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A compilation of questions to - and answers by - Ireland
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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Question by Brazil at Tuesday, 31 March 2015
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Type: Before 31 of March
Title: Emission reduction target

In table 2 (f), there is the following statement: “In December 2009, the European Council reiterated the conditional offer of the EU to move to a 30% reduction by 2020 compared to 1990 levels as part of a global and comprehensive agreement for the period beyond 2012, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately according to their responsibilities and respective capabilities.” In the BR there is no explanation why or if such conditions have been fulfilled by the EU. For example, Brazil has been able to promote a huge reduction of GHG emission mainly due to the drop in deforestation rates in the Brazilian biomes, especially in the Amazon, whose rate has been constantly and consistently decreasing since 2004. Other developing countries are contributing adequately to climate change mitigation according to their responsibilities and respective capabilities. Please explain the reasons for keeping 20% as the target.

Answer by Ireland at Tuesday, 28 May 2015

Ireland welcomes that more than 90 Parties representing around 80% of global emissions have made 2020 mitigation pledges in order to enhance transparency, comparability of efforts and effective implementation. However, a significant gap still remains to be bridged between the collective level of mitigation ambition up to 2020 and the global emissions trajectory in line with the objective of staying below 2°C. The EU appreciates the efforts undertaken under the ADP's WS2 on further international cooperation on enhancing pre-2020 mitigation ambition and the efforts such as Brazil to deviate from its business as usual levels of emissions, in particular its efforts in relation to deforestation. However, the latest UNEP Emission Gap Report from November 2014 give evidence that the pledges we have seen to date are insufficient to be on a cost efficient trajectory in line with the 2°C objective, even when fully implemented by 2020.

Furthermore, the current system remains fragmented with only a few Parties with commitments under the Second Commitment Period of the Kyoto Protocol. As a result, no "global and comprehensive agreement for the period beyond 2012" is yet in place for the period 2013-2020.

Question by Brazil at Tuesday, 31 March 2015
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Type: Before 31 of March
Title: Emission reduction target 2

Based on Table 6 (a) "Information on greenhouse gas projections under a 'With Measures' Scenario", the GHG emissions with or without LULUCF increased from more than 50 thousand ktCO2eq in the base year to 62,832.83 kt CO2 eq in 2020. Please explain possible actions being taken by Ireland in order to avoid the projected 20% increase in GHG emissions from the base year to 2020. In addition, the total projected GHG emissions in table 6 (a) are the same for 2020 with or without LULUCF (62,832.83 kt CO2 eq). Please explain why the projection is the same.

Answer by Ireland at Tuesday, 28 May 2015

The figures quoted in Ireland's first Biennial Report were based on the projections published by the Environmental Protection Agency (EPA) during 2012. The With Measures projection at that time was based on the policies and measures which were already in place at the end of 2010. The With Additional Measures projection scenarios reflect the achievement of all Government's targets in the areas of Energy Efficiency and Renewable Energy. The EPA publishes an update to its projection scenarios each year and the latest version was published on 18th May 2015[1]. These projections suggest that emissions levels in 2020 will be between 2% below and 8% above 1990 levels by 2020. Ireland's emissions increased strongly in the decade between 1995 and 2005, peaking at about 26% above 1990 levels, but have been gradually declining since then. Emissions in 2013 are 4% higher than in 1990. During the same period Ireland's GDP grew significantly, by 177%, recognising an important decoupling effect in terms of the economy and levels of greenhouse gas emissions.

(Attachment: Q by BRA Emission reduction target 2.pdf)

Question by Brazil at Tuesday, 31 March 2015
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Type: Before 31 of March
Title: Correction

It seems that table 2 (d) is incomplete: Under "LULUCF in base year level and target" it is stated only the following: "Contribution of LULUCF is calculated using". Please clarify.

Answer by Ireland at Tuesday, 28 May 2015

The Quantified Emissions Reduction Target of the EU and its Member States under the Convention, of a 20% reduction below 1990 levels by 2020, does not include accounting for Land Use, Land Use Change and Forestry. LULUCF is part of the joint binding commitment of the EU, its Member States and Iceland under the second commitment of the Kyoto Protocol. The EU and its Member States apply all the relevant rules related to LULUCF under the Kyoto Protocol.
There appears to have been a technical problem which resulted in the response to this question not being fully reflected. The full response should read "Contribution of LULUCF is calculated using the IPCC 2003 Guidelines."

Question by New Zealand at Monday, 30 March 2015
Category: All emissions and removals related to its quantified economy-wide emission reduction target
Type: Before 31 of March
Title: Agriculture emissions

Given that the agriculture sector contributes nearly one third of Ireland's emissions, what research is Ireland undertaking in this area to ensure it will meet its future emissions target?
When does Ireland expect the results of this research (ie, new technologies) to be commercially viable?

Answer by Ireland at Tuesday, 28 May 2015

Scientific research has a central role to play in developing our understanding of cost effective mitigation options for agriculture and the carbon sequestration potential of our natural land resources. To this end, the Department of Agriculture, Food and the Marine (DAFM) recognises the important role that the agriculture and land use sector plays in mitigating greenhouse gases and is strongly committed to providing funding for targeted research in the area of agriculture and climate change.

Irish Agricultural Greenhouse Gas Research

Agricultural Greenhouse Gas research is focussed on the following issues:
a) Understand the key processes involved in the production of methane and nitrous oxide emissions

b) Develop of key mitigation strategies such as dietary strategies, manure management, fertiliser technologies as well as researching future technologies

c) Quantify the carbon sequestration potential of agricultural soils

d) Refinement of emission factors and land-use factors associated with AFOLU

e) Development of climate smart and climate resilient production systems and GHG decision support systems for farmers

Establishment of a national Agricultural GHG Research Initiative for Ireland

Over the past decade, a large body of research has been carried out on agricultural greenhouse gas emissions, funded primarily by both DAFM and the Environmental Protection Agency (EPA). To ensure the co-ordinated and efficient use of research funds, DAFM funded the establishment of The Agricultural Greenhouse Gas Research Initiative for Ireland (AGRI-I) in 2011. This is an organizational and collaborative framework designed to a) build a critical mass of scientific expertise in GHG research, b) co-ordinate uniform measurement protocols and c) address a specific set of research issues.

The Network has a specific set of research aims, primarily focussed on allowing emissions reduction strategies to be inputted into national inventories. This network works closely with the EPA, the national agency responsible for Ireland's National Inventory Report.

The recently completed Sustainable Healthy Research Agri-Food Research Plan (SHARP) will guide the content of future research calls over the next few years. Key investment areas have been identified, one of which is soils, land use, climate change & trans-boundary gases. The objectives in relation to climate change include further work on nitrous oxide emissions, impacts of land use management and carbon stocks, and technologies to reduce methane emissions. The work will build on the investment to date under the Agricultural Greenhouse Gas Research Initiative for Ireland.

On-going research will continue to develop further measures and technologies to reduce emissions from the agriculture sector through analysis of potential advancements in a range of agricultural activities from animal husbandry and health to feeding and nutrient management. The Department continues to monitor on-going research both nationally and internationally in an effort to find suitable mitigation technologies and approaches.

A Marginal Abatement Cost Curve (MACC) for Irish Agriculture[1] was prepared in 2012 to assess and rank the mitigation options available to the agricultural industry, in order of cost-effectiveness. It projected that the aggregate abatement potential of cost-effective measures that can be accounted for in the inventories, is likely to equate to c. 1.1 Mt CO¬2e by 2020 or 5-6% of agricultural emissions. Cost-effective measures were those that are based on further improvements in production efficiencies. However, there are many more potential mitigation measures that are currently the subject of national and international research (Annex 1).

These measures may become available for adoption in the future. This is often referred to as the 'conveyor' belt of research, where concepts are often trialled initially in a laboratory environment, followed by plot / animal trials and farm evaluation trials, a process which can take many years to complete. Annex 1 provides an overview of current agricultural GHG research Ireland is engaged in both nationally and internationally.

Before any of these measures can be included in any future iteration of the MACC, sufficient research data has to be available to assess:

[1] www.teagasc.ie/publications/2012/1186/1186_Marginal_Abatement_Cost_Curve_for_Irish_Agriculture.pdf

i. their efficacy in reducing GHG emissions while maintaining productivity under controlled experimental conditions;
ii. their efficacy in a real life farm environment;
iii. their potential interactions with other mitigation measures and farm management aspects;
iv. their costs-benefit ratios.

Our current MACC for Irish Agriculture was based on a comprehensive 10-year interdisciplinary research programme, which resulted in a combined mitigation potential of 1.1 Mt CO2eq. Therefore, a first-order estimate would suggest that over the last 10 years, research has expanded the total national mitigation potential by approximately 0.11-0.25 Mt CO2eq per year.
It is impossible to forecast to what extent this total mitigation potential can be expanded on over the period to 2050.Whilst some of the emerging measures are now 'close to roll-out', the efficacy of many of the other measures currently under research is as of yet unknown.
On the one hand, there are three reasons to expect that the roll-out of new measures may be accelerated over the time-period to 2050:

1. The mitigation potential of many of the measures in the MACC resulted as 'co-benefits' from completed research projects that were primarily focussed on improving agricultural production. On-going research (the results of which are likely to be included in future iterations of the MACC) focuses more explicitly on identifying strategies to reduce the carbon-intensity of agricultural produce.
2. Internationally, the amount of research funding committed to mitigation of GHG from agriculture has risen significantly in recent years;
3. Research, as well as research funding, is increasingly being coordinated in multidisciplinary and multi-lateral networks of research collaboration. Such collaborative initiatives provide synergies and critical mass in national and international research and avoid undue duplication and could thus result in more effective delivery of emerging measures.

On the other hand, there are reasons to expect that the roll-out of new measures may decelerate between now and 2050. This will be the case if the measures identified to date in our MACC represent the 'low-hanging fruit' of mitigation, both in terms of their efficacy and their cost-effectiveness. For example, it is widely accepted that the mitigation of methane emissions from bovine animals, which currently accounts for approximately half of agricultural emissions, is particularly challenging, compared to e.g. the mitigation of nitrous oxide emissions. Therefore, as the roll-out of current mitigation measures reduces nitrous oxide emissions, the share of methane emissions increases in the agricultural emissions profile, potentially making further reductions more onerous.
As a result, we refrain from any attempts to quantify the total mitigation potential of ongoing research, other than to conclude that:

- It is unlikely that the emissions gap by 2050 can be met or 'closed' by new technology alone

- It is likely that technological innovation will play an important role in reducing national emissions from agriculture by 2050, and thus 'narrow the emissions gap'.

(Attachment: Q by NZL_Agriculture emissions.pdf)

Question by China at Monday, 30 March 2015
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Type: Before 31 of March
Title: Electricity savings in the industry, service, trsidential and transport sectors

When will Ireland plan to execute the policy "Electricity savings in the industry, services, residential and transport sectors"? Is there synergies for energy sector by implementing those actions in respective sectors?

Answer by Ireland at Tuesday, 28 May 2015

An indicative national target for energy efficiency savings by 2020 was set out by the Government in its Energy White Paper published in 2007[1]. The target is that reductions in primary energy consumption of some 31,925 GWh should be identified and achieved. This represents a saving of 20% over Ireland's average unadjusted final energy consumption for the years 2001–2005. A recent update to progress on this policy target is set out in Ireland's Third National Energy Efficiency Action plan, which was published during 2014[2].

Some policies and measures outlined in that plan (which are thereafter reflected in the With Additional Measures Scenario of the Greenhouse Gas Emissions projections) have impacts across a range of sources of energy demand including electricity. As electricity demand reductions are captured in the Emissions Trading Scheme this element of the savings are stated separately in the quantification of the effects of policies and measures.

The reference to these electricity savings in the National Communication are the estimate of the net reductions in demand for electricity arising from the other policies and measures. For example the Government Programme to retrofit houses and buildings is estimated to save primary energy of 3000 GWh by 2020, of which a proportion will be captured by way of electricity savings. As such it is not a measure in its own right, rather the net effect of other measures that will be implemented over time, subject to appropriate funding, as we approach 2020.

(Attachment: Q by CHN_Electricity savings in the industry.pdf)

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[1] The Department of Communications Energy and Natural Resources expects to publish a new Energy Policy Framework later in 2015

[2] http://www.dcenr.gov.ie/NR/rdonlyres/20F27340-A720-492C-8340-6E3E4B7DE85D/0/DCENRNEEAP2014publishedversion.pdf

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Question by China at Monday, 30 March 2015
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Type: Before 31 of March
Title: ambition of the target

In WM scenario, in 2020 the GHG emission of Ireland will be 14% higher than 1990 level. In WAM scenario, the emission in 2020 is still higher than the level of base year. How would Ireland take lead in mitigation of climate change as a developed country Party?

Answer by Ireland at Tuesday, 28 May 2015

The figures quoted in Ireland's first Biennial Report were based on the projections published by the Environmental Protection Agency (EPA) during 2012. The With Measures projection at that time was based on the policies and measures which were already in place at the end of 2010. The With Additional Measures projection scenarios reflect the achievement of all Government's targets in the areas of Energy Efficiency and Renewable Energy. The EPA publishes an update to its projection scenarios each year and the latest version was published on 18th May 2015[1]. These projections suggest that emissions levels in 2020 will be between 2% below and 8% above 1990 levels by 2020. Ireland's emissions increased strongly in the decade between 1995 and 2005, peaking at about 26% above 1990 levels, but have been gradually declining since then. Emissions in 2013 are 4% higher than in 1990. During the same period Ireland's GDP grew significantly, by 177%, recognising an important decoupling effect in terms of the economy and levels of greenhouse gas emissions.

Ireland's target under the EU Burden Sharing Agreement for the first commitment period of the Kyoto Protocol was to limit the growth of its emissions to 13% above base year emissions. Ireland is on target to demonstrate compliance with its obligations under the first commitment period of the Kyoto Protocol later this year.

Within the EU Climate and Energy Package, which sets ambition levels for the period 2013-2020 (in line with the second commitment period of the Kyoto Protocol) emissions targets are split between Emissions Trading Scheme (ETS) and non – ETS sectors.

In respect of the ETS (which is made up primarily of Power Generation and emissions intensive industry), which accounts for approximately 27% of Irish emissions, a shared target of a 21% reduction relative to 2005 has been agreed. In this respect, thus far Ireland's ETS emissions have already fallen significantly, by approximately 29% in 2014. The most recent projections by the Environmental Protection Agency highlight that by 2020 these emissions will be in the range 26 – 39% below 2005 levels. This represents a significant reduction in these emissions. Multiple different factors can be ascribed to this progress including significant progress on increasing the share of renewables in Ireland's power generation mix. Renewables as a percentage of gross electricity consumption in 2014 accounted for 22.6% of consumption, a significant increase since 2005 when the equivalent figure was 7.2%. The current target is that this level should increase further, to 40% by 2020.

The remaining 73% of Irish emissions are regulated by the Effort Sharing Decision, under which a very significant reduction target of a 20% reduction relative to 2005 has been agreed for Ireland which represents a hugely significant increase on the target set for the first commitment period of the Kyoto Protocol. Agriculture (45%) and Transport (26%) make up a very sizable share of these emissions with emissions from buildings, low energy intensive industry and waste making up the majority of the remainder. The dominance of emissions from the agriculture sector which is already very efficient from an emissions intensity perspective presents great challenges for Ireland in meeting these targets. According to most recent data, aggregate emissions in these sectors have already fallen by about 12% relative to 2005 but the Government is keenly aware of the possibility that emissions may begin to increase again in the event of sustained economic growth, particularly in the transport sector. The recently published projections suggest that these emissions would be 9-14% below 2005 levels in 2020.

In 2009 Ireland introduced a carbon tax within the non ETS sectors which applies to all fossil fuel emissions in those sectors. The tax applies to all fuels at the same rate of €20 per tonne since June of 2014. There has also been significant progress in terms of tightening the regulation of Building Standards over this time and significant subsidies have been available to retrofit existing homes. There has been mandatory regulation of transport fuels in line with the EU objective in order to ensure that such fuel has a 10% renewable component by 2020. Furthermore, significant progress has been made in enabling the emergence of electric vehicles by way of the development of the necessary infrastructure alongside taxation based incentives for the purchases of these vehicles. These policies and measures are just some examples of the range of actions that have been taken in Ireland over the last decade which have resulted in a peaking of Irish emissions and a gradual decoupling of economic growth from energy demand and emissions growth.

Finally from an institutional perspective Ireland also continues to show leadership in terms of mitigation ambition. The Climate Action and Low Carbon Development Bill 2015 is currently being considered by the Oireachtas (Irish Parliament), with enactment anticipated during the course of 2015. This Bill will create the institutional framework necessary to progress efficiently towards the long term

decarbonisation objectives as outlined by the Government in its National Policy Position in April 2014. In this policy statement the Government outlined a national objective of decarbonisation in the electricity generation, transport and built environments alongside setting a goal of moving towards carbon neutrality in the agriculture and land sector. In summary, despite the financial crisis that has deeply impacted Ireland, the focus on the long term decarbonisation is being maintained thus demonstrating Ireland's continued commitment to transition to a low carbon economy by 2050.

(Attachment: Q by CHN ambition of the target.pdf)

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[1]http://www.epa.ie/pubs/reports/air/airemissions/EPA%202015%20GHG%20Projections%20Publication%20Final.pdf