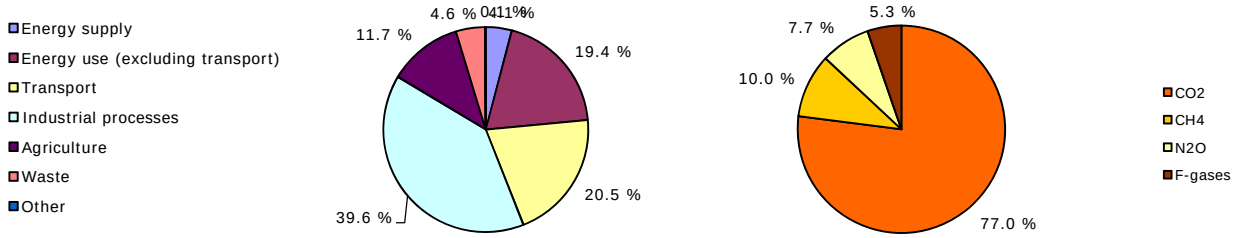
GHG trends and projections in Iceland

European Environment Agency

Key GHG data ([1])	1990	2008	2009	2010 ([2])	Unit	Rank in EU-27 ([3])	Rank in EU-15 ([3])
Total greenhouse gas emissions (GHG)	3.4	4.9	4.6	n.a.	Mt CO_2-eq.	n.a.	n.a.
GHG from international bunkers ([4])	0.3	0.7	0.5	n.a.	Mt CO_2-eq.	n.a.	n.a.
GHG per capita	13.5	15.5	14.5	n.a.	t CO_2-eq. / capita	n.a.	n.a.
GHG per GDP (constant prices) ([5])	466	374	380	0	g CO_2-eq. / euro		

Share of GHG emissions (excluding international bunkers) by main source and by gas in 2009 ([1]) ([9])



Key GHG trends	1990–2009		2008–2009		1990–2010 ([2])		2009–2010 ([2])	
	Mt CO_2-eq.	%	Mt CO_2-eq.	%	Mt CO_2-eq.	%	Mt CO_2-eq.	%
Total GHG	1.2	35.2 %	– 0.3	– 5.4 %	n.a.	n.a.	n.a.	n.a.
GHG per capita	1.0	7.5 %	– 1.0	– 6.5 %	n.a.	n.a.	n.a.	n.a.

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

Around 80 % of Iceland's energy — and almost all stationary energy — come from renewable resources, hydro and geothermal. This means that Iceland has few possibilities to reduce greenhouse emissions from the production of electricity and space heating, as Iceland had already almost abolished the use of fossil fuels for these purposes in 1990. The main driver behind increased emissions since 1990 has been the expansion of the metal production sector. In 1990, 88 thousand tonnes (Kt) of aluminium were produced in one aluminium plant in Iceland, whereas 817 Kt were produced in 2009 by three aluminium plants. Parallel investments in increased power capacity were needed to accommodate for a nine-fold increase in aluminium production. The size of these investments is large relative to the Icelandic economy. While they were relatively stable over the period 1999–2005, emissions have dramatically increased between 2005 and 2008, almost exclusively driven by the expansion of heavy industry in Iceland, mainly in the field of aluminium production. Iceland was severely hit by an economic crisis, which resulted in decreases in greenhouse gas emissions from most sectors. Since 1990 emission from the transport sector have risen considerably, owing to the fact that a larger share of the population uses private cars for their daily travel. Land-use change (land conversion to cropland and grassland) is also a significant contributor to CO2 emissions. However, increased government funding to afforestation and revegetation is increasing

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

Late year 2008, Iceland was severely hit by an economic crisis when its three largest banks collapsed. The blow was particularly hard owing to the large size of the banking sector in relation to the overall economy as it had grown to be ten times the annual GDP. The crisis has resulted in serious contraction of the economy followed by increase in unemployment, a depreciation of the Icelandic króna (ISK), and a drastic increase in external debt. Private consumption has contracted by a quarter since 2007. Emissions of greenhouse gases decreased from most sectors between 2008 and 2009. In 2008 and 2009 fuel prices rose significantly leading to lower emissions from the sector compared to the years before. The construction sector collapsed in autumn 2008. Emissions from fuel combustion in the transport and construction sector decreased in 2008 by 5% compared to 2007 and in 2009 by 2% compared to 2008, because of the economic crises.

Source and additional information

Greenhouse gas emission data and EU ETS data 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.

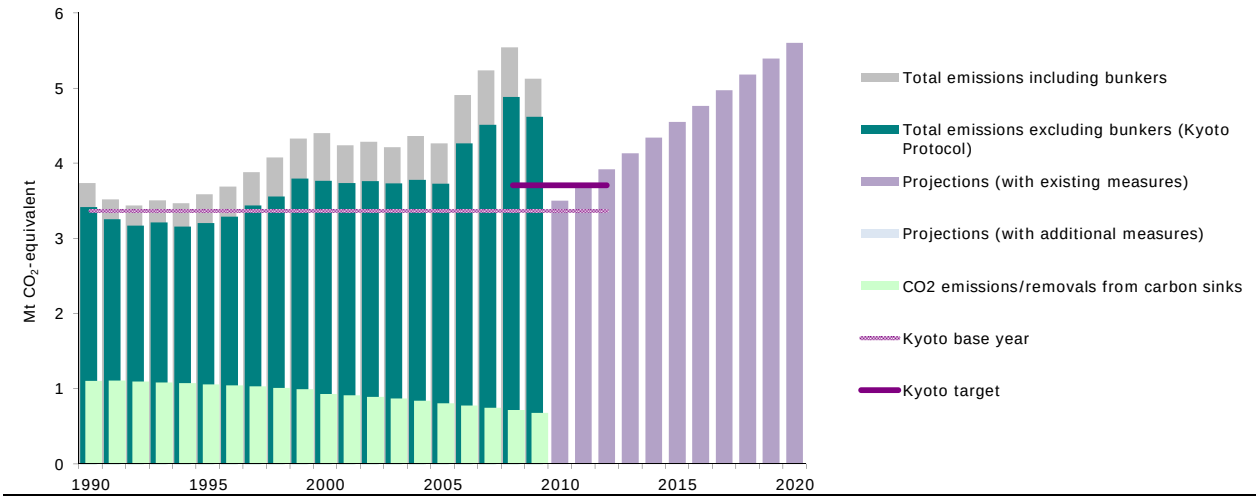
([3]) Comparison of 2009 values, 1 = highest value among EU countries.

([4]) International bunkers: international aviation and international maritime transport.

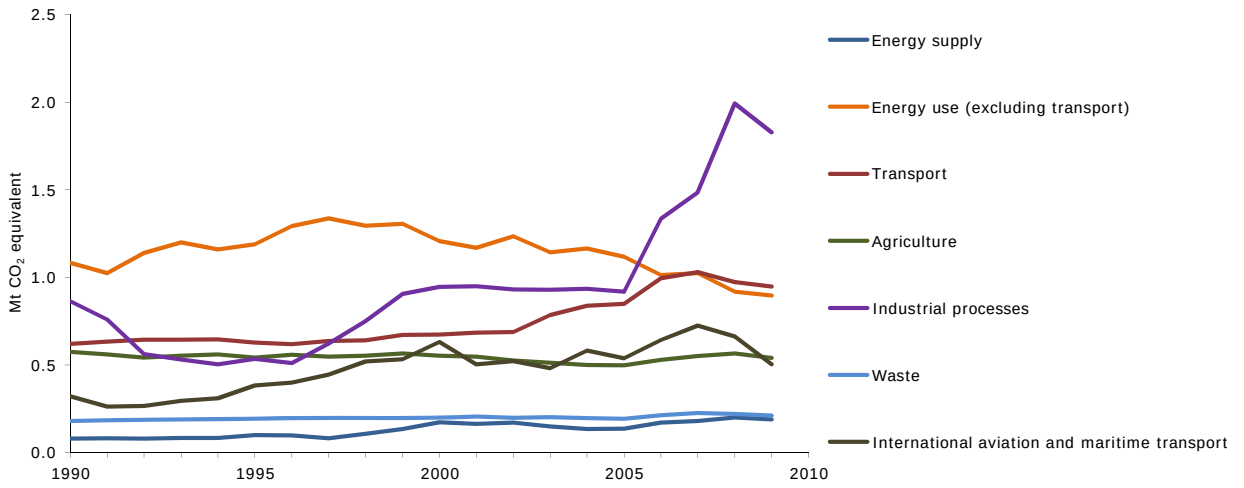
([5]) GDP in constant 2000 prices - not suitable for a ranking or quantitative comparison between countries for the same year. 1990 information not available for some countries, replaced by later years: 1991 (Bulgaria, Germany, Hungary and Malta), 1992 (Slovakia), 1993 (Estonia) and 1995 (Croatia). Source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

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

GHG trends and projections 1990–2020 — total emissions



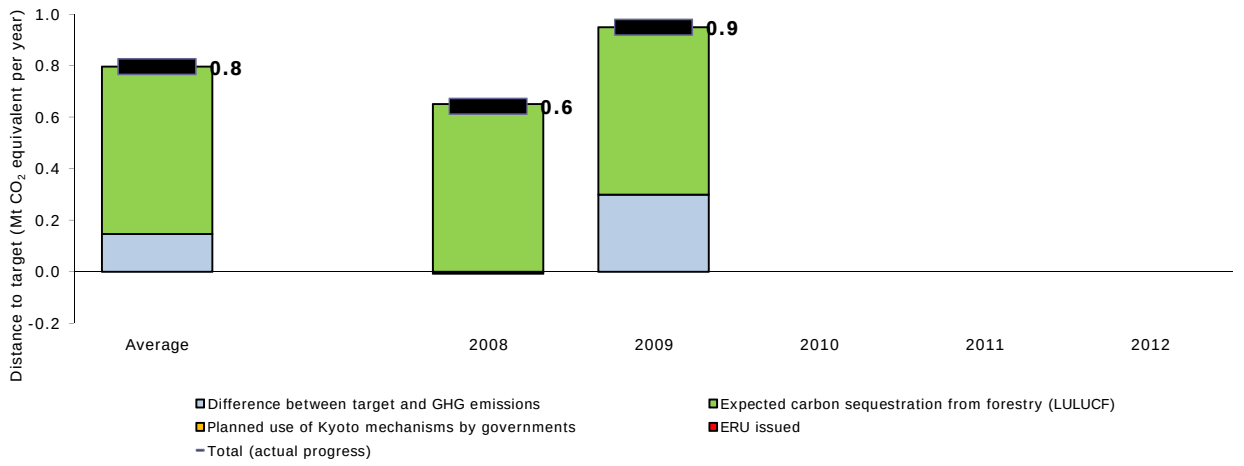
GHG trends 1990–2009 - emissions by sector



Source: National GHG inventory, 2011. See: http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=475

Progress towards Kyoto target

Average 2008–2009 emissions in Iceland were 5.7 % higher than the base-year level, below the Kyoto target of 10 % for the period 2008–2012. LULUCF activities are expected to decrease net emissions by an annual amount equivalent to 19.3 % of base-year level emissions. Taking all these effects in to account, average emissions Iceland were standing below their target level, by a gap representing 23.7 % of the base-year emissions. Iceland was therefore on track towards its Kyoto target by the end of 2009. These calculations take into account the provisions of COP Decision 14/CP.7, according to which any Annex I Party accounting for less than 0.05 % of all Annex I Parties 1990 emissions (as is the case for Iceland), can exclude from its national total emissions during the commitment period, the emissions from single projects provided that renewable energy is used, resulting in a reduction in GHG emissions per unit of production, and best environmental practice is used to minimize process emissions.



Note: A positive value indicates emissions lower than the average target.