusion about the various letters to which I am referring. Surely the letter concerning the Espoo Convention that was sent by the UK Department for Business, Energy and Industrial Strategy in December 2016 resulted from the Espoo Convention implementation committee’s finding that the UK was in breach of the convention. Was that not what gave rise to the letter being issued?

**Mr. Paul McDonald:** The UK determined early in the process that the development at Hinkley Point was not going to lead to a significant transboundary impact. The UK is maintaining that position to this day. The letter referred to by the Acting Chairman and subsequent letters sent by the UK refer to the “spirit” of what had transpired. One of the later letters, which was sent on 28 July 2017, stated:

As you are aware, the United Kingdom maintains that it did not breach the Espoo Convention in respect of the initial planning process for Hinkley Point C, but recognise the value of constructive engagement and it is in this spirit we are sending this letter.

In the July letter and in a letter sent the previous December, the UK was maintaining its posi-

tion that it did not consider that it was in breach of the Espoo Convention.

**Acting Chairman (Deputy Eamon Ryan):** The Espoo Convention implementation committee has found that the risk of an accidental or unplanned release of radioactive material from Hinkley Point is covered by the convention, regardless of however small the UK assesses that risk to be. Does the Department agree with that finding?

**Mr. Paul McDonald:** The Department's unchanged position is that these matters are to be dealt with through the mechanism of the UK-Ireland contact group. As the subject of this new-build plant is a standing agenda item, we are updated on it every six months. There has been no scientific evidence since the RPII report to alter that thinking or that position.

**Acting Chairman (Deputy Eamon Ryan):** Therefore, the Government formally disagrees with the Espoo Convention implementation committee's assessment that the risk, as small as it may be, of leakage or release of radioactive material from Hinkley Point is covered under the Espoo Convention.

**Mr. Paul Shortt:** That is a draft finding and is still under discussion. It is not the final position of the committee.

**Acting Chairman (Deputy Eamon Ryan):** What would be the position of the Government in any submission with regard to the draft finding? Would we agree or disagree with it?

**Mr. Paul McDonald:** I reiterate the point that no scientific evidence has been produced that would require us to alter our position that nothing in the normal routine operation of these plants would be a significant threat to the Irish environment.

**Acting Chairman (Deputy Eamon Ryan):** The report of the Espoo Convention implementation committee was considered at the triennial meeting of the parties to the convention last June. The Minister was not present. No Irish delegation or official was present. Why was that?

**Mr. Paul McDonald:** I would have to refer the Acting Chairman to the Department of Housing, Planning and Local Government. That Department, not the Department of Communications, Climate Action and Environment, has responsibility for matters relating to the Espoo Convention.

**Acting Chairman (Deputy Eamon Ryan):** This is not an inconsequential bilateral issue between the two nations involved. Indeed, a number of other countries, including Austria, Germany and Norway, are involved. This is not a small issue on a European political or diplomatic basis. Given that this draft report seems to be contested from the point of view of the Department or the Government, why did we not attend the meeting at which it was discussed?

**Mr. Paul McDonald:** I repeat that the Espoo Convention focal point is within the Department of Housing, Planning and Local Government. I am virtually certain that the Department of Communications, Climate Action and Environment did not receive an invitation. We would not have had the *vires* to attend that meeting.

**Acting Chairman (Deputy Eamon Ryan):** I take the point. I will avail of the opportunity to put this question directly to the Department of Housing, Planning and Local Government. A complaint made by the Friends of the Irish Environment, an NGO that has consistently been raising this issue, was accepted by the international organisation that is in place to oversee matters relating to the Espoo Convention. Why has that organisation not received a response to the

letters it sent to the Minister in this regard? They have gone unanswered.

**Mr. Paul McDonald:** Did those letters relate to the Espoo Convention?

**Acting Chairman (Deputy Eamon Ryan):** Yes.

**Mr. Paul McDonald:** I am not sure what letters have come to the Minister for Communications, Climate Action and Environment. We have engaged with some of the NGOs on this matter. I have met representatives of the organisations to explain our position with regard to the Espoo Convention and the whole issue of the new plant and the UK's new programme. There has been engagement. I cannot provide a definitive answer on letters that have arrived and not been answered. We have certainly engaged with the NGOs.

**Acting Chairman (Deputy Eamon Ryan):** I would like to put a final question to Mr. McDonald before I put one or two questions to the officials from the EPA. As I understand it, the ESRI study he mentioned estimates that costs of €4 billion, or indeed more, could arise as a consequence of an accident - please God it will not ever happen - at Hinkley Point. Does the Department agree with the assessment in the ESRI study?

**Mr. Paul McDonald:** The Department commissioned the assessment. The probabilistic risk assessment that was referred to earlier, which looked at the issue from the point of view of what the damage to the environment might be, recommended that we look at the socioeconomic cost of such an accident. We drew up the terms of reference and we engaged with the ESRI. That was done for a number of reasons. The information we were looking to get would inform decisions on whether it would be in Ireland's interests to be a signatory to certain international treaties and conventions concerning nuclear emergencies. The analysis would help to inform our position on policy and legislative developments in Europe and internationally. An assessment of the vulnerabilities would help to inform emergency management. The Department engaged with this process and of course accepts the findings of the ESRI report.

**Acting Chairman (Deputy Eamon Ryan):** However, not to the extent where we want to have the right to engage in transboundary assessment of projects.

**Mr. Paul McDonald:** We are satisfied with the level of engagement we are getting, the interaction we have with the UK on these issues and the openness of our ability to visit these sites and monitor the developments at them. We do not see any reason to divert from that strategy, which we have had for a number of years.

**Acting Chairman (Deputy Eamon Ryan):** I am conscious of time so I will finish up after I have put a final question to Dr. Lehané and Dr. McMahon. It is unfortunate that we are so limited. It is probably unlikely that Hinkley Point will ever get built because it is so uneconomic. If it is built and there is an accident, what sorts of timelines will apply? How much notice would we have to react to an unplanned release from Hinkley Point? As I understand it, the main recommendation is to shelter behind closed doors from immediate weather or atmospheric conditions such as rain or wind. What are the timelines that are likely to apply in these circumstances? Even though we had a week's notice of recent weather events such as Hurricane Ophelia and Storm Emma, we saw how significantly difficult it was to organise ourselves. We would not have any notice of this. What are the timelines for getting shelter?

**Dr. Ciara McMahon:** I will take that question. We have looked at a range of accidents. Sheltering was not required in the case of most of the accidents we have looked at, including some very severe accidents. The important things would be food controls and agriculture



protection actions in order to prevent long-term health risks like cancers. We wanted to look at cases such as Fukushima, where there was a release to the environment combined with unfavourable weather, with winds coming quickly from the east with a lot of rain as the plume arrived. It is best practice to measure the maximal impact when developing nuclear plans. We worked with Met Éireann to identify weather patterns over a 21-year period and we found about six days in that 21-year period when such unfavourable weather conditions existed. At those times, it might be appropriate to advise people to stay indoors. Even if they did not stay indoors, however, they would not get a radiation dose that would be of immediate concern. It would be above safe levels during the passage of the plume and we would advise people to stay indoors for maybe 24 or 48 hours. Even if people were camping outdoors, however, the predicted radiation dose would be roughly 14 mSv, which is higher than the annual recommended dose but, as a once-off, is not an immediate health concern. Radiation workers can receive up to 20 mSv per year for every year of their working lives so we are not talking about a dangerous level of radiation.

The timelines all depend on what is initiated but with Fukushima there was a tsunami and power was very quickly lost. For 48 hours there were significant releases to the environment. The journey of any radioactivity across the Irish Sea would take a few days. Once the release started, it would be a number of hours before any action would be expected in respect of the public. The action would be to recommend people who wanted to minimise the radiation dose to stay indoors. If nothing was done and we continued with our lives completely as normal, 90% of the effects would be on food from people's gardens or food which was 100% locally produced. That does not have to happen. We have worked with the Department of Agriculture, Food and the Marine and the Food Safety Authority to make sure that there are plans in place to ensure all food on sale after a nuclear accident would be safe to eat. That would reduce the radiation people get to much lower levels and we would not expect an increase in cancers provided the necessary actions were taken. We have worked with stakeholder groups, including representatives from the Irish Farmers Association, with retailer groups and with food and feed bodies to make them aware of what we are doing and they have given us feedback. We know what is technically feasible but they want to know what would work in the Irish situation.

The Irish national emergency plan for nuclear accidents was subject to an international peer review at the end of 2015. It was found to be a good plan and well integrated into overall planning in the State. We learned from events such as Storm Emma, Storm Ophelia and the dioxins crisis. Thankfully, nuclear accidents are rare but we have a feedback mechanism so that we learn from such events and our practice was identified as something other countries should emulate.

**Acting Chairman (Deputy Eamon Ryan):** The hit could be taken by the food industry.

**Dr. Ciara McMahon:** That is where the costs come in. Ireland is an exporter of food and we have a lot of tourism so reputational damage could be significant. The Department commissioned the ESRI report to look at these types of impacts.

**Acting Chairman (Deputy Eamon Ryan):** There were consequences for some farmers as a result of Chernobyl and that was for an extended period.

**Dr. Ciara McMahon:** Yes.

**Acting Chairman (Deputy Eamon Ryan):** Senator Grace O'Sullivan asked the head of Irish Water, Mr. Jerry Grant, about the risk of radioactive contamination to our water supply.

He said that if a nuclear accident happened outside Ireland, we might get some warning but that there would be no way to stop systems from being contaminated. Is there an issue in that regard?

**Dr. Ciara McMahon:** The closest nuclear facility is over 100 km away from our coast so drinking water is not as big an issue as it would otherwise be. Radioactive particles are suspended in the air. Some would fall in the form of dust and settle on open reservoirs. If there was rainfall, it would wash more of it into the reservoirs but it would be diluted in a large volume of water. Water treatment also removes a certain percentage of radioactivity and there have been European studies on this. Drinking water would not be an issue but food would. If the worst accident happened and was accompanied by the worst weather and no action was taken, there would be an increase in cancers. Those concerns do not exist for drinking water but we test our plans so that we can confirm what our models show us is happening on the ground. In our laboratory, we test water samples for radioactivity all the time. All drinking water has radioactivity in it naturally and this would increase in the event of an accident but it would not be high enough to be a health concern.

**Acting Chairman (Deputy Eamon Ryan):** In light of the ESRI report on the potential risks relating to food and in the context of the small possibility of an accident happening, the question as to whether the Government should consider that the proposed plant would be likely to cause significant adverse transboundary impacts on the territory of Ireland should be answered in the affirmative rather than the negative.

**Dr. Ciara McMahon:** If an accident were to occur and the wind was coming towards us, then, yes, there would certainly be transboundary effects.

**Mr. Paul McDonald:** There is a high risk but a low probability. These plants are well run and we try to take all these factors into account.

**Acting Chairman (Deputy Eamon Ryan):** I hope I have not abused my position as Acting Chairman. It is my first time as Acting Chairman and it will probably be my last. I ask Mr. McDonald to forward the correspondence to which we referred to the committee.

**Mr. Paul McDonald:** I will do that by the end of the week.

**Acting Chairman (Deputy Eamon Ryan):** I thank the witnesses for attending in order to take part in this worthwhile engagement. I propose that the committee publish the opening statements and submissions on its website. Is that agreed? Agreed.

The joint committee adjourned at 7 p.m. until 3 p.m. on Tuesday, 12 June 2018.