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Assessment of climate change policies in the context of the European Semester

Country Report: Ireland



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The report provides an overview of current emission trends and progress towards targets as well as policy developments that took place over the period from February 2013 to November 2013.

Please feel free to provide any comments or suggestions to the authors through the contacts listed above.

Short summary

Background: Ireland has several policies related to renewable energies and energy efficiency already in place. The 2nd National Energy Efficiency Plan (NEEAP) outlines energy efficiency measures to 2020. Steps have also been taken to transition to more sustainable transport and waste regimes. Ireland's agriculture sector remains a major source of emissions.

Non-ETS emission reduction target: Ireland has a target of -20% from 2005 levels for 2020 and made reductions of 11% between 2005 and 2011 (better than the EU average). However, according to the latest national projections submitted to the Commission and when existing measures are taken into account, the target is expected to be missed significantly: -2% in 2020 (18 percentage points off target), as emissions will grow again.

Key indicators 2011:

GHG emissions	IE	EU
ESD EU 2020 GHG target (comp. 2005)	-20%	
ESD GHG emissions in 2011 (comp.2005)	-11%	-9%
Total GHG emissions 2012 (comp.2005)	-16%	-12%
GHG emissions/capita (tCO ₂ eq)	12.6	9.0

→ **40% higher** per capita emissions than EU average

GHG emissions per sector	IE	EU
Energy/power industry sector	21%	33%
Transport	20%	20%
Industry (incl. industrial processes)	10%	20%
Agriculture (incl. forestry & fishery)	32%	12%
Residential & Commercial	15%	12%
Waste & others	2%	3%

→ **Agriculture** followed by Energy/power industry sector, and Transport

Energy	IE	EU
EU 2020 RES target	+16%	
Primary energy consumption/capita (toe)	3.0	3.4
Energy intensity (kgoe/1000 €)	83	144
Energy to trade balance (% of GDP)	-3.6%	-3.2%

→ **10% lower** per capita consumption, **43% lower** energy intensity, contribution of energy to trade balance above EU average

Taxes	IE	EU
Share of environmental taxes (% of GDP)	2.6%	2.4%
Implicit tax rate on energy (€/toe)	171	184

→ **Higher** share of environmental taxes and **7% lower** implicit tax rate on energy than EU average.

Key policy development in 2013: The feed-in tariff schemes (REFIT 1, 2, 3) constitute Ireland's main financial mechanism for the support of renewable energy sources and amendments to all schemes were made in 2013. Several developments in relation to energy efficiency took place, with the second National Energy Efficiency Action Plan (NEEAP 2) that sets out to realize 20% energy savings by 2020, the establishment of a Energy Efficiency Fund, and the extension of the "Better Energy: the National Upgrade Programme," which oversees the implementation of energy efficiency standards in buildings. In relation to environmental taxation the Natural Gas Carbon Tax was amended in 2013 to include solid fuels such as peat and coal. Progress was also evident in the waste sector in which new regulations on the separation and sorting of household food waste were introduced.

Key challenges: Energy dependence and the diversification of the energy mix remain a key challenge in Ireland: the country is among the five most vulnerable countries in the EU in terms of security of supply (Ecfm 2013) mainly due to high imports of oil and natural gas as well as of a low contribution from domestic renewable energy sources. In addition, significant emissions from agriculture (which accounts for 32% of emissions compared to the EU average of 12%) indicate a need for the introduction of GHG mitigation and efficiency measures specific to this sector, especially since the national "Food Harvest 2020" strategy foresees the growth of agricultural production and output.

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I Background on climate and energy policies

In the period from February to November 2013 there was progress regarding several policy developments in relation to climate change and specifically energy efficiency, renewable energy, transport and waste.

Energy independence and diversification remains an issue in Ireland. In 2011, Ireland imported 88% of its energy from abroad incurring costs estimated at € 6 billion per year (SEAI 2012a). The main consumer is the transport sector that makes up 42% of final energy consumption in Ireland, amounting to twice as much as industry. According to the Sustainable Energy Authority of Ireland, the key policy priorities in the energy sector are improved energy efficiency and the deployment of low-carbon energy sources (including RES technologies).

The National Climate Policy (NCP) originally published in January 2012, is still being developed. Climate change legislation was articulated in December 2013 and will give indicators relevant to the EU 2020 targets (Department of the Environment, Community and Local Government 2012a). The NCP is expected to increase energy efficiency measures in the public sector with: alternative financing options, such as pay as you save (PAYS) measures for increasing energy efficiency in the non-ETS area; increased biofuel obligations, an agriculture action program and long-term greening of the tax system (National Economic and Social Council 2012). Such measures were outlined in the 2nd NEEAP and the strategy paper, "Towards a New National Climate Policy". In addition, sectoral action plans for emission reductions (2050 Low Carbon Roadmaps) in sectors with significant emissions (agricultural, built environment, transport and electricity) are expected to be introduced. All Sectoral Roadmaps are expected to be incorporated in a National Low Carbon Roadmap in 2014 (Department for Tourism, Transport and Sport, 2013).

Several policy developments in the transport and waste sectors took place in 2013. The Non-Use of Motor Vehicles Act establishes a simplified scheme that aims at ensuring better compliance with vehicle taxation. In the waste sector, supporting measures to improve household segregation of waste were introduced in the 2013 Household Food Waste and Bio-Waste Regulations (Department of the Environment, Community and Local Government, 2013a; Department of the Environment, Community and Local Government, 2013c).

Ireland has continued to emphasize green growth and green jobs in the last several years, particularly in the area of renewable energy. The "Better Energy: The National Upgrade" programme that introduced energy efficiency measures in households has been particularly successful in job creation. In 2011, employment was boosted by home insulation upgrades which supported an additional 5,800 jobs and in 2012 some 4,000 green jobs (SEAI 2011, 2013b). The success of the Programme has resulted in its continuation in 2014 (Department of Communications, Energy and Natural Resources 2013f)

2 GHG projections

Background information

In 2011, Ireland emitted 57.5 Mt CO₂eq (UNFCCC inventory 2011) with an increase between 1990 and 2010 of approximately 11%, mainly driven by the rapid expansion of the economy between 1990 and 2006. From 2010 to 2011, emissions declined by about 6%. Agriculture accounts for the biggest share of emissions at 32% of total GHG emissions, which is three times above the EU average, despite that emissions from agriculture decreased by 10% between 1990 and 2011 due to improved production efficiency and reduced use of nitrogen fertilizer. Other important emission sources are energy supply where emissions increased by some 6% over the same period, with a peak in the mid-2000s linked to economic growth. The most significant increase in emissions between 1990 and 2011 was observed in the transport sector, where emissions more than doubled. This is the result of the increased number of passenger cars and light-duty vehicles, as well as “fuel tourism” from the United Kingdom. The industrial sector accounts for 3% of total emissions, and emissions decreased from 1990 to 2011 by 44% (UNFCCC inventory 2011, EEA 2012, UNFCCC 2012). From 2011 to 2012, GHG emissions are expected to increase again as emissions are expected to rise in all main sectors (EEA 2013c).

Progress on GHG target

There are two sets of targets to evaluate: 1) the Kyoto Protocol targets for the period 2008-12 (which has just ended) and 2) the 2020 targets for emissions not covered by the EU ETS.

Under the Kyoto-Protocol the emission reduction target for the period 2008-2012 has been set to increase 13 % based on 1990 for CO₂, CH₄ and N₂O and on 1995 for F-gases. An evaluation of the latest complete set of greenhouse gas data (for the year 2011; there is only preliminary data for 2012) shows that emissions have increased by 3.4% from the Kyoto base year to 2011 (EEA 2013a). Therefore, Ireland is on track to meeting its Kyoto target.

By 2020, Ireland needs to reduce its emissions not covered by the EU ETS by 20% compared to 2005, according to the Effort Sharing Decision (ESD) ⁽¹⁾. The latest data for 2012 suggests that Ireland is on track at present to meet the Annual Emissions Allocation ⁽²⁾ for the year 2013: non-ETS emissions were 8 percentage points (of the 2005 base year) below that allocation. However, national projections (EEA 2013b) show that the country will fail to meet its 2020 target with existing measures by 18 percentage points and also with additional measures by 11 percentage points (see Table 1).

¹Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020.

²Commission decision of 26 March 2013 on determining Member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council. Online available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:090:0106:0110:EN:PDF>

Table I: GHG emission developments, ESD-targets and projections (in Mt CO₂eq)

	1990	2005	2010	2011	2012*	ESD target**		2020 Projections***	
						2013	2020	WEM	WAM
Total	55.2	69.5	61.5	57.5	58.3				
Non-ETS (% from 2005)		46.9	44.1	41.7	41.4 -12%	45.2 -4%	37.2 -20%	45 -2%	42 -9%
Energy supply (% share of total)	11.2 20%	15.8 23%	13.3 22%	11.9 21%					
Energy use (w/o transport) (% share of total)	14.5 26%	16.8 24%	15.6 25%	13.7 24%					
Transport (% share of total)	5.1 9%	13.1 19%	11.6 19%	11.3 20%					
Industrial processes (% share of total)	3.2 6%	3.3 5%	1.9 3%	1.8 3%					
Agriculture (% share of total)	19.6 36%	18.9 27%	18.0 29%	17.7 31%					

Source: UNFCCC inventories; EEA (2013b); Calculations provided by the EEA and own calculations.

* proxies for 2012 emissions summarised by EEA (2013b)

** The ESD target for 2013 and for 2020 refer to different scopes of the ETS: the 2013 target is compared with 2012 data and is therefore consistent with the scope of the ETS from 2008-2012; the 2020 target is compared to 2020 projections and is therefore consistent with the adjusted scope of the ETS from 2013-2020. 2005 non-ETS emissions for the scope of the ETS from 2013-2020 amounted to 46Mt CO₂eq.

***Projections with existing measures (WEM) or with additional measures (WAM).

Legend for colour coding: green = target is being (over)achieved; orange = not on track to meet the target

Total greenhouse gas emissions (GHG) and shares of GHG do not include emissions and removals from LULUCF (carbon sinks) and emissions from international aviation and international maritime transport.

National projections of GHG emissions up to 2020, summarised by the EEA, need to be prepared by the Member States in accordance with the EU Monitoring Mechanism ⁽³⁾ every two years, and the latest submission was in 2013. The projections need to be prepared reflecting a scenario that estimates emissions reductions in line with policies and measures that have already been implemented (with existing measures, WEM), and an additional scenario that reflects developments with measures and policies that are in the planning phase (with additional measures, WAM) may also be submitted.

In the following two tables, these measures have been summarised with a focus on national measures and those EU instruments expected to reduce emissions the most. Please note that the table includes also measures that address GHG emissions covered under the ETS such as measures reducing emissions from electricity generation (e.g. feed-in tariffs). An update on the status of the policies and measures is included in order to assess the validity of the scenarios.

³ Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol.

Table 2: Existing and additional measures as stated in the 2013 GHG projections

Existing Measures (only important national measures)		Status of policy in November 2013
Energy	Renewable Energy Feed-in Tariff scheme (REFIT)	Implemented. In 2012, two new schemes (REFIT 2 and REFIT 3) received state aid clearance and were open for new applications. REFIT 2 covers onshore wind, hydro, and biomass landfill gas, whereas REFIT 3 covers the biomass categories of anaerobic digestion, biomass CHP, biomass combustion, and biomass co-firing. Amendments to all schemes have been introduced in 2013.
	The Greener Homes Scheme aims to increase the use of renewable energy and sustainable energy technologies in Irish homes.	Closed since May 2011, when the national upgrade programme "Better Energy" was launched. The solar heating part of the Greener Homes Scheme was transferred to the Better Energy Homes Scheme.
	ReHeat: Provides financial assistance for boilers fuelled by wood chips and wood pellets, solar thermal collectors, and heat pumps	On hold due to a lack of budget resources.
	CHP deployment grant scheme (30% on equipment purchase and 40% for feasibility studies)	On hold due to a lack of budget resources.
Energy Efficiency	Building Regulations 2005 to improve the energy efficiency of new buildings	Implemented. In 2011, amendments of regulations were to promote the conservation of fuel and energy in dwellings.
	SEAI Large Industry Programme	Implemented. Since 2008, the Large Industry Energy Network (LIEN) was established and coordinated by the Sustainable Energy Authority of Ireland. It is basically a voluntary network that consists of companies with more than €1mio annual spend. To date, it has 140 member and 80 are members of the Energy Agreement Programme that foresees the implementation of Energy Management Standard EN 16001. Only in 2010, members avoided energy costs that amounted to €45million.
	Warmer Homes Scheme to improve the energy efficiency and comfort conditions of homes occupied by low-income household	Implemented. For elderly and vulnerable persons, the following measures are available at no cost to the household: attic insulation, draught proofing, lagging jackets, low energy light bulbs, cavity wall insulation and energy advising.
	The Home Energy Saving (HES) scheme	Implemented. The Scheme provides assistance to homeowners who are interested in improving the energy efficiency of their home in order to reduce energy use and costs as well as greenhouse gas emissions
	Efficient Boiler standard	Implemented; Oil and gas fired boilers installed as replacements in existing dwellings must meet a minimum seasonal efficiency of 86%, where practicable (part of the revision of the Building Regulations Part L "Conservation of Fuel and Energy" adopted in December 2007).

	VRT/Motor Tax changes: Motor tax (annual circulation tax) and VRT linked to CO ₂ emissions for new passenger cars- Improved fuel economy for private vehicles	Implemented. Structures for both VRT and motor tax for vehicles taxed on the basis of CO ₂ emissions are revised. The two lowest tax bands are broken into six. There are now 11 tax bands instead of seven. The lowest band now applies only to cars with emissions between zero and 80g/km, carrying a VRT rate of 14%. For the rest of the cars that fall into tax bands A and B, the tax is increased between €10 and €55 a year from 1 January 2013, depending on the emissions level.
Transport	Biofuels Mineral Oil Tax Relief (MOTR) Schemes	Implemented. The National Oil Reserves Agency Act 2007 (Biofuel Obligation Rate) Order 2012 was signed in December 2012 with the aim of increasing the rate of biofuel mixing from 4% to 6% from 1 January 2013 onwards.
	Biofuel Obligation	Implemented. The Biofuels Obligation Scheme came into effect in 2010 and compelled fuel suppliers to include a certain percentage of biofuels in their annual fuel sales. The current percentage is 4% by volume per annum and will be gradually increased up to 6%.
Waste	Landfill Directive	Implemented. The Directive intends to minimize the hazardous consequences on human health by waste landfills. The Directive has set a stringent timetable regarding the reduction of biodegradable municipal waste until 2016.

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, May 2013.

Additional Measures (only important national measures)		Status of policy in November 2013
	Building Regulations 2011: 60% improvements on energy performance of non-residential buildings relevant to current building regulations.	Implemented.
	Better Energy (Retrofit public sector component): Support to increase in the scale and depth of energy efficiency investments in upgrading existing buildings and facilities.	Implemented in 2012 through the "Better Energy Workplaces".
Energy Efficiency	Retrofit (Better Energy Homes): Support to increase in the scale and depth of energy efficiency investments in upgrading existing residential buildings. It aims to include 1 million homes by 2020.	Implemented. Until now the Programme has financed 2,700 energy efficiency measures in 110,000 residences.
	Implementation of the public sector contribution to national energy efficiency target.	Implemented.
	ACA: tax incentive for companies paying corporation tax. The ACA allows companies to write off 100% of the purchase value of qualifying energy efficient equipment against their profit in the year of purchase.	Implemented.

	RES-H (industry sector)	As it is required that 12% of thermal energy requirements should come from RES until 2020, there is potential for further integration of RES_H in the industry sector. Ireland's second NEEAP includes measures for the deployment of RES in industry.
	Electric Vehicle Deployment: to ensure electric vehicles make up 10% of the transport fleet by 2020.	To be implemented. The scheme has not yet achieved the goal of 6,000 passenger vehicles by 2012, as there are still just about 200 electric vehicles on the roads in Ireland.
Transport	More sustainable public transport fleet: The objective of this measure is to radically improve the level, accessibility, and quality of rail and bus services throughout the country. Urban transport services involving bus, light rail, suburban rail, and metro will be improved.	To be implemented. Priority for the Minister for Transport, Tourism & Sport in 2013 is to determine the structure of the public service bus market, to secure funding of the CIE companies post-2014, and to reorganise Irish Rail until by of 2013.
Other non-ETS sectors	F-gas regulation: Contain, prevent, and thereby reduce emissions of F-gases.	Implemented.

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, May 2013.

As it was illustrated above, there are a number of measures in the WEM scenario that are already implemented; however, there are some measures that could not be realized due to budgetary constraints, making the realization of all projected emissions reductions under the WEM scenario more difficult. Regarding the WAM scenario, progress could be identified and some measures listed as additional are now implemented – these measures are in particular addressing non-ETS emissions. However, as even under the scenario with additional measures the 2020 target is not met, Ireland needs to improve its regulatory framework to realise further emission reductions in the non-ETS sectors up to 2020.

3 Evaluation of National Reform Programme 2013 (NRP)

In April of each year, Member States are required to prepare their National Reform Programmes (NRPs), which outline the country's progress regarding the targets of the EU 2020 Strategy. The NRPs describe the country's national targets under the Strategy and contain a description of how the country intends to meet these targets. For climate change and energy, three headline targets exist: 1) the reduction of GHG emissions, 2) the increase of renewable energy generation, and 3) an increase in energy efficiency ⁽⁴⁾.

⁴There are specific targets for all MS by 2020 for non-ETS GHG emission reductions (see section 2) as well as for the renewable energy share in the energy mix by 2020 (see section 4, renewable energies). Specific energy efficiency targets will be defined (or revised) by the MS until the end of April 2013 in line with the methodology laid out in Article 3 (3) of the Energy Efficiency Directive (Directive 2012/27/EU).

The NRP for Ireland focuses mainly on two sectors: renewable energy and energy efficiency. The NRP includes not only implemented policies but also expected policy measures. In addition, the topic of climate change is also addressed, as it includes the latest developments on the implementation of a new national climate policy and legislation.

In the following table, the main policies and measures as outlined in the NRP of April 2013 ⁽⁵⁾ have been summarised, and their current status (implemented, amended, abolished, or expired) is given, with specifics on latest developments.

Table 3: Main policies and measures as outlined in the NRP, April 2013

New national climate policy and legislation	
Status as stated in the NRP	Consultation ongoing.
Status as per Nov 2013	Should be implemented by mid-2014.
Description of policy or measure	From February to April 2012 consultation on climate policy and legislation took place. It was open to all stakeholders, including the general public. In addition, an interim and final policy analysis report were prepared and published by the Secretariat to the National Economic and Social Council (October 2012 the interim report and February 2013 the final Report). In February 2013, the outline of a Climate Action and Low Carbon Development Bill was released. The Bill is submitted for consideration to the Oireachtas Joint Committee on Environment and Culture, the Parliamentary Committee and relevant stakeholders.
2050 Low Carbon Roadmaps	
Status as stated in the NRP	Ongoing- Public consultation expected to start at the 4 th quarter of 2013.
Status as per Nov 2013	Ongoing.
Description of policy or measure	Waiting for the implementation of the national climate policy law, departments with responsibilities related to the transition of Ireland to a low carbon economy are requested to prepare their own individual roadmaps so as to be properly prepared to the implementation of the new climate change legislation. Energy/ built environment, transport and agriculture are the three most important sectors to which the sectoral roadmaps target and it is expected that those sectoral roadmaps will constitute the parts of a general 2050 low carbon roadmap.

⁵All NRPs are available at: http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index_en.htm

New financial Mechanism to promote RES	
Status as stated in the NRP	Not yet implemented- expected to start before the inauguration of the Target Market (2016)
Status as per Nov 2013	Not yet implemented.
Description of policy or measure	A new support scheme is planned to be implemented and it aims to take into consideration the structure of the target market, whose initiation is planned in 2016. Furthermore, the introduction of that support scheme aims at the revision/ reduction of the level of support for onshore wind projects.
REFIT 1/ REFIT 2/ REFIT 3	
Status as stated in the NRP	Implemented.
Status as per Nov 2013	Implemented.
Description of policy or measure	REFIT 1, 2 & 3 constitutes the main financial mechanism for the support of RES. With the introduction of REFIT 2&3 in 2012, it is estimated that the share of RES has been increased to 19.3% from 17.6% in 2011. Amendments to all REFIT schemes have been introduced in 2013.
Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010	
Status as stated in the NRP	Implemented.
Status as per Nov 2013	Implemented in 2010.
Description of policy or measure	According to the Energy Act 2010, the obligation of transport fuel suppliers to provide a specific percentage of their sales as biofuels was increased from 4% to 6%, as of January 2013.
National Energy Efficiency Action Plan 2 (NEEAP 2)	
Status as stated in the NRP	Implemented.
Status as per Nov 2013	Implemented in February 2013.
Description of policy or measure	NEEAP 2 sets the target of realizing 20% energy savings or 31,925GWh by 2020. The Action Plan includes 97 measures.
Better Energy – the National Retrofit Programme (continuation of “Better Energy – the National Retrofit Programme”)	
Status as stated in the NRP	Implemented. Target to be achieved by 2013 is 2,000GWh by a combination of energy supplier-led initiatives and SEAI programme activity.
Status as per Nov 2013	Under implementation.
Description of policy or measure	This is a multi-annual programme to increase energy efficiency standards of the buildings by reducing fossil fuel use, running costs and greenhouse gas emissions. The key objectives of the Programme are to improve energy efficiency in 1 million buildings by 2020; to implement 8,000GWh energy savings until 2020, to develop a sustainable market for energy efficient goods and services; and to reduce the GHG emissions. The main support scheme is a subsidy but Ireland plans to move to a (sustainable) finance-based programme. To enable that transition an Energy Efficiency Fund has been established.

“Pay-As-You-Save” Scheme	
Status as stated in the NRP	To be implemented.
Status as per Nov 2013	To be implemented after 2013.
Description of policy or measure	A team of experts is currently investigating the potential of “Pay-As-You-Save” Scheme for the residential sector. The Scheme is also included in the NEEAP 2 as a key action plan measure.
National Energy Performance Contracting Policy Framework (EPC)	
Status as stated in the NRP	To be implemented.
Status as per Nov 2013	To be implemented after 2013.
Description of policy or measure	A national EPC framework is expected to be put in place so as to promote new innovative models of financing energy efficiency measures.
Energy Efficiency Fund	
Status as stated in the NRP	Implemented.
Status as per Nov 2013	Implemented.
Description of policy or measure	The Energy Efficient Fund has been established in February 2013 and has been financed with €35 Million and the equal amount is expected to come from the private sector. The Fund’s aim is to finance energy efficiency projects in domestic and non-domestic sector. The Energy Efficient Fund will be accompanied and enhanced by the implementation of a National Energy Performance Contracting Policy Framework.

4 Policy development

This section covers significant developments made in key policy areas between February 2013 and November 2013. It does not attempt to describe every instrument in the given thematic area.

Environmental Taxation

In Ireland, the share of environmental tax revenues as a percentage of total tax revenues reached 8.86% in 2011 and was the 6th highest in the EU. Compared to GDP, the share amounted to 2.56%, which is still above the EU average. Since 2010, Ireland has a carbon tax in place that is levied on liquid fuels and natural gas. In May 2013 the tax was extended to solid fuels as well. Ireland has an implicit tax rate on energy that had a value of 170.8 € per tonne of oil equivalent (toe) in 2011. While this value was below the EU average, Ireland is in an improved position with regard to the energy intensity of its economy. In 2010, Ireland’s economy was the least energy intense economy in the EU. The share of energy tax revenues in total tax revenues is moderate (Eurostat 2013a).

In 2013, the Natural Gas Carbon Tax was changed from its original version in 2010 to include solid fuels such as peat and coal. The 2010 Tax already applied to imported kerosene, marked gas oil, liquid petroleum gas, fuel oil, and natural gas. The 2013 amendment follows an earlier one in 2012 whereby the carbon tax was increased by €5

and amounts to €20 per tonne of CO₂ emitted from fossil fuels (Revenue Commissioners 2012). As a result of the amendments to the Carbon Tax, the rate of €10 per tonne for solid fuels will be applied from 1 May 2013 and the rate of €20 per tonne will be applied to other fuels from 1 May 2014 onwards (Citizens Information 2012).

Energy Efficiency

Ireland's economy was the least energy intensive in the EU in 2010, and the intensity declined 11% between 2005 and 2011. Final energy consumption also decreased from 2005 and 2011 by 14%. In the time between 2010 and 2011 this development slowed down, but was still 9% more than double the EU average (Eurostat 2013a).

Ireland's industry increased its energy efficiency by 8% in the time between 2000 and 2010. However, the economic crisis and its correlated impact on Ireland's industry is the contributing factor. The deterioration of both the metals and machinery branches in particular led to reduced activity. Improvements in the household sector were much greater (23%) than in the industrial sector. Efficiency gains can be attributed to improvements in the building sector and a correlating building boom, which started in the late 1990's until 2007 (Odyssey 2012).

After the period of public consultation the National Energy Efficiency Action Plan 2 (NEEAP) was released in February 2013. With the NEEAP 2, Ireland aspires to achieve 20% energy savings (31,925 GWh which correlates with an expected reduction in spending of approximately €2.4 billion (Department of Communications, Energy and Natural Resources 2013d). NEEAP 2 has identified 5 action plan measures: 1) Measures and obligations for the Public Sector, 2) establishment of an Energy Performance Contracting, 3) the introduction of a Pay-As-You-Save Model (PAYS), 4) the provision for energy saving targets for energy suppliers; 5) the establishment of a Cross-Department Implementation Group that will monitor the performance of NEEAP 2 (Department of Communications, Energy and Natural Resources 2013d). NEEAP 2, foresees 91 measures in total distributed across five sectors: Public sector, energy supply, transport, business, residential, taking into consideration cross-sectoral factors (Department of Communications, Energy and Natural Resources 2013d). The implementation of the NEEAP 2 is supported by the Energy Efficiency Fund (EEF). EEF is funded with €70 Million (€35 Million from the Government with matching funds from the private sector). It is expected that the EEF will deliver up to 675 jobs, direct and indirect, for each € 10 Million expended. The Fund will be administered by Sustainable Energy Authority of Ireland (Department of Communications, Energy and Natural Resources 2013e).

In the building sector, the Government announced the continuation of the 2011 Better Energy: the National Upgrade Programme (update of "Better Energy – the National Retrofit Programme") through to 2014. It is a multi-annual programme to increase energy efficiency standards of buildings by reducing fossil fuel use, running costs, and greenhouse gas emissions. According to the Sustainable Energy Authority of Ireland, the key objectives of the programme are to improve energy efficiency in 1 million buildings by 2020, to implement 8,000GWh energy savings by 2020, to develop a sustainable market for energy efficient goods and services, and to reduce GHG emissions (SEAI 2012a). It was also part of the Government's Action Plan for Jobs which focused on green employment opportunities in the construction sector. The successful results of the Better Energy Programme, namely 250,000 energy upgraded homes, 3,800 new full time jobs and an estimated investment of € 600 million as well as €147.41 million of provided

grants to beneficiaries, led to its continuation in 2014 (Department of Communications, Energy and Natural Resources, 2013f; 2013g). For 2014, a budget of €57 million is foreseen and €30 million will be provided by the Government's stimulus package (Department of Communications, Energy and Natural Resources, 2013g).

As part of the Better Energy Programme, the government has set up a voluntary scheme for energy suppliers in March 2012: the Better Energy Obligations: Energy Saving Targets for Energy Suppliers. The programme should facilitate the implementation of energy efficiency measures in households. According to the programme, energy suppliers agree on a voluntary target that is met through efficiency measures taken by consumers. There is an energy efficiency fund available to the energy suppliers and providers of energy services will be supplementing the voluntary agreements (SEAI 2012a).

Renewable Energy

The consumption of renewable energy both overall and in the electricity sector in Ireland steadily increased between 2005 and 2011. However, the 2011 value of 6.7% still leaves Ireland a long way off from reaching its target of 16% by 2020. The amount of electricity consumption generated from renewable energy increased significantly from 7.2% in 2005 to 17.6% in 2011 (Eurostat 2013b).

The Renewable Energy Strategy was launched by the Ministry for Communications, Energy & Natural Resources in May 2012 and consists of specific actions to promote renewable energy mainly through a feed-in tariff scheme (REFIT) which was revised in two new schemes (REFIT 2 and REFIT 3) in 2012. REFIT 2 covers onshore wind, hydro, and biomass landfill gas, whereas REFIT 3 covers the biomass categories of anaerobic digestion, biomass CHP, biomass combustion, and biomass co-firing. There is also a tax relief scheme for corporate investments in projects generating electricity from renewable sources (solar, wind, biomass, and hydro).

In 2013, all 3 schemes have been amended. REFIT 2 was amended in June 2013. Applications are open for submission until 31 December 2015 and the projects must be completed and operational by 31 December 2017. Projects cannot be supported for more than 15 years and the support may not extend beyond 31 December 2032. In addition, two new terms were introduced in REFIT 1 and 2 ("fully commissioned" and "operational" replaced the term "connected") so as to simplify and accelerate the conditions under which an RES plants will be eligible for a FiT under both schemes (Department of Communications, Energy and Natural Resources 2013a; Department of Communications, Energy and Natural Resources 2013b).

On 25 July 2013, REFIT 3 provisions were modified. More specifically, the first amendment concerns the eligibility of the plants by stipulating that "Projects must be operational or substantially complete within 9 months of the end of 2015", thus including plants not completed at the end of the previous deadline (end of 2015). The introduction of a new term ("substantially complete") aims at accelerating the administrative procedures, so as an RES can receive a FiT under REFIT 3 (Department of Communications, Energy and Natural Resources 2013c).

In addition, on 2 August 2013, the European Commission approved the extension of the backstop date of REFIT 1 to 2027. Delays occurring with the connection of approximately 65 projects and the fact that REFIT 1 foresees a 15 year support scheme led Ireland to

submit a request for a later end date. As a result, the RES plants can fully profit from the 15 year support. (European Commission, 2013)

Transport

Emissions from the transport sector have increased overall between 1990 and 2011 but have been consistently decreasing since 2005. However, the proportion of transport emissions compared to Ireland's total emissions has increased incrementally to 20% which makes the transport sector of growing importance in relation to emissions targets (see Table 1).

Average emissions for newly registered cars are low in Ireland with a level of 124.8 CO₂/km. The level is the 4th lowest in the EU and has decreased at a higher rate than the EU average between 2005 and 2012 (Eurostat 2013a). Ireland is levying a registration tax based on the value of the vehicle as well as for passenger cars on CO₂ emissions. The ownership tax is based on cylinder capacity on private cars registered before 2009 and on CO₂ emissions, if registered thereafter. Buses and coaches are charged according to the number of seats they have.

Ireland has taken steps to encourage the purchase and use of electric vehicles. Through their Electric Vehicle Grant Scheme initiated in 2009, the Sustainable Energy Authority allocates grants of up to €5,000 for electric cars and chargers. One main goal of the scheme was to achieve 6,000 cars by the year 2012, however as of 2013, just 259 electric cars are on the road (The Journal, 2013). Some €573,600 has been allocated in total as grant money while the electricity provider, Electric Ireland, has spent €9.3 million installing charging points for public, domestic and business use.

The Non-Use of Motor Vehicles Act of 2013 entered into force 1 July 2013 by the Ministry for the Environment, Community and Local government and marks a significant change in the road tax regime in Ireland. The primary purpose of the Bill is to provide a system for declaring out-of-use vehicles for motor tax purposes, closing an existing loophole whereby vehicle owners can retrospectively declare that their vehicle has been out of use. In addition to the existing penalties for not having paid the motor tax, violators found to be making a false or misleading non-use declaration could face a Class B fine (up to €4,000) and/or six months imprisonment on summary conviction (Department of the Environment, Community and Local Government, 2013a).

Waste

The Household Food Waste and Bio-Waste Regulations entered into force in March 2013 and aims to promote the segregation and recovery of household food waste (Department of the Environment, Community and Local Government, 2013c). More specifically, it obliges waste collectors to provide a separate collection service for households, and in turn households are required to segregate such waste for separate collection. According to the regulations, householders may choose between composting the food waste at home or bringing it to authorised treatment centres. It is prohibited to macerate waste and dispose of it in a drain or sewer or to dispose of food waste (Department of the Environment, Community and Local Government, 2013d).

Agriculture

The agricultural sector has the highest emissions of all sectors in Ireland, accounting for almost 32% total emissions in 2011 (EPA, 2013). In contrast, the second largest source

of emissions in Ireland is the energy sector (20.9% of total national emissions). In addition, agriculture alone accounts for 44% of all non-EU ETS emissions (Department for Food, Agriculture and Marine, 2013). This is mainly due to the fact that Ireland constitutes a net exporter of meat and dairy products and this is why the aggregated agricultural production covers much more than its domestic needs (Department for Food, Agriculture and Marine, 2013). Apart from that, Ireland lacks a heavy industry along with its associated emissions.

Emissions from agricultural sector reached a peak in 1998 and since then emissions have been decreasing. More specifically, emissions from the sector were 8.3% lower than the reference levels (Department for Food, Agriculture and Marine, 2013) and 17.1% lower than the 1998 peak (McGettigan et al., 2010). However, in 2012, agricultural emissions increased for the first time after 13 years (EPA, 2013).

Future development of GHG, emissions from the agricultural sector are currently dictated by the Food Harvest 2020 policy, which focuses on designing a medium-term strategy for the agri-food sector by 2020. Its main targets can be summarized as follows (Department for Food, Agriculture and Marine, 2010):

- Increase the value of agricultural primary output by €1.5 billion (increase of 33% compared to the 2007-2009 average);
- Increase the value added in the agri-food sector by €3 billion (increase of 40% compared to 2008);
- Achieve an export target of €12 billion for the sector (increase of 42% compared to the 2007-2009 average).

Given the fact that Food Harvest 2020 is primarily focused on increasing the output and growth of the agri-food sector, the Irish Environmental Protection Agency (EPA) estimated that Food Harvest 2020 will have a negative impact on GHG emissions by 2020 i.e. a 9.6% increase during 2010- 2020 (Department for Food, Agriculture and Marine, 2013).

In response to this development, Teagasc submitted to the National Climate Policy Consultation a report entitled "A Marginal Abatement Cost Curve for Irish Agriculture, arguing that the reduction potential could be around 2.5Mt CO₂eq. per annum by 2020 through the implementation of a bundle of mitigation measures. Nevertheless, only 1.1Mt CO₂eq. would be credited to the agricultural sector in the Irish National GHG Emission Inventory (Schulte et al., 2012) and this equals to 4.5% reduction in comparison to 2005.

As part of the Climate Change Bill, a sectoral roadmap should be prepared. The approved roadmap is going to include specific measures and policies so as Ireland can comply with its climate related obligations (Department for Food, Agriculture and Marine, 2013).

Adaptation

The National Climate Change Adaptation Framework published in 2012 and provides a multi-level policy approach aimed to address the challenges posed by climate change in Ireland will require relevant national and local authorities to develop sectoral and local adaptation plans and publish the drafts of these plans by mid-year 2014.

5 Policy progress on past CSRs

As part of the European Semester, Country Specific Recommendations (CSRs) for each MS are provided by the EU Commission in June of each year for consideration and endorsement by the European Council. The recommendations are designed to address the major challenges facing each country in relation to the targets outlined in the EU 2020 Strategy.

No CSRs related to climate and energy were issued for Ireland in 2013.

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