# GHG trends and projections in Ireland

European Environment Agency



| Key GHG data ( <sup>1</sup> )   | 1990  | 2008   | 2009     | 2010 (²) | Unit                    | Rank in<br>EU-27 ( <sup>3</sup> ) | Rank in<br>EU-15 ( <sup>3</sup> ) |
|---|-------|--------|----------|----------|-------------------------|-----------------------------------|-----------------------------------|
| Total greenhouse gas emissions (GHG)                                  | 54.8  | 67.8   | 62.4     | 60.6     | Mt CO <sub>2</sub> -eq. | 16                                | 12                                |
| GHG from international bunkers ( <sup>4</sup> )                       | 1.1   | 3.0    | 2.5      | n.a.     | Mt CO <sub>2</sub> -eq. | 13                                | 12                                |
| GHG per capita  | 15.6  | 15.4   | 14.0     | 13.6     | t CO2-eq. / capita      | 2                                 | 2                                 |
| GHG per GDP (constant prices) (5)                                     | 1 040 | 462    | 459      | 451      | g CO2-eq. / euro        |                                   |                                   |
| Share of GHG in total EU-27 emissions                                 | 1.0 % | 1.4 %  | 1.4 %    | 1.3 %    | %                       |                                   |                                   |
| EU ETS verified emissions - all installations ( <sup>6</sup> )        |       | 20.4   | 17.2     | 17.4     | Mt CO <sub>2</sub> -eq. | 20                                | 14                                |
| EU ETS verified emissions - constant scope (7)                        |       | 20.4   | 17.2     | 16.4     | Mt CO <sub>2</sub> -eq. |                                   |                                   |
| Share of EU ETS verified emissions (all installations) in total GHG   |       | 30.1 % | 27.6 %   | 28.6 %   | %                       |                                   |                                   |
| ETS verified emissions compared to annual allowances ( <sup>8</sup> ) |       | 2.1 %  | - 14.5 % | - 18.1 % | %                       |                                   |                                   |

Share of GHG emissions (excluding international bunkers) by main source and by gas in 2009 (<sup>1</sup>) (<sup>9</sup>)



| Key GHG trends   | 1990                       | 1990-2009 |                            | 2008-2009 |                            | 1990–2010 <sup>(2)</sup> |                            | 2009–2010 <sup>(2)</sup> |  |
|--|----------------------------|-----------|----------------------------|-----------|----------------------------|--------------------------|----------------------------|--------------------------|--|
|  | Mt<br>CO <sub>2</sub> -eq. | %         | Mt<br>CO <sub>2</sub> -eq. | %         | Mt<br>CO <sub>2</sub> -eq. | %                        | Mt<br>CO <sub>2</sub> -eq. | %                        |  |
| Total GHG  | 7.6                        | 13.8 %    | - 5.4                      | - 8.0 %   | 5.8                        | 10.5 %                   | - 1.8                      | - 2.9 %                  |  |
| GHG per capita   | - 1.6                      | - 10.3 %  | - 1.4                      | - 9.0 %   | - 2.1                      | - 13.2 %                 | - 0.5                      | - 3.3 %                  |  |
| EU ETS verified emissions - all installations ( <sup>6</sup> ) |                            |           | - 3.2                      | - 15.5 %  |                            |                          | 0.1                        | 0.8 %                    |  |
| EU ETS verified emissions - constant scope (7)                 |                            |           | - 3.2                      | - 15.7 %  |                            |                          | - 3.2                      | - 15.7 %                 |  |

### Assessment of long-term GHG trend (1990-2009)

The large increase in emissions during the period 1990–2001 was clearly driven by the growth in CO2 emissions from energy use. During the 1994–2001 period, during which Ireland experienced an unprecedented economic growth, energy emissions grew by an average of 4.3 per cent annually. The rate of economic growth slowed down from 2000 to 2004, which together with the closure of ammonia and nitric acid production plants and continued decline in cattle populations and fertilizer use resulted in some reduction in the emission levels in 2002–2004. Emissions increased in 2005 due largely to road transport and electricity generation where two new peat-fired stations entered into service. The recent declining trend between 2005 and 2009 can be largely attributed to decreases in the agriculture and waste sectors and in 2008 to reduced process emissions in the mineral industry. The single largest decrease in emissions occurred in 2009 when emissions decreased by 8.0 per cent due to the economic crisis. In addition, the sustained increase in transport emissions, a major contributor to the trend, came to an end in 2008 and in 2009 decreased to the level pre 2006.

#### Assessment of short-term GHG trend (2008-2009)

The effects of the economic downturn are mainly evident in the 20 % reduction in emissions from the industry and commercial sector (mainly food processing and cement production) and in reduced power production (- 10 % emission reduction) due to a reduced electricity demand of end-users and an increased share of renewables in gross electricity consumption whilst carbon-intensive fuels in power generation decreased in 2009 relative to 2008. Emissions from road transport have decreased for the second consecutive year (8 % compared to 2008) as a consequence of the economic downturn as well as changes in vehicle registration tax and road tax introduced in mid-2008. The increase in renewables also contributed to lower GHG emissions in 2009.

#### Source and additional information

www.eea.europa.eu/themes/climate/data-viewers

(1) Total greenhouse gas emissions (GHG), GHG per capita, GHG per GDP and shares of GHG do not include emissions and removals from LULUCF (carbon sinks) and emissions from international bunkers.

(2) Based on EEA estimate of 2010 emissions.

Greenhouse gas emission data and EU ETS data

 $(^{3})$  Comparison of 2009 values, 1 = highest value among EU countries.

(<sup>4</sup>) International bunkers: international aviation and international maritime transport.

(<sup>5</sup>) GDP in constant 2000 prices - not suitable for a ranking or quantitative comparison between countries for the same year. 1990 information not available for some countries, replaced by later years: 1991 (Bulgaria, Germany, Hungary and Malta), 1992 (Slovakia), 1993 (Estonia) and 1995 (Croatia). Source GDP: Eurostat, 2011; Ameco database, 2011.

(<sup>6</sup>) All installations included. This includes new entrants and closures. Data from the community independent transaction log (CITL) as of 29 April 2009 for the reporting years 2005 and 2006, 11 May 2009 for the reporting year 2007, 17 May 2010 for the reporting year 2008 and 23 May for the reporting years 2009 and 2010. The CITL regularly receives new information (including delayed verified emissions data, new entrants and closures) so the figures shown may change over time.

(<sup>7</sup>) Constant scope: includes only those installations with verified emissions available for 2008, 2009 and 2010.

(<sup>8</sup>) "+" and "-" mean that verified emissions exceeded allowances or were below allowances, respectively. Annual allowances include allocated allowances and allowances auctioned during the same year.

(\*) LULUCF sector and emissions from international bunkers excluded. Due to independent rounding the sums may not necessarily add up.





Total emissions including bunkers

Total emissions excluding bunkers (Kyoto Protocol)

Projections (with existing measures)

Projections (with additional measures)

CO2 emissions/removals from carbon sinks

------Kyoto base year

Kyoto target



Note: GHG emission projections are represent either through dashed lines (with existing measures) or dotted lines (additional measures).

Source: National inventory, 2011; EEA proxy estimate; 2011; national projection data.

## Progress towards Kyoto target

Average 2008–2010 emissions in Ireland were 14.4 % higher than the base-year level, above the burden-sharing target of 13 % for the period 2008–2012. In the sectors not covered by the EU ETS, emissions were significantly higher than their respective target, by an amount equivalent to 5.2 % the country's base-year emissions. LULUCF activities are expected to decrease net emissions by an annual amount equivalent to 5 % of base-year level emissions. Ireland intends to use the flexible mechanisms at government level by acquiring an amount of Kyoto units equivalent to 3 % of base-year emissions per year. Taking all these effects in to account, average emissions in the sectors not covered by the EU ETS in Ireland were standing below their target level, by a gap representing 2.8 % of the base-year emissions. Ireland was therefore on track towards its burden-sharing target by the end of 2010.



Note: The difference between target and GHG emissions concerns the sectors not covered by the EU ETS. A positive value indicates emissions lower than the average target.

GHG trends and projections 1990-2020 - emissions by sector

Emissions included in emission trading (EU ETS)