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TRANSCRIPT OF SESSION TWO

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GWEN MALONE STENOGRAPHY SERVICES

SESSION 7 Roundtable Discussions

MS. BURKE: Thank you and good morning, Madam Chair, Ladies and Gentlemen. I really would like to thank you for the opportunity to address you here today and I look forward to assisting you with your deliberations. 12:39

This morning what I would like to do is discuss national greenhouse gas emissions from the different sectors as accounted for and reported to the EU and the UN by the EPA. 12:39

I am then going to cover the interrelationship between climate change and all other dimensions of our environment and our health and wellbeing and then just to finish with some observations on the challenges of 12:39 reducing greenhouse gas emissions, that is mitigation and adaptation to climate change challenges that lie ahead.

Firstly, just very quickly, the EPA, who we are, the 12:40 Environmental Protection Agency was established back in 1993. Our sponsor in Government is the Department of Communications, Climate Action and Environment. We are an independent public body and we guard our independence, we are very proud of that independence in 12:41 all of our scientific decision-making and our pronouncements and our responsibilities and powers are set down in national legislation.

First of all we do a wide range of activities in the areas of climate science, everything from industrial regulation, which we look at things like clean technology, best available technology, then chemical regulations. We also provide the secretariat to the 12:41
climate change advisory counsel that was referred to earlier and Chaired by John Fitzgerald and we have other processes, for example strategic environmental assessment, for example, on mitigation plans, adaptation plans and other plans by Government. 12:42
We also have a role in communicating climate science and in fact on 26th October we have an open public lecture by Chris Rapley, that will be held in the Mansion House and anybody is free to attend and the topic is Communicating Climate Science, because it is 12:42
an area that can be very difficult to communicate. Lastly, we will have potentially a new role in the climate dialogue.

Moving directly on to reporting of greenhouse gases. 12:43
When I was looking at what would be appropriate, I suppose, to talk about in this section I decided that the national policy position is particularly relevant to this Citizens' Assembly deliberations because your deliberations are around how the State can make Ireland 12:43
a leader in tackling climate change. It clearly articulates the State's ambitions rather than obligations or targets that could be perceived as being imposed upon us. In the context of my discussion I am

going to be talking really about where we are at with regard to our national policy position. That policy position looks at a long-term vision with an 80% reduction in greenhouse gas or carbon dioxide emissions across the electricity generation, built environment and transport sectors and then an approach to carbon neutrality in the agriculture sector.

Where do greenhouse gases come from? A wide range of sources, everything from energy industry, residential, transport, agriculture waste, all of these activities generate greenhouse gas emissions and on an annual basis the EPA produces what is called a national inventory report identifying the sources of all of the emissions and what they sum up to in the country. 12:46

I suppose we look at inventories which are effectively looking behind you saying what were the emissions previously in the country, and the most recent ones we have are for 2015. Then we also look out into the future. A bit like Conor was saying, you try to predict into the future emissions are likely to be, and that is done within a particular framework that is set out by the EU and the UN so that every country's projections are based on similar criteria. 12:47

There are additional complications with regard to emissions trading sector activities and non-emissions trading sector activities. I am not going to go into

them today, I think again just let us focus on overall Irish emissions.

So what do they look like? We tend to use 1990 as a baseline year for emissions across the world in fact. 12:47
What you are seeing is in 1990 emissions in Ireland were around 56 million tons and in 2015 they were 59.9 million tons, so an increase of around 6.7%. There were a number of phases to those changes, and you will see just in the various arrows on the graph here: Stage 12:48
one was 1990 to 2001 and emissions really increased as a consequence of economic and population growth.

Moving to stage two, which was 2001 to 2008, we saw a slight decline, and this is highlighted in the green 12:48
arrows, a slight decline due to some successful decoupling, particularly in the energy sector, and a slight decline in the agriculture sector.

Stage three, 2008 to 2014, a very big decline, then 12:49
followed by flat lining. That absolutely mirrors the economic recession. So where you had a big decline what you are seeing is that was the impact of the recession primarily.
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Then what we are starting to see in 2015 is increasing again the emissions, so what we are seeing is little evidence of decoupling between the economy emissions in the highest sectors. Really what you are seeing is if

the economy is going well, emissions are going up as well.

Then just to look at the various sectors, and I will just pull them up here. There you go. Again looking at the share between 1990 and 2015 what you are seeing is agriculture in the green here, a very, very big contributor to Irish greenhouse gas emissions, it was around 37% of emissions in 1990, it is around 33% now, but around one third of the emissions. 12:50

You are also seeing then if you look at the energy sector, around 20% in 1990, a similar percentage in 2015, so around 20% of emissions.

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Transport, though, has grown dramatically as a percentage share, so from around 9% back in 1990 up to just under 20% in 2015. You are seeing a rapid growth in the percentage of emissions coming from that transport sector. 12:51

What I thought, just very briefly, was to look at the trends in each of the key sectors, transport, agriculture and energy. I don't want to go into too much detail on those, it is really just to show the 12:51 transport emissions are 130% higher in 2015 than they were in 1990. You see a rapid growth, a peak year of 2007, the heart of the Celtic Tiger, at 14.4 million tons, then a decrease with the recession and rising

again.

Important here just to see the red bar, which is road transport, and that accounts for over 95% of emissions. The vast majority of transport emissions in Ireland are coming from the road 12:52

Moving on to agriculture, in 1990 there was around 20 million tons, just under 21 million tons, 1998 was the peak, it went up to 22 million tons, and now we are down at round 19.8 tons. Overall emissions are down 12:53 around 5 per cent on 1990, however I would say it is expected that food wise 2025, which is the Agricultural Development Programme will reverse this trend so. We are already seeing a 1.6% increase in 2015 mainly due to a rise in dairy cattle numbers. What you are seeing 12:53 on the very last bar here is emissions rising again in the agriculture sector.

Then, lastly, from the sectoral perspective just to look at energy, and what you are seeing is a rapid 12:54 growth between 1990 and 2001 followed by significant decreases. Those decreases mainly around closing older peat plants around the country and also to new gas fired plants and newer, more efficient peat plants coming on stream. 12:54

However, and again in 2015, because I suppose that is the focus as we come out of the recession that I think is particularly of interest, what you are seeing is an

increase in emissions from the electricity sector. There was an almost 20% increase in coal used for electricity generation and that led to an emissions intensity increase in the power generation, so a move to coal in 2015 actually had a significant impact on emissions. Overall emissions slightly up on 1990. 12:55

Now kind of trying to look out into the future and see where we are going to be, and this is the EPA projections, as I said we do them under set criteria, what we are seeing is by 2035 emissions will be almost 7% higher than 2016, so they are not going down, they are going in the wrong direction. I would also say that this is the best case scenario. We do different scenarios, this is the best case scenario with all policy measures, et cetera, delivering as anticipated. All existing policies we are still going in the wrong direction. 12:55

Again to look at those three sectors, the three key sectors, and what you will see here is the solid lines are the historic emissions and the dotted lines is predicting into the future. What the projections imply is that the decoupling of emissions from the economy is likely to tail off in the electricity generation sector post 2020, so you start seeing the blue line going up again, and it was never particularly evident in the transport and agriculture. Basically in particular what we see with transport it mirrors the economy, more 12:56 12:56

employment, more trucks on the road, more cars on the road, more emissions.

I was also asked just to say: Where is Ireland at compared to other countries? What you see here is the red line, which is the tons of greenhouse gas emissions per person in Ireland, the blue line is the population increase. So what you could be saying is, well, actually it is great, Ireland have gone from 16 tons per person in 1990 down to 12.9 tons per person in 2015, however the population increased by one million people and also emissions went up, so you are dividing by a bigger numbers so ultimately, of course, the emissions will look lower then. 12:56 12:57

Yes the per capita emissions have gone down but actually overall emissions went up in that time period. Therefore I also think it is useful to look and see where we are at with regard to different European countries. You will see Ireland is the fourth highest with regard to emissions after Luxembourg, Iceland and Estonia. We are well above the average. One thing I suppose to highlight here is if you excluded methane, which is kind of primarily the agricultural emissions we would be closer to the average. Agricultural emissions are having an impact on the per capita emissions. 12:58 12:59

This looks a very complex slide and it is just really

to give a sense of the scale of the challenge, so the blue is all of the actual emissions, the green are projected emissions and at the very end in 2015, this minus 80%, is the national aspiration. This is what the national policy position says, we are going to be 80% reduced in electricity generation built environment and transport. What you see in the green lines is actually the projections are showing we are going in the other way and the scale of the challenge the longer we leave it the more significant reductions we will need on an annual basis. 13:02 13:03

If we start reducing our emissions now we will need a reduction of around 0.75 million tons per year. If you leave that to 2035 you are talking about dramatic emission reductions of around two million tons a year in order to achieve our national ambition of reduction. So this is not anything imposed upon us by the EU, the UN, or anybody else, this is our own national policy position of an 80% reduction. 13:04 13:04

I was also asked to talk about the interaction of climate change with other environmental challenges because nothing exists in isolation. 13:05

The EPA publish every four years a state of the environment report. The most recent report we published was at the end of 2016, so it is very recent, and it presents a detailed analysis of the condition of

our environment and the influencing factors. That report identified seven key environmental challenges for Ireland, three of them are systemic, which is around environment, health and wellbeing and the interactions. Then there is climate change, 13:06
implementation of legislation and then topical messages around water quality, nature, sustainable economic activities and community engagement.

Ultimately the report concluded that climate change is 13:06
the defining environmental issue of our times, that Ireland's environment is generally good but there are serious underlying areas of concern and signals of concern. It also identified that while the worst of the worst of our rivers have improved we have lost the best 13:07
of the best with regard to water quality. Localised problems such as air quality and water pollution are masked by national figures, and I will come back to this later. Species such as the Corncrake and the Curlew are almost extinct in Ireland and, ultimately of 13:48
course, environmental legislation keeps us safer and healthier and needs to be implemented.

Specifically around climate change what the report identified is that climate change is now with us, and 13:48
Conor has talked about this already. The sooner we act the less damage will be done to our society, our economy and our environment. To protect our environment, safeguard our wellbeing and secure our

economy, as well as achieving our international commitments we need to adopt a much greater sense of urgency about reducing our dependence on fossil fuels for energy, heating and transport, radically improving energy efficiency and preparing, of course, for the 13:49
inevitable consequences of climate change, and that includes, for example, flooding.

Ireland's energy system needs to undergo a major transformation in the coming decades as part of actions 13:49
to address climate change. In relation to transport the there needs to be support for a shift from the private car to an efficient, sustainable transport system and a more proactive and systematic approach to land use and transport planning, so where we build our houses, our 13:50
towns and villages because ultimately that has an impact on the transport that we use and the emissions from those sectors.

In conclusion then just some remarks that links, I 13:50
suppose, climate change with other environmental issues. I look back not to the science adviser, to the current president of America but the previous president, President Obama and there is a guy called John Holdren, and he identified we need a lot of 13:51
mitigation, that means we need to reduce our emissions, and we will also need adaptation, so adapt to a changing climate. We need a lot of mitigation in order to hold the changes in climate to the level that

adaptation will be able to cope reasonably effectively with, as in the less changes to the climate the easier it will be to adapt to those changes. Also that adaptation gets more difficult, more costly and less effective the larger the changes in climate you are trying to adapt to, which I think is common sense. It is complex and it is not easy because there are a lot of interactions with different sectors of the environment. 13:52

We also need to be really careful of unintended consequences, for example a couple of years ago there was promotions through Vehicle Registration Tax of low carbon dioxide cars, so diesel cars. Diesel car numbers have gone up but diesel cars have a higher impact because of things like air pollutants, of NOx and particulates. 13:52

On one hand we were promoting different types of cars saying this is good for the climate but actually they had a negative impact on air quality. So you need to make sure that when you are looking at policy measures there is not unintended consequences. 13:53

Another area would be in the likes of forestry, where we want to encourage forestry because it is good for climate but if you do forestry in the wrong places or in upland areas this can possibly have a damaging affect on water quality and streams. 13:53

Nothing is simple and we just need to be careful of all of those complex interactions. I suppose ultimately to say that everything is connected with each other, you cannot do something in one area without having an impact somewhere else. 13:54

National infrastructure, of course that is there already, is vulnerable to climate change. Water quality and supply are connected to our climate. 13:54 Ecosystems and biodiversity are dependent on our climate and are very vulnerable to climate change. Air quality and climate are connected, our economy as well of course being an agricultural nation, marine and terrestrial farming are vulnerable to climate change. 13:54

Two examples that I thought might be relevant to your discussions today, the first is around peat, in particular for forestry and power gen, or putting into power plants around the country. Peat is our largest 13:55 store of carbon in Ireland. Harvesting it for power generation is a triple negative hit, you are draining the bogs, which releases carbon dioxide, cutting the bogs removes carbon storage within the bogs themselves and burning the peat releases carbon dioxide. It is 13:55 also a very poor fuel. So not only are you releasing carbon dioxide and you are damaging the environment it is also a poor fuel that you are actually burning. There is over one million hectares of bog in Ireland

but at this stage most of that is in a degraded state. There is also a public service obligations levy of €118 million for peat-fired power, and that is the levy that each of us pay in our electricity bill, so we pay a PSO to support the burning of peat, this is equivalent to €470,000 per megawatt capacity and the subsidy for wind power is €110,000 per megawatt capacity. So we are subsidising at a very high level a very damaging emitter of carbon into the environment. 13:56

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With regard to co-benefits then, air pollution is both an environmental and social problem, it leads to a multitude of adverse affects on health, ecosystems, the built environment and climate and the European Environment Agency estimates that poor air quality contributes to over 400,000 premature deaths across Europe and around 1,200 of those premature deaths are linked in Ireland. The most significant air pollutants in Ireland arise from traffic emissions, so we are coming back to traffic and the burning of smokey fuels in people's homes. So very simply the move away from fossil fuels would have a benefit from both the climate and an air quality perspective, it is a win/win if you move away from fossil fuels. 13:58 13:58

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In the transport sector not only do we want to encourage the move away from fossil fuels and private cars but we also need to make sure in our public transport system we are not using fossil fuels.

I am very encouraged actually to hear that the National Transport Authority have committed to start transitioning away from diesel in the bus fleet to lower emission vehicles by the end of 2017 and they are hoping to have half the bus fleet converted by 2023 and the remaining from 2030. I think that is really important because we need leadership in the public transport system as well as looking at the private.

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We are approaching the end of the fossil age, we now fully understand the consequences of large scale consumption of coal, oil and gas over the past two centuries for the future health and wellbeing of our planet. Humanity has benefited hugely from fossil fuels but it has been at a significant cost. The greatest irony, and Conor has alluded to this as well, is that those that benefited least from fossil fuels are also those that will suffer most from human induced climate change.

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We must now with a much greater sense of urgency make the transition from a society and economy dependent on fossil fuels and wasteful consumption of natural resources to one that uses renewable and clean energy and places a much greater care and attention on the use of our precious and non-renewable natural resources.

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Transformational change is urgently needed across our energy, transport, agriculture, manufacturing and

domestic sectors, which will affect how we live, work, travel, heat our homes, produce our food and use our purchasing power as consumers.

Ultimately we have nothing to fear from these changes. 14:10
In fact Ireland has a great deal to gain by becoming a leader in this transition to a low carbon and resource efficient economy. By becoming a leader in this area we can capitalise on our natural advantages and also promote rapid decarbonisation by other countries which 14:10
will help reduce the cost and impacts of climate change on our children and grandchildren.

We as citizens, though, because I think it is important here that we look to ourselves, we as citizens need to 14:10
take personal responsibility in the transitions required, it is the work and protection at a local level, the recognition of the common good and the fostering of trust that contributes significantly to the overall state of the environment in Ireland. 14:11
State bodies such as the EPA involved in environmental protection have a key role to play in supporting homes, businesses and communities in adopting to low carbon and sustainable practices through both fiscal measures, regulatory interventions, education and awareness, but 14:11
ultimately to make any substantial social progress on many of the environmental and sustainability challenges that we face we are going to need widespread and willing public engagement at individual business and

community level.
Targets and limits and standards and rules are we now recognise no longer sufficient. We need people to want to do this. I suppose that is the great thing about seeing all of you here today and the level of interest in this topic. There may be resistance but we have seen from public responses to national action, such as smoking, smokey coal, plastic bags, et cetera, that this can be done. We all own the environment, it is a common good and we have the responsibility for its care and protection. After all our health, our wellbeing, our economy and our very culture depends on it. 14:12 14:12
At the core of this ambition is the need to engage the public and businesses in debating and defining behaviours and citizenship for a sustainable future. I believe that there is room to expand our current understanding of what citizenship is so as to embrace a more proactive approach to compliance, to caring for our local environment, the conservation of resources, the preservation and quality of the places that we live in and the acceptance of the necessary transition and ultimately a more joined-up social responsibility. 14:13 14:13
We can be enabled for sure but ultimately the power of change is in our own hands. Ultimately a sustainable Ireland is an Ireland with a vibrant economy that offers decent livelihood for all its citizens, people and communities that help and respect each other and underpinning this a protected environment that allows us to live more healthy lives. To become sustainable 14:13

we all need to change the way that we act as consumers in our homes, our businesses and our public bodies and our challenge is to do this within the planet's capacity and ecological limits.

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I will leave you just with this slide, which is one I love, and I think I came across it from UCC ultimately, which talks about energy independence, preserving our rainforests, green jobs, livable cities, renewables, clean water, et cetera, and if we do all of these things, and somebody from the audience was saying: What if it is a big hoax and we have created a better world for nothing? I think we should be doing this anyway but definitely there is a sense of urgency to do it in the context of climate change. Thank you.

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