

# THE CLIMATE CHANGE RESPONSE BILL 2010: AN ASSESSMENT<sup>1</sup>

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## **Abstract**

Climate change is an important problem. It would be desirable to have legislation that would put Ireland on a low-cost and equitable trajectory to a zero-carbon economy. The draft Climate Change Response Bill 2010 will not achieve that. The exact emission reduction targets for 2020 are ambiguous, but considerably more ambitious than Ireland's obligations under EU legislation. EU legislation severely constrains the options for domestic climate policy so that the extra emission reduction would fall almost exclusively on agriculture, households, small and medium enterprises, and transport. The target in the draft bill for 2020 would require draconian policies. It would be better to keep the EU targets for 2020. The targets for 2030 and 2050 would require a further sharpening of climate policy. It would be better to base climate policy on predictably rising carbon prices. The draft bill fails to create a framework that would ensure that policy interventions are effective, as cheap as possible, and fair. Current policy meets none of these criteria. The Regulatory Impact Analysis is a collection of qualitative assertions that shed little light on the impact of the draft bill. The proposed National Climate Change Expert Advisory Body would need to acquire the appropriate expertise and be truly independent to fulfil its envisaged role.

## **Key words**

Climate policy, Ireland

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<sup>1</sup> John Fitz Gerald and Sean Lyons had excellent comments on an earlier draft. The usual disclaimer applies.

## 1. Introduction

Climate change is an important problem. Ireland's emissions, and hence its emission reduction efforts, contribute only trivially to (avoiding) climate change. However, as a responsible and mature nation, Ireland should contribute its share to the global effort to solve the climate change problem. Research by ourselves (Conefrey et al. 2008; Tol 2009) and others (Bernard and Vielle 2009; Böhringer et al. 2009a; Böhringer et al. 2009b; Clarke et al. 2009; Kretschmer et al. 2009) has shown that emission reduction need not be expensive, provided that policies are carefully designed and targets are set in accordance with the time scales of capital turnover and innovation. The Climate Change Response Bill 2010 is the opportunity to create a legislative framework to reduce Ireland's greenhouse gas emissions without adverse implications for economy or society.

The draft Climate Change Response Bill 2010 ("the draft bill") does not meet its potential nor does the associated Regulatory Impact Analysis provide an adequate underpinning and justification. The latter is a qualitative rather than quantitative, while not addressing all of the relevant issues contained in the draft bill as discussed at several points below. We therefore welcome the opportunity to comment on the draft bill, hoping that our remarks will be used to improve the draft bill.

This comment continues as follows. Section 2 raises some issues with regard to the clarity of the draft bill. Section 3 discusses the 2020 target, and Section 4 the 2030 and 2050 targets. Section 5 treats policy measures. Section 6 is on the National Climate Change Expert Advisory Body. Section 7 discusses the Regulatory Impact Analysis. Section 8 concludes.

## 2. Issues for clarification

### 2.1. *Class A and Class B greenhouse gases*

The draft bill needlessly distinguishes between Class A and Class B greenhouse gases. In 2008, Class B accounted for 1% of total greenhouse gas emissions, with Class A contributing the remaining 99%. The two classes of emissions are treated the same except for the choice of base year, which is 1990 for Class A and 1995 for Class B. However, emissions of Class B greenhouse gases rose from 36 to 203 kilotonnes of carbon dioxide equivalent between 1990 and 1995.<sup>2</sup> Base year emissions according to the draft bill are 55,862 kilotonnes of carbon dioxide equivalent. If the Class B base year were 1990 as well, base year emissions would be 55,695 kilotonnes of carbon dioxide equivalent. This is a difference of a trivial 0.3%. Furthermore, the greenhouse gas accounting systems of both the United Nations and the European Union take 1990 as the base year. It would be simpler and less confusing to have a single class of greenhouse gases.

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<sup>2</sup> The data are from the ESRI Environmental Accounts [http://www.esri.ie/irish\\_economy/environmental\\_accounts/](http://www.esri.ie/irish_economy/environmental_accounts/). Note that the ESRI Environmental Accounts exactly reproduce total greenhouse gas emissions according to Ireland's submissions under the United Nations Framework Convention on Climate Change. See (Lyons et al. 2009).

## 2.2. *Land use, land use change, and forestry emissions*

The draft bill refers to creating or enhancing sinks of carbon dioxide. However, the draft bill does not specify how such sinks are to be measured. At the moment, the Environmental Protection Agency uses two alternative measurements. In 2008, sinks removed 1.5 million tonnes of carbon dioxide from the atmosphere according to the system of accounting of the United Nations,<sup>3</sup> while 2.8 million tonnes of carbon dioxide were removed according to the system of accounting of the European Union.<sup>4</sup> A choice needs to be made.

## 2.3. *Specification of 2020 targets*

Section 4(1) of the draft bill specifies that emissions should be reduced by 2.5% per year for a period of 13 years (1 January 2008 to 31 December 2020) so that 2020 emissions are 28% below 2007 emissions,<sup>5</sup> while the Explanatory and Financial Memorandum (“the explanatory memorandum”) specifies that emission should be reduced by 2.5% per year for a period of 12 years so that 2020 emission are 26% below 2008 emissions. The difference is about 200 kilotonnes of carbon dioxide equivalent. It would be clearer to express the 2020 target relative to 1990 emissions, which would be consistent with the 2030 and 2050 targets in the draft bill and with the UN and EU accounting frameworks. The target would then be a 12% emission reduction in 2020 relative to 1990.<sup>6</sup>

## 3. **The choice of target for 2020**

### 3.1. *International implications of the targets for 2020*

The greenhouse gas emissions targets specified for 2020 are 12% below 1990 emissions, or 30% below 2005 emissions. This is the target that the EU agreed if there would be a meaningful international agreement on climate policy.<sup>7</sup> There is not. It is not clear why Ireland would want to adopt the more stringent target without the European partners,<sup>8</sup> and thus diminish the EU negotiating position in UN Framework Convention on Climate Change (“UNFCCC”) process.

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<sup>3</sup> See

[http://unfccc.int/files/national\\_reports/annex\\_i\\_ghg\\_inventories/national\\_inventories\\_submissions/application/zip/irl-2010-crf-1nov.zip](http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/irl-2010-crf-1nov.zip)

<sup>4</sup> See [http://www.epa.ie/downloads/pubs/air/airemissions/EPA\\_GHG\\_Emission\\_Projections\\_2010.pdf](http://www.epa.ie/downloads/pubs/air/airemissions/EPA_GHG_Emission_Projections_2010.pdf)

<sup>5</sup> Assuming that the emission reductions are cumulative; the draft bill refers to an average emission reduction of 2.5% per year, but does not specify whether this is an arithmetic or a geometric average; unqualified averages are typically arithmetic while growth rates are commonly geometrically averaged

<sup>6</sup> More precisely, 11.8% if the target is 12 years of 2.5% emission reduction per year from 2008 onwards, or 12.2% if the target is 13 years of 2.5% emission reduction from 2007 onwards. Note that these calculations assume that sinks are accounted for according to the UN rules, and that the base year for Class B greenhouse gases is 1990 rather than 1995.

<sup>7</sup> See [http://ec.europa.eu/clima/policies/brief/eu/package\\_en.htm](http://ec.europa.eu/clima/policies/brief/eu/package_en.htm)

<sup>8</sup> Note that the Regulatory Impact Analysis does not discuss this issue.

### 3.2. *Limited access to flexibility mechanisms*

In the EU climate and energy package for 2020, access to international flexibility instruments, particularly the Clean Development Mechanism (“CDM”), is constrained. There is an informal agreement that, if the EU opts for the more stringent target, international flexibility will be allowed to a greater extent. However, this agreement does not extend to Member States unilaterally adopting a more stringent target. This implies that Ireland will have to meet its emissions target largely through domestic emission reduction, which is likely to be much more costly than using CDM. This is an additional reason for not writing the 30% reduction target (relative to 2005) into the draft bill.

### 3.3. *The feasibility of the targets for 2020*

The EU climate and energy package for 2020 sets separate targets for ETS and non-ETS emissions, regulates ETS emissions through permits that are tradable throughout the EU, and allocates these emissions. The ETS emissions target and ETS emissions are thus beyond the control of the Irish government. Additional emission reduction in the ETS sector in Ireland would be compensated, tonne for tonne, by additional emissions elsewhere in the European Union (Tol 2007). Therefore, the additional emission reductions foreseen in the draft bill over and above Ireland’s EU obligations will fall entirely on the non-ETS sector if they are to have any impact on overall EU (and global) emissions.

Figure 1 illustrates this. The top panel shows ETS emissions according to the Low Growth scenario (Bergin et al. 2010; Devitt et al. 2010), which assumes modest economic growth and a rising carbon price. In this scenario, Ireland would be ahead of target for most of the coming decade, and roughly on target in 2020. That is, Irish companies would export carbon dioxide emission permits in the period 2011-2018, and the emission reduction targets are met domestically in 2019 and 2020.<sup>9</sup>

The bottom panel of Figure 1 depicts non-ETS emissions according to the Low Growth scenario. Figure 1 also shows the EU target and the government target. The Low Growth scenario assumes that a carbon tax will be levied on all carbon dioxide emissions – at present, coal and peat for heating are exempted.<sup>10</sup> The Low Growth scenario also assumes a mandated blending of biofuels with petrol and diesel. As a result, greenhouse gas emissions in the Low Growth scenario are roughly stationary – and hence in excess of the EU targets which call for falling emissions – and in excess of the target in the draft bill too.

In the Low Growth scenario, non-ETS emissions in 2020 would be 44.5 million tonnes of carbon dioxide equivalent. Agriculture would contribute 41%, transport 29%, households 18%, services 9%, industry 8%, and land use changes -6%. The EU target is 37.3 million tonnes,<sup>11</sup> the target in the draft bill is 30.6 million tonnes of carbon dioxide equivalent. The draft bill thus calls for a 25% emission reduction from baseline in the non-ETS sectors. A substantial part of that would have to come from agriculture, transport and households.

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<sup>9</sup> Alternatively, Irish companies may bank permits if they expect a sharp price increase after 2020.

<sup>10</sup> While the carbon tax applies to most fossil fuels, the application of the tax to coal and peat is subject to a Commencement Order which as yet has not been made.

<sup>11</sup> Note that these numbers are based on the ESRI Environmental Accounts, which have a slightly different split between ETS and non-ETS than the official emission estimate.

Between 2010 and 2020, technology will improve but not change drastically. Equipment that is being used today will still be used 10 years from now, and there is only a limited scope for energy efficiency improvement by retrofit. A rapid expansion of public transport would be hard to finance, while affordable and environmentally-friendly biofuels are still only in the research phase. Emissions per head of cattle can be reduced only slightly, so large emission reductions imply a reduction in the herd size. It is therefore hard to see how the 2020 target can be met without draconian measures. Unfortunately, the draft bill, the explanatory memorandum, and the Regulatory Impact Analysis are silent on this.

Furthermore, as Ireland struggles to recover from one of the worst recessions in the EU, it is not clear why it wishes to introduce additional policies which, according to the Regulatory Impact Analysis of the draft bill, “could result in short-term competitive disadvantage relative to other countries” (paragraph 4.2.7 (b)).

### *3.4. Options for emission reduction*

What are the options for non-ETS emission reduction. Let us first consider transport. Transport emissions doubled between 1990 and 2000, and another 20% was added between 2000 and 2010. According to the Low Growth scenario, transport emissions would be roughly the same in 2020 as they were in 2010. This is primarily because of the reform of the motor tax and vehicle registration tax in favour of diesel cars, and the mandatory blending of biofuels. According to the draft bill, transport emissions should fall. If the effort is equally shared between sectors, 2020 emissions should be 20% lower than what they otherwise would have been.

How can this be achieved? If the mandatory biofuel blend is increased from 3% to 10% (in energy terms), emissions fall by 7%. (Note that biofuels do not necessarily reduce actual greenhouse emissions, in contrast to the agreed accounting standards.) If 10% of cars are all-electric, emissions falls by 2%. (This is small because electric vehicles appeal primarily to urban households with two cars.) 60% of commutes by car are less than 10 km long. If half would cycle to work instead, emissions fall by 7%. If the sale of 2 litre cars is banned as of 2012, emissions fall by 2%. These four measures together reduce emissions by 18%, still 2% short of the target.

Emissions from home heating fell by 13% between 1990 and 2000 and rose by 26% between 2000 and 2010. According to the Low Growth scenario, emissions will increase by 3% between 2010 and 2020. Growth would be minimal over the next decade primarily because of improved insulation of houses. Energy use per household is expected to fall by 0.9% per year, without affecting comfort levels. Let us again assume that the target is an emission reduction of 20%.

If the rate of energy efficiency improvement is doubled from the assumed 0.9% per year to 1.8% per year, 2020 emissions would fall by 9%. If all peat heaters are replaced by biomass heaters, emissions would fall by a further 8%. If all coal heaters are replaced by biomass heaters, emissions would fall by another 5%. In total, emissions are cut by 20%.

Utley and Shorrocks (2008) review the literature on insulation and find that a potential energy saving of 30% is common. However, households may use this to either reduce their energy bill or to increase the comfort level in their homes. Sorrell et al. (2009) survey the literature on this rebound effect and argue that only 80% of the potential energy saving is realised. We therefore assume that insulation reduces energy use by 24%. If the rate of energy efficiency improvement

doubles, energy use would fall by 8%. That is, every other house in Ireland would need to be insulated, a total of 540,000 houses or 54,000 houses per year.

The Home Energy Saving Scheme gave 110,000 grants in 2009 and 2010 for energy efficiency improvements, 65% of which were for insulation. This is 36,000 houses per year. The Homes Energy Saving Scheme would need to be scaled up by a factor 1.5 in order to meet the target.

According to the latest Household Budget Survey, some 15% of households use solid fuels as their primary source of heating. That is 250,000 coal and peat heaters that would need to be replaced over a period of 10 years, or 25,000 per year. The Greener Homes Scheme subsidises the replacement of heating systems. Between 2006 and 2010, 31,500 grants were given, or 6,300 per year. 2008 was the best year, with almost 10,000 grants. Only 20% of the grants were for biomass; 60% were for solar (that is, supplementary heating and electricity) and 20% for heat pumps (supplementary heating). The Greener Homes Scheme would need to be scaled up by a factor 4 and its biomass component by a factor 20 in order to meet the target.

Between 1990 and 2010, emissions from agriculture fell gradually. According to the Low Growth scenario, this trend continues to 2020. What would it take to reduce emissions by 20% from baseline?

Beef cattle (51% of total methane emissions from agriculture) and dairy cows (23%) are the main sources of emissions. Figure 3 compares 2008 methane emissions per head in Ireland to figures from selected other countries. While Irish dairy cows are among the best performers, Irish beef cattle do less well. If Irish dairy cows would emit as little as British cows, methane emissions from enteric fermentation would fall by 1.5%. If Irish beef cattle would emit as little as Danish cattle, emissions would fall by 27%. In the Low Growth scenario, the dairy herd increases by 13% between 2008 and 2020 while the beef herd shrinks by 7%. Methane emissions therefore would fall by 14%, and total greenhouse gas emissions from agriculture by 8.3%.<sup>12</sup>

Similarly, manure from dairy cows is well-managed compared to other countries – cows in France emit 12% less per head than cows in Ireland but cows in other comparable countries emit more – but manure from beef cattle is less well-managed – beef cattle in Ireland emit almost three times as much as per head as cattle in the United Kingdom. If manure management is brought to the current average practice in the best-performing comparable countries (France for dairy, UK for beef), methane emissions would fall by 6.8%. Total greenhouse gas emissions would fall by 4.1%.

Improved enteric fermentation and manure management together would reduce greenhouse gas emissions from agriculture by 12%. A 16% reduction<sup>13</sup> in the size of the herd would bring total emission reduction to the target of -20%.

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<sup>12</sup> Note that this, optimistically, assumes that emissions of nitrous oxide would not be affected. If we instead assume that nitrous oxide emissions from manure in Ireland would be the same as in Denmark (diary) and the UK (beef), then N<sub>2</sub>O emissions would increase by 15%. Total greenhouse gas emissions would fall by 7%.

<sup>13</sup> 20% if we correct for nitrous oxide as in footnote 11.

## **4. The choice of targets for 2030 and 2050**

### *4.1. The targets for 2030 and 2050*

Figure 2 depicts greenhouse gas emissions according to the Low Growth scenario, extrapolated to 2060. The extrapolation assumes that economic development, technological progress, and climate policy will continue from 2025 to 2060 as they are expected to do between 2010 and 2025. Figure 2 also shows the targets under the Kyoto Protocol for 2008-2012, the EU target for 2020 (linearly extrapolated to 2060) and the 2020, 2030 and 2050 targets in the draft bill (linearly extrapolated to 2060).

The long-term targets in the draft bill put Ireland on a path to zero greenhouse gas emissions in 2060. Stabilization of greenhouse gas concentrations in the atmosphere, the ultimate goal of the UNFCCC, requires that carbon dioxide emissions are zero (Maier-Reimer and Hasselmann 1987). This is not the case for the other greenhouse gases, however. Methane in particular has only a short life-time in the atmosphere. Positive methane emissions are therefore consistent with a stable concentration. There is no reason to reduce methane emissions to zero.

The draft bill specifies three emissions target, one for 2020, one for 2030, and one for 2050. While it may be politically wise to have interim targets, only the ultimate targets matters from an environmental perspective. Economically, interim targets increase the costs of climate policy (Wigley et al. 1996).

### *4.2. The feasibility of the 2030 and 2050 targets*

The proposed targets for 2030 and 2050 are ambitious. Until 2020, the aim is to reduce emissions by 2.5% per year. Between 2020 and 2030, emissions should fall by 4.2% per year. Between 2030 and 2050, emissions should fall by 5.3% per year. These rates of emission reduction are unprecedented in times of economic growth. Economic models are severely strained by such analyses, and the majority of analyses conclude that such targets are infeasible (Clarke et al. 2009). It is therefore hard to estimate the costs of targets in the draft bill (Tavoni and Tol 2010).

## **5. Policy measures**

The draft bill specifies targets for greenhouse gas emission reduction, but it is silent on policy measures to achieve such targets and on the criteria such policy measures should meet. As the targets are stringent, policies must be far-reaching and well-designed. To date, Irish climate policy has been timid, and policy design flaws had relatively large but absolutely small impacts (Scott and McCarthy 2008). The draft bill would lead to a step change in the ambitions of climate policy, but does not provide for the means to reach the targets nor for the procedures to ensure that the targets would be met in a manner that is as cheap and equitable as possible. This is a serious omission.

Current regulation of greenhouse gas emissions is suboptimal. There are tradable permits for about one-third of emissions. However, there are also price guarantees for renewable electricity, differentiated by source for no apparent reason, and implicit capital subsidies in grid reinforcement and interconnect. At the same time, priority dispatch for peat stations is an implicit subsidy to increase emissions. Another third of emissions is regulated through a range of instruments. Some fuels for home heating are subject to a carbon tax, but coal and peat are

exempted even though emissions are highest for these fuels. There are subsidies for renewable heating, differentiated by energy source rather than by emission reduction, and subsidies for house insulation, differentiated by household type rather than by emission reduction. Transport energy use is regulated by a carbon tax, excise duties which are differentiated in an ad hoc way, motor and vehicle registration taxes which differentiate for potential rather than actual emissions, and an (EU-wide) bilinear tax on fuel inefficiency. One third of emissions is unregulated. As a result, emission reduction is substantially more expensive than needed. As emission reduction is regressive (Callan et al. 2009; Verde and Tol 2009), the excess costs fall disproportionately on poorer households.

The current hotchpotch of regulation may not have large and negative implications<sup>14</sup> as, because of the economic recession, the emission reduction targets for 2008-2012 under the Kyoto Protocol are very close to what emissions would have been without regulation (Devitt et al. 2010). The proposed emission targets for 2020, 2030, and 2050, on the other hand, would require substantial policy intervention.

The draft bill should specify which policy instruments will be used to meet the targets, the circumstances under which those instruments may be deployed, the procedures, standards and criteria for ex ante impact assessment and ex post evaluation, and the processes to avoid multiple and counterproductive regulation.

The Regulatory Impact Analysis argues that “it is appropriate and necessary therefore for the Government to look beyond the immediate short-term situation, and to seek to bring both clarity and certainty to Ireland’s response to climate change in the context of an inevitable transition to a low-carbon future” (paragraph 2.1.3). However, for this to be the case the targets and associated policy measures need to be carefully specified so that they are credible. The burden of the argument above is that these conditions are not met. Thus firms and others are unlikely to make plans based on these targets unless compelled to do so.

## **6. The National Climate Change Expert Advisory Body**

The draft bill proposes to create a National Climate Change Expert Advisory Body (“the Expert Advisory Body”) to provide extensive advice to the Minister and the Government on the implementation of the draft bill. This will be an onerous and important task, particularly if the shortcomings identified above are not rectified prior to the passage of the draft bill. We therefore welcome the assurance given in the Regulatory Impact Analysis that the Expert Advisory Body “will be statutorily independent, with no Departmental control over its output.” (paragraph 4.2.7 (c)). However, an examination of the draft bill suggests that the Expert Advisory Body needs to be strengthened before it can be considered independent.

Independence has been defined in relation to regulatory agencies and these same characteristics are also relevant, we believe, in relation to the provision expert advice. These characteristics include: a statement of independence; appointment by the Minister of the most senior posts on merit after an independent selection process, with very narrow grounds for dismissal (e.g., ill health, stated misbehaviour) and with appointment for a sufficiently long period to ensure

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<sup>14</sup> Unfortunately, there is no ex-post estimate of the actual impact on emissions and costs of past and current climate policy.



independence; secure funding; and open, transparent impartial decision-making, with reasoned published decisions. It is not clear any of these conditions are met in full.

There is no statement in the draft bill that the Expert Advisory Body is independent. The appointment process is entirely in the hands of the Minister with no competition mandated for the Expert Advisory Body chairman and ordinary member positions or an independent appointments process. In terms of appointments to the Expert Advisory Body the Minister “shall have regard to the range of qualifications, expertise and experience necessary” (Section 7(12)) but no attempt is made to specify that expertise so that comment can be made prior to the draft bill becoming law. In our view such expertise should include: climate science, economics, law, agronomy, regulation, and engineering.

In terms of funding the explanatory memorandum states that “There may be staff resourcing implications arising from [...] the establishment of the Expert Advisory Body, but these will be met from within existing staff complements.” It is envisaged that the Environmental Protection Agency (“EPA”) will provide technical support to the Expert Advisory Body, under Section 7(15) of the draft bill. This is a logical choice. However, while the EPA is competent if not very competent in certain disciplines, it has lacunae in other relevant areas. A mechanism should be put in place through which the EPA can and must call on other state agencies and other expertise.

While the grounds for dismissal of the chairman include illness and stated misbehaviour, there is also reference in Section 7 (9)) to removal where it “appears to the Government to be necessary for the effective performance by the Expert Advisory Body of its functions”, a somewhat vague formulation. It would therefore be useful if the draft bill included a requirement that the Minister issue a statement in writing of the reasons for the removal of the chairman. Members of the Expert Advisory Body are to be appointed for quite short periods, up to three years with one renewal possible. Five years is preferable.

Under the draft bill the Expert Advisory Body is to prepare an Annual Report which shall cover a wide array of issues such as “recommendations as to the most cost effective ways of achieving the emissions targets” and others mentioned in Section 9 (2)). However, in terms of the publication of the Annual Report the draft bill states in Section 9(3) that the “Expert Advisory Body shall, subject to the consent of the Government, publish an annual report as the Government determines.” It is not clear why the Government consent is required and we suggest that it is preferable that it is stated simply that the Expert Advisory Body publish its Annual Report as it sees fit.

The Expert Advisory Body may also undertake periodic reviews, either on its own initiative or at the behest of the Minister or in some cases on a mandatory basis, under Section 10 of the draft bill. However, in terms of the publication of these periodic reviews the draft bill states that the “Expert Advisory Body shall, subject to the consent of the Government, publish a report ... in such a manner as the Government determines” (Section 10(7)). However, again it is not clear why these qualifications are present which may be used to restrict, prevent and/or delay the publication of such periodic reviews.

In sum, the draft bill needs to considerably strengthen the independence of the Expert Advisory Body in order to ensure that it does its work effectively and efficiently such that not only the Minister but elected representatives have a clear and unbiased picture of the implementation of the draft bill in a cost effective manner that limits any negative effects on the growth and development of the Irish economy.

## **7. Regulatory Impact Analysis**

The Regulatory Impact Analysis (“RIA”) disappoints. The RIA is qualitative and unreferenced. It is a collection of assertions.

The RIA considers three options: do nothing; enactment of primary legislation; and carbon pricing. The first, “do nothing”, is not an option: Ireland has legally binding, international obligations to reduce emissions. It would have been more appropriate to consider existing obligations as the default option against which to compare alternatives. Options 2 and 3 are of a different order. Enactment of primary legislation would establish targets for emission reduction (Option 2), but policy instruments such as carbon pricing (Option 3) are needed to meet such targets.

The RIA argues that, as a result of the draft bill, “[T]here may be a slight negative impact on national competitiveness in the short term – though long term impact expected to be positive “ (p. 13). This claim is neither quantified nor supported. The RIA also argues that carbon pricing is “[L]ikely to have a significant impact on national competitiveness “(p. 13). It is well-established that emission reduction requires a switch of more expensive energy services and that carbon pricing is the cheapest way to meet an emission reduction target. It is unclear why the RIA argues that raising the price of energy services through carbon pricing would negatively affect competitiveness while raising the price of energy services through other means would have no such effect. Equally inexplicably, the RIA argues the same with regard to impacts on the socially excluded and vulnerable group (p. 13).

The RIA argues that either carbon pricing or a climate bill would have “[N]o significant policy change in an economic market including consumer and competition impacts”(p. 13). Again, this claim is not supported by any evidence. Indeed, competition impacts appear in the summary table of the RIA but not in the main text. It is hard to imagine that implicit or explicit changes to the relative price of energy, to the relative prices of alternative energy sources, and to the capital- and labour-intensity of the energy sector would not have any effect on competition. For instance, large installations that emit carbon dioxide are regulated under the EU ETS while small installations are regulated nationally. Because the burden of additional emission reduction will fall disproportionately on the non-ETS, the marginal costs of emission reduction will be much higher for small firms than for large firms in the same sector. This gives a competitive advantage to large firms in energy-intensive industries.

## **8. Summary and conclusion**

In sum, we are grateful for the opportunity to comment on the draft Climate Change Response Bill 2010. There are a few ambiguous statements in the draft bill that will need to be clarified in the next version, particularly with regard to the emissions target for 2020 and the definition of carbon sinks. A unilateral adoption of a 30% emission reduction target for 2020, as proposed in the draft bill, would be problematic, as EU legislation would oblige Ireland to bridge the gap between the EU target (-20%) and the Irish target (-30%) through emission reduction in the domestic non-ETS sectors (mostly agriculture, households, small and medium-sized enterprises, and transport). The proposed targets for 2030 and 2050 are extraordinarily ambitious. The draft bill omits to introduce an appropriate framework for policy measures to meet the proposed targets. The establishment of a National Climate Change Expert Advisory Body is a welcome

proposal but the climate bill should guarantee that the people on the body are indeed experts and that the body is independent. The Regulatory Impact Analysis adds little to our understanding of the impact of the proposed climate bill.

We recommend the following changes to the Climate Change Response Bill 2010:

- Adopt the EU target of a 20% emission reduction by 2020.
- After 2020, the target should be to intensify climate policy such that the (nominal) marginal abatement costs of emission reduction increases with the rate of discount (i.e., the nominal interest rate) until carbon dioxide emissions are zero.
- Create a framework for policy interventions of greenhouse gas emissions, with single regulation and equalization of marginal abatement costs as important criteria.
- Guarantee that the National Climate Change Expert Advisory Body is independent and has the required expertise and secure funding.

Furthermore, we recommend that the impacts of the proposed draft bill be assessed before the bill is introduced.

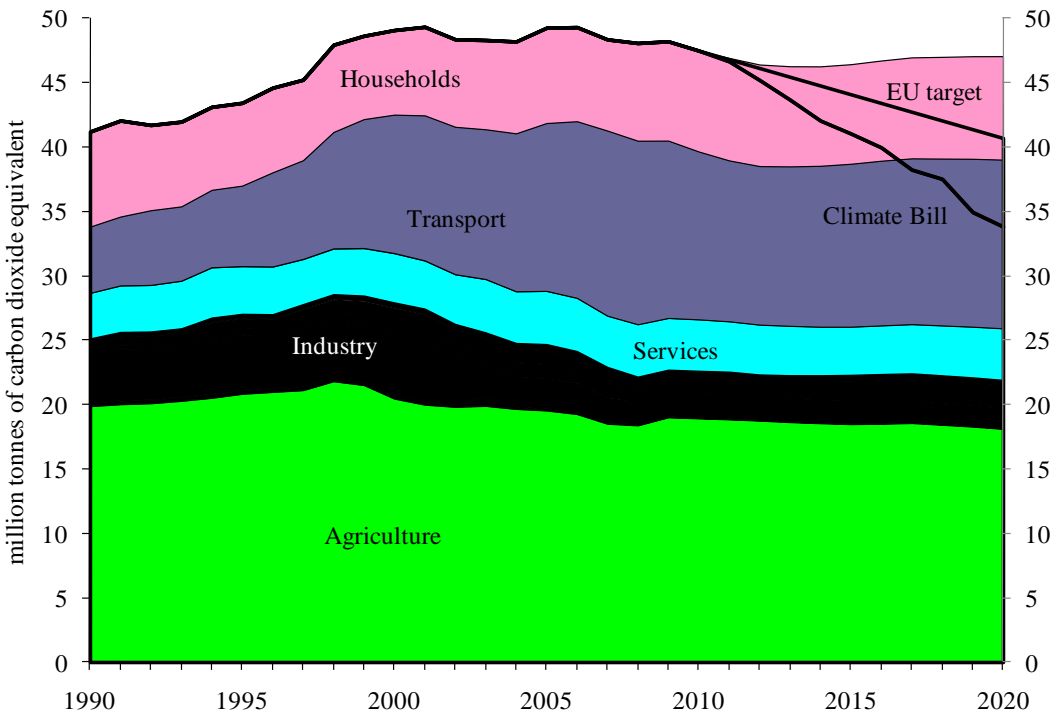
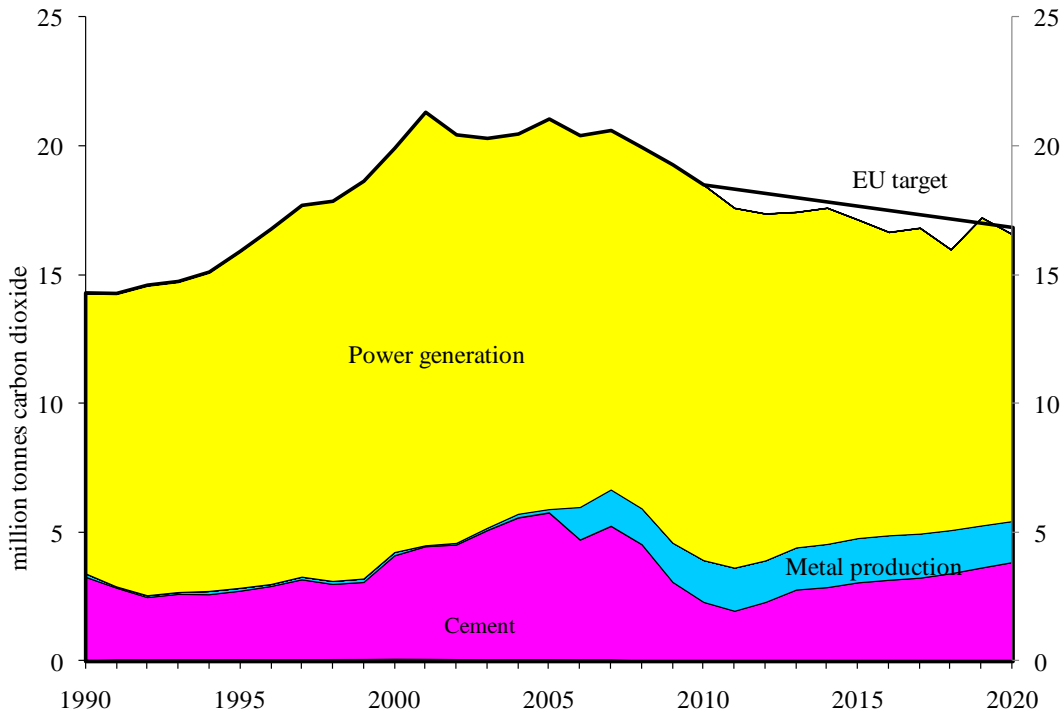


Figure 1. Greenhouse gas emission per sector as observed (1990-2008) and as projected (2009-2020) for emissions regulated under the EU Emissions Trading System (top panel) and other emissions (bottom panel); emission targets are shown too. After (Devitt et al. 2010).

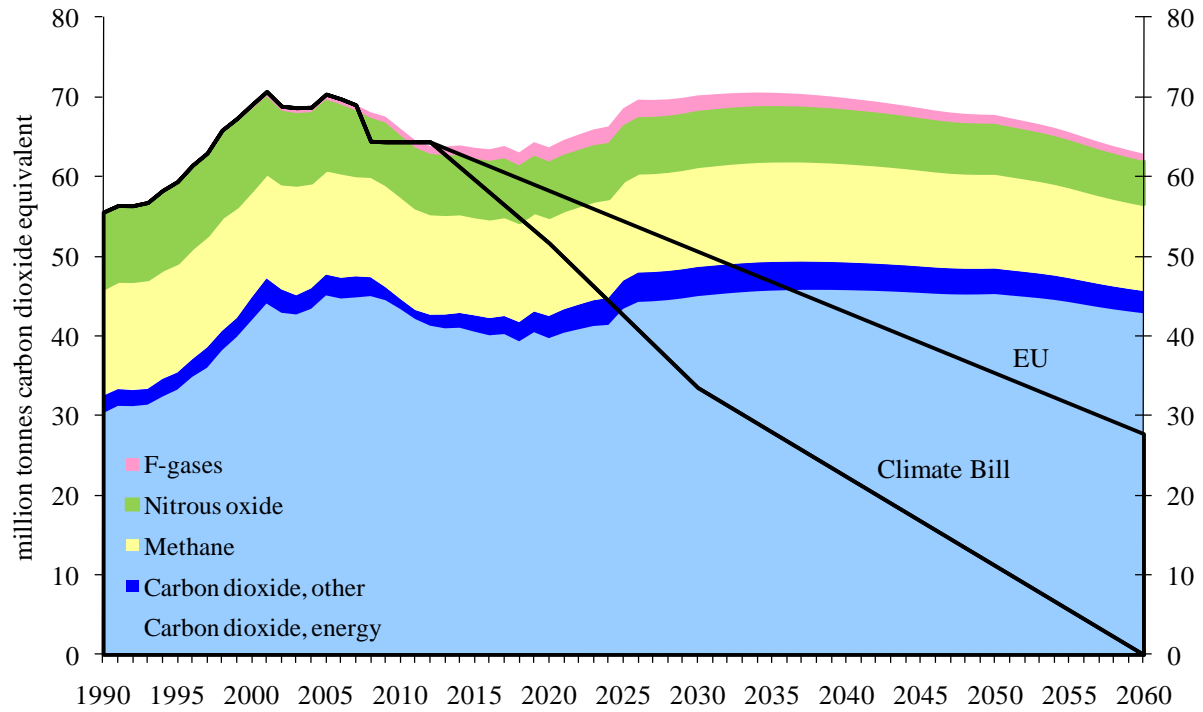


Figure 2. Greenhouse gas emission per gas as observed (1990-2008) and as projected (2009-2060); emission targets are shown too.

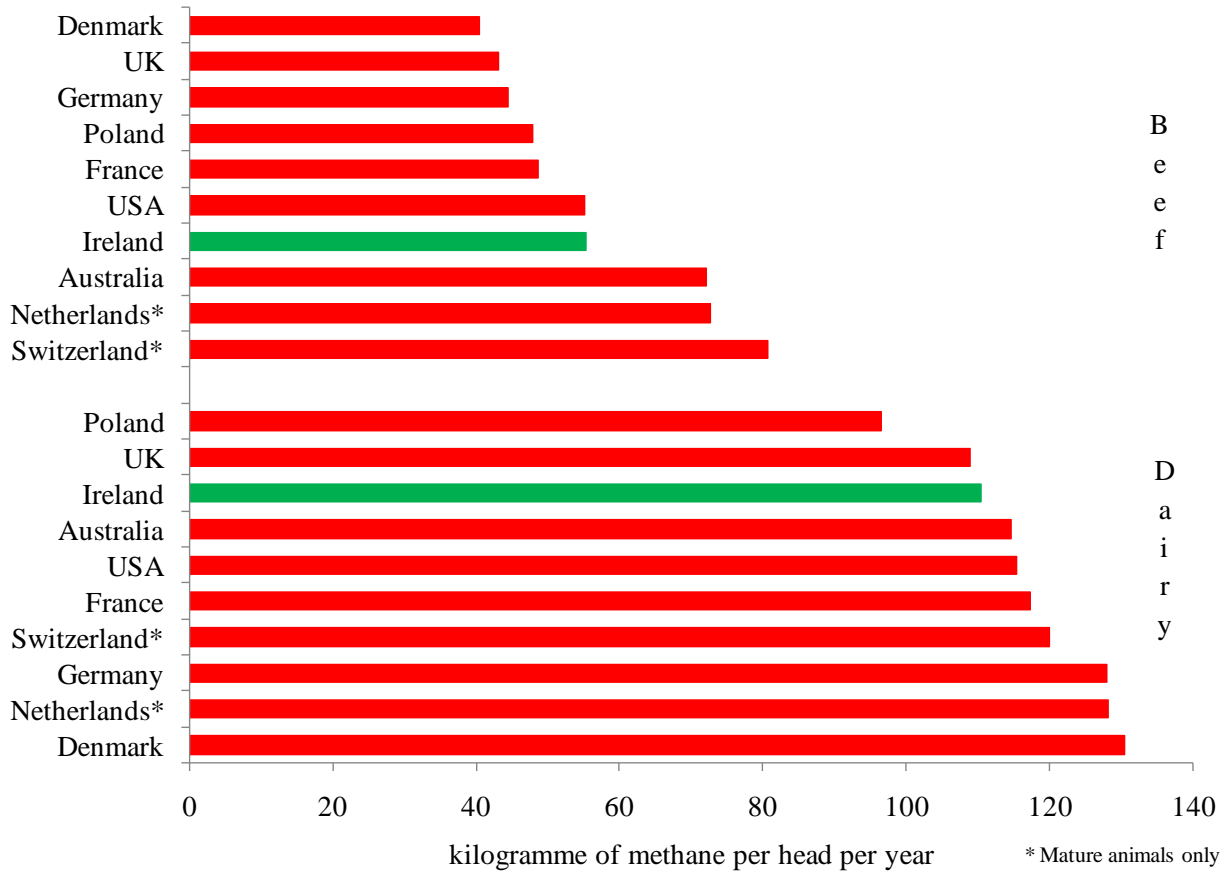


Figure 3. Average methane emissions per head of cattle in 2008. Source: Secretariat to the United Nations Framework Convention on Climate Change.

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