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TRANSCRIPT OF SESSION TWO

MS. LAURA BURKE, ENVIRONMENTAL PROTECTION AGENCY

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GWEN MALONE STENOGRAPHY
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1 **SESSION 7 Roundtable Discussions**

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

6
7 This morning what I would like to do is discuss
8 national greenhouse gas emissions from the different
9 sectors as accounted for and reported to the EU and the
10 UN by the EPA. 12:39

11
12 I am then going to cover the interrelationship between
13 climate change and all other dimensions of our
14 environment and our health and wellbeing and then just
15 to finish with some observations on the challenges of 12:39
16 reducing greenhouse gas emissions, that is mitigation
17 and adaptation to climate change challenges that lie
18 ahead.

19
20 Firstly, just very quickly, the EPA, who we are, the 12:40
21 Environmental Protection Agency was established back in
22 1993. Our sponsor in Government is the Department of
23 Communications, Climate Action and Environment. We are
24 an independent public body and we guard our
25 independence, we are very proud of that independence in 12:41
26 all of our scientific decision-making and our
27 pronouncements and our responsibilities and powers are
28 set down in national legislation.

29

1 First of all we do a wide range of activities in the
2 areas of climate science, everything from industrial
3 regulation, which we look at things like clean
4 technology, best available technology, then chemical
5 regulations. We also provide the secretariat to the 12:41
6 climate change advisory counsel that was referred to
7 earlier and Chaired by John Fitzgerald and we have
8 other processes, for example strategic environmental
9 assessment, for example, on mitigation plans,
10 adaptation plans and other plans by Government. 12:42
11 We also have a role in communicating climate science
12 and in fact on 26th October we have an open public
13 lecture by Chris Rapley, that will be held in the
14 Mansion House and anybody is free to attend and the
15 topic is Communicating Climate Science, because it is 12:42
16 an area that can be very difficult to communicate.
17 Lastly, we will have potentially a new role in the
18 climate dialogue.
19
20 Moving directly on to reporting of greenhouse gases. 12:43
21 When I was looking at what would be appropriate, I
22 suppose, to talk about in this section I decided that
23 the national policy position is particularly relevant
24 to this Citizens' Assembly deliberations because your
25 deliberations are around how the State can make Ireland 12:43
26 a leader in tackling climate change. It clearly
27 articulates the State's ambitions rather than
28 obligations or targets that could be perceived as being
29 imposed upon us. In the context of my discussion I am

1 going to be talking really about where we are at with
2 regard to our national policy position. That policy
3 position looks at a long-term vision with an 80%
4 reduction in greenhouse gas or carbon dioxide emissions
5 across the electricity generation, built environment 12:45
6 and transport sectors and then an approach to carbon
7 neutrality in the agriculture sector.

8
9 Where do greenhouse gases come from? A wide range of
10 sources, everything from energy industry, residential, 12:46
11 transport, agriculture waste, all of these activities
12 generate greenhouse gas emissions and on an annual
13 basis the EPA produces what is called a national
14 inventory report identifying the sources of all of the
15 emissions and what they sum up to in the country. 12:46

16
17 I suppose we look at inventories which are effectively
18 looking behind you saying what were the emissions
19 previously in the country, and the most recent ones we
20 have are for 2015. Then we also look out into the 12:47
21 future. A bit like Conor was saying, you try to
22 predict into the future emissions are likely to be, and
23 that is done within a particular framework that is set
24 out by the EU and the UN so that every country's
25 projections are based on similar criteria. 12:47

26
27 There are additional complications with regard to
28 emissions trading sector activities and non-emissions
29 trading sector activities. I am not going to go into

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

3
4 So what do they look like? We tend to use 1990 as a
5 baseline year for emissions across the world in fact. 12:47
6 What you are seeing is in 1990 emissions in Ireland
7 were around 56 million tons and in 2015 they were 59.9
8 million tons, so an increase of around 6.7%. There were
9 a number of phases to those changes, and you will see
10 just in the various arrows on the graph here: Stage 12:48
11 one was 1990 to 2001 and emissions really increased as
12 a consequence of economic and population growth.

13
14 Moving to stage two, which was 2001 to 2008, we saw a
15 slight decline, and this is highlighted in the green 12:48
16 arrows, a slight decline due to some successful
17 decoupling, particularly in the energy sector, and a
18 slight decline in the agriculture sector.

19
20 Stage three, 2008 to 2014, a very big decline, then 12:49
21 followed by flat lining. That absolutely mirrors the
22 economic recession. So where you had a big decline what
23 you are seeing is that was the impact of the recession
24 primarily.

25 12:49
26 Then what we are starting to see in 2015 is increasing
27 again the emissions, so what we are seeing is little
28 evidence of decoupling between the economy emissions in
29 the highest sectors. Really what you are seeing is if

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

3
4 Then just to look at the various sectors, and I will
5 just pull them up here. There you go. Again looking 12:50
6 at the share between 1990 and 2015 what you are seeing
7 is agriculture in the green here, a very, very big
8 contributor to Irish greenhouse gas emissions, it was
9 around 37% of emissions in 1990, it is around 33% now,
10 but around one third of the emissions. 12:50

11
12 You are also seeing then if you look at the energy
13 sector, around 20% in 1990, a similar percentage in
14 2015, so around 20% of emissions.

15 12:51
16 Transport, though, has grown dramatically as a
17 percentage share, so from around 9% back in 1990 up to
18 just under 20% in 2015. You are seeing a rapid growth
19 in the percentage of emissions coming from that
20 transport sector. 12:51

21
22 What I thought, just very briefly, was to look at the
23 trends in each of the key sectors, transport,
24 agriculture and energy. I don't want to go into too
25 much detail on those, it is really just to show the 12:51
26 transport emissions are 130% higher in 2015 than they
27 were in 1990. You see a rapid growth, a peak year of
28 2007, the heart of the Celtic Tiger, at 14.4 million
29 tons, then a decrease with the recession and rising

1 again.

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

12:52

6
7 Moving on to agriculture, in 1990 there was around 20
8 million tons, just under 21 million tons, 1998 was the
9 peak, it went up to 22 million tons, and now we are
10 down at round 19.8 tons. Overall emissions are down
11 around 5 per cent on 1990, however I would say it is
12 expected that food wise 2025, which is the Agricultural
13 Development Programme will reverse this trend so. We
14 are already seeing a 1.6% increase in 2015 mainly due
15 to a rise in dairy cattle numbers. What you are seeing
16 on the very last bar here is emissions rising again in
17 the agriculture sector.

12:53

12:53

18
19 Then, lastly, from the sectoral perspective just to
20 look at energy, and what you are seeing is a rapid
21 growth between 1990 and 2001 followed by significant
22 decreases. Those decreases mainly around closing older
23 peat plants around the country and also to new gas
24 fired plants and newer, more efficient peat plants
25 coming on stream.

12:54

12:54

26
27 However, and again in 2015, because I suppose that is
28 the focus as we come out of the recession that I think
29 is particularly of interest, what you are seeing is an

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

12:55

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

12:55

12:55

19
20 Again to look at those three sectors, the three key
21 sectors, and what you will see here is the solid lines
22 are the historic emissions and the dotted lines is
23 predicting into the future. What the projections imply
24 is that the decoupling of emissions from the economy is
25 likely to tail off in the electricity generation sector
26 post 2020, so you start seeing the blue line going up
27 again, and it was never particularly evident in the
28 transport and agriculture. Basically in particular
29 what we see with transport it mirrors the economy, more

12:56

12:56

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

3
4 I was also asked just to say: Where is Ireland at
5 compared to other countries? What you see here is the 12:56
6 red line, which is the tons of greenhouse gas emissions
7 per person in Ireland, the blue line is the population
8 increase. So what you could be saying is, well,
9 actually it is great, Ireland have gone from 16 tons
10 per person in 1990 down to 12.9 tons per person in 12:57
11 2015, however the population increased by one million
12 people and also emissions went up, so you are dividing
13 by a bigger numbers so ultimately, of course, the
14 emissions will look lower then.

15 12:57
16 Yes the per capita emissions have gone down but
17 actually overall emissions went up in that time period.
18 Therefore I also think it is useful to look and see
19 where we are at with regard to different European
20 countries. You will see Ireland is the fourth highest 12:58
21 with regard to emissions after Luxembourg, Iceland and
22 Estonia. We are well above the average. One thing I
23 suppose to highlight here is if you excluded methane,
24 which is kind of primarily the agricultural emissions
25 we would be closer to the average. Agricultural 12:59
26 emissions are having an impact on the per capita
27 emissions.

28
29 This looks a very complex slide and it is just really

1 to give a sense of the scale of the challenge, so the
2 blue is all of the actual emissions, the green are
3 projected emissions and at the very end in 2015, this
4 minus 80%, is the national aspiration. This is what
5 the national policy position says, we are going to be 13:02
6 80% reduced in electricity generation built environment
7 and transport. What you see in the green lines is
8 actually the projections are showing we are going in
9 the other way and the scale of the challenge the longer
10 we leave it the more significant reductions we will 13:03
11 need on an annual basis.

12
13 If we start reducing our emissions now we will need a
14 reduction of around 0.75 million tons per year. If you
15 leave that to 2035 you are talking about dramatic 13:04
16 emission reductions of around two million tons a year
17 in order to achieve our national ambition of reduction.
18 So this is not anything imposed upon us by the EU, the
19 UN, or anybody else, this is our own national policy
20 position of an 80% reduction. 13:04

21
22 I was also asked to talk about the interaction of
23 climate change with other environmental challenges
24 because nothing exists in isolation.

25 13:05
26 The EPA publish every four years a state of the
27 environment report. The most recent report we
28 published was at the end of 2016, so it is very recent,
29 and it presents a detailed analysis of the condition of

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

9
10 Ultimately the report concluded that climate change is 13:06
11 the defining environmental issue of our times, that
12 Ireland's environment is generally good but there are
13 serious underlying areas of concern and signals of
14 concern. It also identified that while the worst of the
15 worst of our rivers have improved we have lost the best 13:07
16 of the best with regard to water quality. Localised
17 problems such as air quality and water pollution are
18 masked by national figures, and I will come back to
19 this later. Species such as the Corncrake and the
20 Curlew are almost extinct in Ireland and, ultimately of 13:48
21 course, environmental legislation keeps us safer and
22 healthier and needs to be implemented.

23
24 Specifically around climate change what the report
25 identified is that climate change is now with us, and 13:48
26 Conor has talked about this already. The sooner we act
27 the less damage will be done to our society, our
28 economy and our environment. To protect our
29 environment, safeguard our wellbeing and secure our

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

8
9 Ireland's energy system needs to undergo a major
10 transformation in the coming decades as part of actions 13:49
11 to address climate change. In relation to transport the
12 there needs to be support for a shift from the private
13 car to an efficient, sustainable transport system and a
14 more proactive and systematic approach to land use and
15 transport planning, so where we build our houses, our 13:50
16 towns and villages because ultimately that has an
17 impact on the transport that we use and the emissions
18 from those sectors.

19
20 In conclusion then just some remarks that links, I 13:50
21 suppose, climate change with other environmental
22 issues. I look back not to the science adviser, to the
23 current president of America but the previous
24 president, President Obama and there is a guy called
25 John Holdren, and he identified we need a lot of 13:51
26 mitigation, that means we need to reduce our emissions,
27 and we will also need adaptation, so adapt to a
28 changing climate. We need a lot of mitigation in order
29 to hold the changes in climate to the level that

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

10
11 We also need to be really careful of unintended 13:52
12 consequences, for example a couple of years ago there
13 was promotions through Vehicle Registration Tax of low
14 carbon dioxide cars, so diesel cars. Diesel car numbers
15 have gone up but diesel cars have a higher impact 13:52
16 because of things like air pollutants, of NOx and
17 particulates.

18
19 On one hand we were promoting different types of cars
20 saying this is good for the climate but actually they 13:53
21 had a negative impact on air quality. So you need to
22 make sure that when you are looking at policy measures
23 there is not unintended consequences.

24
25 Another area would be in the likes of forestry, where 13:53
26 we want to encourage forestry because it is good for
27 climate but if you do forestry in the wrong places or
28 in upland areas this can possibly have a damaging
29 affect on water quality and streams.

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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. 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

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 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 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

13:55

13:55

1 but at this stage most of that is in a degraded state.
2 There is also a public service obligations levy of €118
3 million for peat-fired power, and that is the levy that
4 each of us pay in our electricity bill, so we pay a PSO
5 to support the burning of peat, this is equivalent to 13:56
6 €470,000 per megawatt capacity and the subsidy for wind
7 power is €110,000 per megawatt capacity. So we are
8 subsidising at a very high level a very damaging
9 emitter of carbon into the environment.

10
11 With regard to co-benefits then, air pollution is both 13:57
12 an environmental and social problem, it leads to a
13 multitude of adverse affects on health, ecosystems, the
14 built environment and climate and the European
15 Environment Agency estimates that poor air quality 13:58
16 contributes to over 400,000 premature deaths across
17 Europe and around 1,200 of those premature deaths are
18 linked in Ireland. The most significant air pollutants
19 in Ireland arise from traffic emissions, so we are
20 coming back to traffic and the burning of smokey fuels 13:58
21 in people's homes. So very simply the move away from
22 fossil fuels would have a benefit from both the climate
23 and an air quality perspective, it is a win/win if you
24 move away from fossil fuels.

25
26 In the transport sector not only do we want to 13:59
27 encourage the move away from fossil fuels and private
28 cars but we also need to make sure in our public
29 transport system we are not using fossil fuels.

1 I am very encouraged actually to hear that the National
2 Transport Authority have committed to start
3 transitioning away from diesel in the bus fleet to
4 lower emission vehicles by the end of 2017 and they are
5 hoping to have half the bus fleet converted by 2023 and 14:07
6 the remaining from 2030. I think that is really
7 important because we need leadership in the public
8 transport system as well as looking at the private.

9
10 We are approaching the end of the fossil age, we now 14:07
11 fully understand the consequences of large scale
12 consumption of coal, oil and gas over the past two
13 centuries for the future health and wellbeing of our
14 planet. Humanity has benefited hugely from fossil fuels
15 but it has been at a significant cost. The greatest 14:08
16 irony, and Conor has alluded to this as well, is that
17 those that benefited least from fossil fuels are also
18 those that will suffer most from human induced climate
19 change.

20 14:08
21 We must now with a much greater sense of urgency make
22 the transition from a society and economy dependent on
23 fossil fuels and wasteful consumption of natural
24 resources to one that uses renewable and clean energy
25 and places a much greater care and attention on the use 14:09
26 of our precious and non-renewable natural resources.

27
28 Transformational change is urgently needed across our
29 energy, transport, agriculture, manufacturing and

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

4
5 Ultimately we have nothing to fear from these changes. 14:10
6 In fact Ireland has a great deal to gain by becoming a
7 leader in this transition to a low carbon and resource
8 efficient economy. By becoming a leader in this area
9 we can capitalise on our natural advantages and also
10 promote rapid decarbonisation by other countries which 14:10
11 will help reduce the cost and impacts of climate change
12 on our children and grandchildren.

13
14 We as citizens, though, because I think it is important
15 here that we look to ourselves, we as citizens need to 14:10
16 take personal responsibility in the transitions
17 required, it is the work and protection at a local
18 level, the recognition of the common good and the
19 fostering of trust that contributes significantly to
20 the overall state of the environment in Ireland. 14:11

21 State bodies such as the EPA involved in environmental
22 protection have a key role to play in supporting homes,
23 businesses and communities in adopting to low carbon
24 and sustainable practices through both fiscal measures,
25 regulatory interventions, education and awareness, but 14:11
26 ultimately to make any substantial social progress on
27 many of the environmental and sustainability challenges
28 that we face we are going to need widespread and
29 willing public engagement at individual business and

1 community level.

2 Targets and limits and standards and rules are we now
3 recognise no longer sufficient. We need people to want
4 to do this. I suppose that is the great thing about
5 seeing all of you here today and the level of interest 14:12
6 in this topic. There may be resistance but we have
7 seen from public responses to national action, such as
8 smoking, smokey coal, plastic bags, et cetera, that
9 this can be done. We all own the environment, it is a
10 common good and we have the responsibility for its care 14:12
11 and protection. After all our health, our wellbeing,
12 our economy and our very culture depends on it.

13 At the core of this ambition is the need to engage the
14 public and businesses in debating and defining
15 behaviours and citizenship for a sustainable future. I 14:13
16 believe that there is room to expand our current
17 understanding of what citizenship is so as to embrace a
18 more proactive approach to compliance, to caring for
19 our local environment, the conservation of resources,
20 the preservation and quality of the places that we live 14:13
21 in and the acceptance of the necessary transition and
22 ultimately a more joined-up social responsibility.

23 We can be enabled for sure but ultimately the power of
24 change is in our own hands. Ultimately a sustainable
25 Ireland is an Ireland with a vibrant economy that 14:13
26 offers decent livelihood for all its citizens, people
27 and communities that help and respect each other and
28 underpinning this a protected environment that allows
29 us to live more healthy lives. To become sustainable

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

14:14

5
6 I will leave you just with this slide, which is one I
7 love, and I think I came across it from UCC ultimately,
8 which talks about energy independence, preserving our
9 rainforests, green jobs, livable cities, renewables,
10 clean water, et cetera, and if we do all of these
11 things, and somebody from the audience was saying:
12 What if it is a big hoax and we have created a better
13 world for nothing? I think we should be doing this
14 anyway but definitely there is a sense of urgency to do
15 it in the context of climate change. Thank you.

14:14

14:15

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