

Greenhouse gas emissions

Greenhouse-gas emissions declined substantially in 2009, which moved Slovenia somewhat closer towards its Kyoto Protocol targets, while most EU countries had already been on track to reach their targets before the economic crisis.

By ratifying the Kyoto Protocol, Slovenia committed to reducing greenhouse-gas (GHG) emissions by an average of 8%¹ in 2008–2012 compared with baseline emissions in 1986. In 2008–2009 GHG emissions in Slovenia were 0.5% higher on average than in the base year (excluding carbon sinks²), in contrast to the average GHG emissions in more developed Member States (EU-15), which were 9.5% lower.³ With the exception of Slovenia, the most pronounced declines relative to the base year were recorded by new Member States, which was related to their extensive economic restructuring in the early 1990s. The increase in GHG emissions in Slovenia after the transition period was due to faster economic growth than in the EU as a whole, coupled with a slower improvement, i.e. decline, in emission intensity⁴ in recent years. Slovenia generated 11.1% more emissions per unit of GDP in PPS than the EU average in 2005, and 18.7% more in 2009.

In 2010 GHG emissions remained at a similar level as in 2009, but the decline in the emission intensity of the Slovenian economy slowed significantly in the 2008–2010 period. After peaking in 2008, GHG emissions in Slovenia decreased substantially in 2009 as a result of the crisis. With economic activity remaining weak, GHG⁵ emissions in 2010 remained similar to those in the previous year (up 0.2%). Emissions in 2010 were down 4.1% on the base year of the Kyoto Protocol, while emissions

during 2008–2010 were down 1.0% overall. Over the entire 1986–2010 period, the structure of emissions underwent significant changes, with an increase in emissions from expanding road transport (up 163%) cancelling out the benefits of any reduction in emissions in other sectors. The share of transport emissions stood at 10% in 1986, but climbed to 27% in 2010. In 2010 transport emissions fell for the second consecutive year.⁶ The consumption of diesel fuel rose as a result of the recovery in international trade and hence the increased need for freight transport, but the increase was smaller than the fall in petrol consumption. Emissions from most other sources also declined relative to the previous year. Emissions from the energy sector, which is the largest source of emissions (accounting for 32% of the total), increased most in 2010. Energy-related emissions are almost entirely due to thermal power plants. In 2010 output rose by 2% and emissions by 2.1%. At the level of the total economy, GHG emissions remained nearly unchanged amid modest growth in GDP, and consequently, the emission intensity of the economy dropped somewhat compared with 2009 (by 1.1%). In the whole period since 2008 Slovenia has thus made only slow progress towards improving the emission intensity of the economy.

Meeting the 2020 targets will be critically dependent on transport emissions. Within the Climate and Energy Package, the EU set a target of at least a 20% reduction in GHG emissions by 2020, which is also part of the EU 2020 Strategy. For those involved in the EU Emissions Trading System (EU ETS), the target is determined for the EU as a whole (a 21% reduction by 2020 compared with 2005). The EU ETS primarily includes larger installations from the energy and manufacturing sectors, which accounted for about 42% of total emissions in Slovenia in 2010, and which, according to our calculations, reduced emissions by 6.9% compared with 2005. For emissions by sectors not included in the ETS (transport, buildings, agriculture and waste), targets are set for each country separately; for Slovenia a 4% increase is allowed. In 2010, these emissions were 1.9% lower than in 2005, but it was precisely these emissions that had been growing fastest before the crisis. The European Commission estimates⁷ that, taking into account the adopted measures and previous trends, the emissions from sectors not included in the EU ETS will be 30% higher in Slovenia in 2020 than in 2005. Despite certain positive shifts in the last few years, Slovenia will have to focus more on measures in these areas, and their effectiveness will to a large extent depend on a successful reduction of transport emissions.

¹ If Slovenia demonstrates proper forest management, it could also include sinks in the amount of 1.32 Mt CO₂ equivalent from the increase in the growing stock (6.5% of total base-year emissions) in meeting the Kyoto commitments. In addition, countries have the option of purchasing part of the required reduction that they cannot achieve at home from other Member States via the so-called flexible mechanisms.

² Including sinks, total GHG 2008–2009 emissions in Slovenia were on average around 2% higher than the Kyoto target.

³ The common EU-15 target is an emission reduction target of 8% compared to the base year of 1990, but the targets for individual countries differ. Most new EU Member States have the same GHG reduction target, about 8% (with the exception of Poland and Hungary: 6%), but the base years differ. For Cyprus and Malta, no targets are defined under the Kyoto Protocol.

⁴ Emission intensity is the ratio of a country's GHG emissions to its GDP. For methodological purposes, we used GDP at constant prices in the time comparison and GDP in purchasing power standards (PPS) for a given year in the international comparison.

⁵ Data from the Slovenian Environment Agency (ARSO), 2012.

⁶ After a 13.3% decline in 2009, by a further 1.2%.

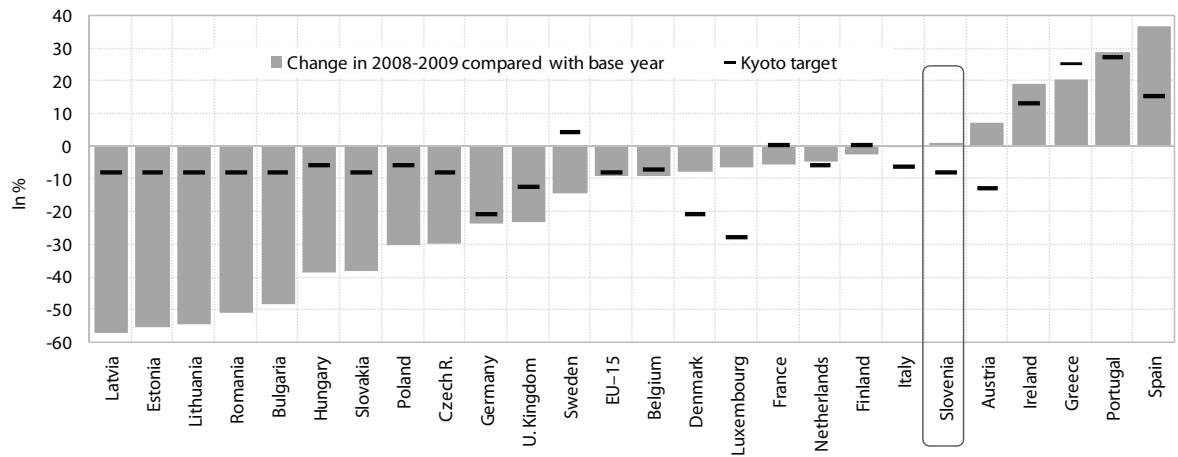
⁷ Analysis of options beyond 20% GHG emission reductions: Member State results, 2012.

Table: Greenhouse gas emissions (in kt CO₂ equivalent), Slovenia, 1986–2010

	1986*	2000	2005	2006	2007	2008	2009	2010
TOTAL	20,354	18,880	20,341	20,580	20,709	21,431	19,477	19,522
Transport	2,008	3,763	4,442	4,652	5,227	6,152	5,337	5,272
Energy	6,729	5,498	6,325	6,379	6,596	6,388	6,091	6,219
Fuels in industry	4,406	2,269	2,486	2,593	2,346	2,305	1,918	1,900
Industrial processes	1,328	1,063	1,373	1,433	1,447	1,327	973	971
Fuels in households	2,366	3,051	2,583	2,358	1,912	2,277	2,187	2,228
Agriculture	2,334	2,137	2,006	2,023	2,078	1,965	1,996	1,963
Waste	566	683	713	729	692	619	583	577
Other	618	417	413	412	409	397	393	392

Source: ARSO. Report on GHG emissions, 2012.
Note: * Base-year emissions under the Kyoto Protocol.

Figure: Greenhouse gas emissions¹ compared with the Kyoto base year, 2008–2009 average, and targets²



Source: UNFCCC, 2011.
Note: ¹ Excluding emissions related to LULUCF, sinks and emissions in aviation and maritime transport. ² The gap between the average GHG emissions in 2008–2009 and the Kyoto targets is only an approximate estimate of meeting the Kyoto Protocol commitments, as it excludes sinks and flexible mechanisms, and takes into account the actual emissions in EU ETS sectors.