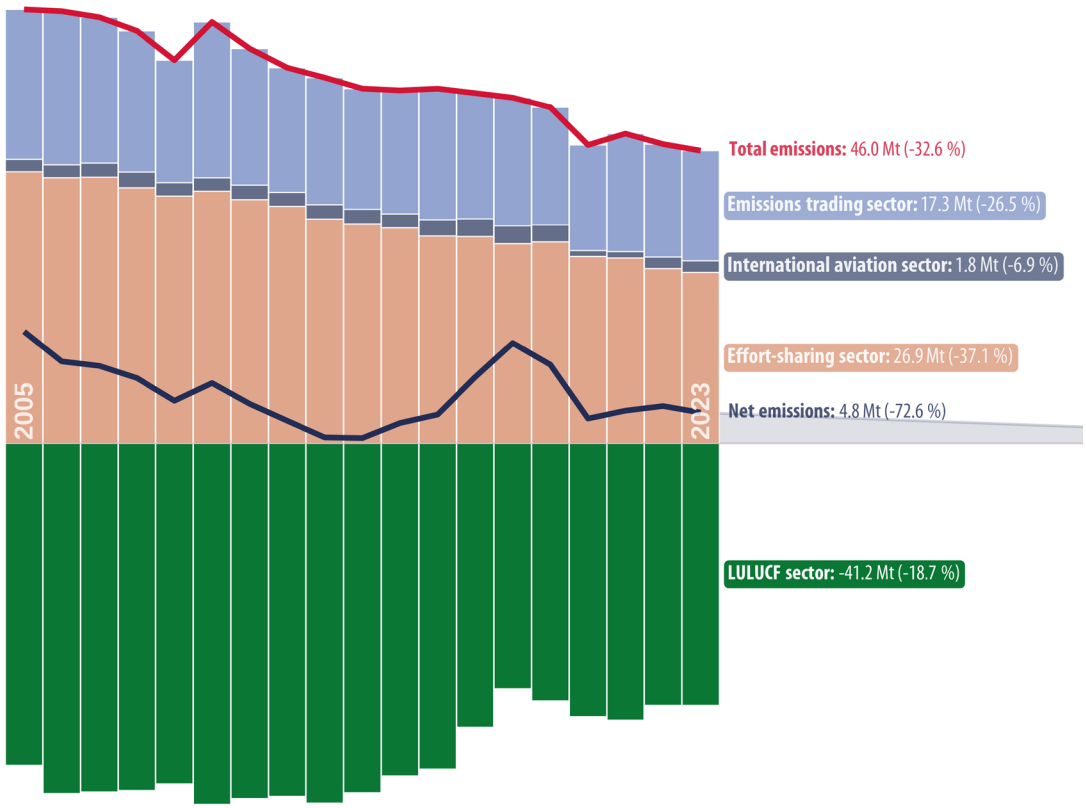
European Parliament

Sweden's climate action strategy

Sweden aims to achieve climate neutrality by 2045 (see trajectory in Figure 1) and to further reduce its emissions in sectors covered by the Effort-sharing Regulation. In 2023, Sweden accounted for 0.16 % of the EU's net greenhouse gas (GHG) emissions. It achieved a net emissions reduction of 72.6 % from 2005 to 2023, well above the EU average reduction of 30.5 %. In the same period, the country reduced emissions covered by the EU emissions trading system by 26.5 %. Sweden's land use, land-use change and forestry (LULUCF) sector has consistently performed as a large carbon sink. In August 2023, Sweden updated its recovery and resilience plan and included a REPowerEU chapter. The plan dedicates 43.6 % of total funding to the green transition. Sweden submitted a draft updated national energy and climate plan (NECP) in July 2023. The European Commission assessed it, making recommendations for the final updated NECP, which Sweden submitted in June 2024 as one of four EU countries to meet the deadline.

A 2023 Eurobarometer survey showed that 73 % of Swedes, against a 46 % EU average, find climate change to be one of the four most serious problems facing the world. While 60 % consider tackling climate change a personal responsibility, this task is also seen as the responsibility of national governments (80 %), the EU (74 %), and business and industry (55 %).

Figure 1 – Sweden's greenhouse gas emissions in million tonnes (Mt), 2005-2023



Data source: European Environment Agency (EEA), 2024.

This briefing is one in a series covering all EU Member States.

EPRS | European Parliamentary Research Service

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PE 767.174 – December 2024

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Sweden's starting point

In June 2017, the Swedish parliament adopted a climate policy framework with a view to achieving climate policy stability and setting a predictable pathway for businesses and society as a whole. It comprises three main parts: national climate goals, a Climate Act, and a Climate Policy Council, and sets two targets for 2045: to achieve climate neutrality and to reduce GHG emissions by 85 % compared with 1990. The Climate Act, in force since 2018, obliges the government to: pursue the national climate targets; ensure that the national budget and climate policy work together; report to the parliament on a regular basis; and deliver a climate policy action plan every 4 years. These elements form the basis of Sweden's long-term strategy, which was submitted to the EU and to the United Nations Framework Convention on Climate Change in 2020.

In sectors covered by the Effort-sharing Regulation, the national targets are to reduce emissions by 40 % in 2020, by at least 63 % in 2030, and by at least 75 % in 2040, all compared with 1990 levels. Options for additional measures to achieve these targets include increased uptake of CO_2 by forests, verified emissions reductions carried out outside of the Swedish borders, and carbon capture and storage based on the combustion of biomass. The domestic transport sector must contribute to the goals with an emissions reduction of at least 70 % by 2030 compared with 2010 levels.

The Council's 2024 country-specific recommendations ask Sweden to reduce emissions from road transport, and accelerate and streamline permitting procedures for renewable energy projects, in particular for offshore and onshore wind energy. The Commission's country report warns that recent policy developments increase uncertainty for investors and consumers, and will make it difficult for Sweden meet key national emissions targets, particularly in the transport sector.

Between 2005 and 2023, Sweden achieved considerable emissions reductions in waste management (-70 %), manufacturing industries (-42 %), and transport (-35 %), in contrast to the modest reductions in agriculture (-4 %). Sweden's per capita emissions fell by 42 % since 2005, to reach 4.4 tonnes of CO_2 equivalent (tCO_2e) in 2023, far below the EU average of 7.2 tCO_2e. In addition, the Swedish economy's carbon intensity fell by 51 % between 2005 and 2023, and is 62 % below the EU average. Sweden achieved its national emissions target under the Effort-sharing Decision for the 2013-2020 period, and exceeded its 2020 target under the Renewable Energy Directive. In respect to the 2020 targets under the Energy Efficiency Directive, the country reached its primary energy consumption target, but missed the final energy consumption target.

Sweden received an overall high rating in the 2025 Climate Change Performance Index (CCPI). The country was rated 'very high' in renewable energy and 'high' in GHG emissions, but 'low' in climate policy and 'very low' in energy use. The CCPI ranks countries based on their climate protection performance using primarily quantitative data, with experts in the field providing qualitative evaluation of a country's forward-looking climate policies. The experts criticise the current government for reversing progressive climate policies, including the aviation tax, electric vehicle subsidies, and investment in railroads.

Climate action governance

The Swedish Climate Policy Council, established in 2018 as an independent expert body, is tasked with evaluating the compatibility of government policies with the adopted climate goals. The Swedish Environmental Protection Agency provides data and analysis for the climate policy action plan and the annual reporting. The Swedish 2030-Secretariat is in charge of ensuring the delivery of the 70 % emissions reduction target in the transport sector. The Fossil-free Sweden initiative, launched by the Swedish government in 2015, develops sectoral decarbonisation roadmaps.

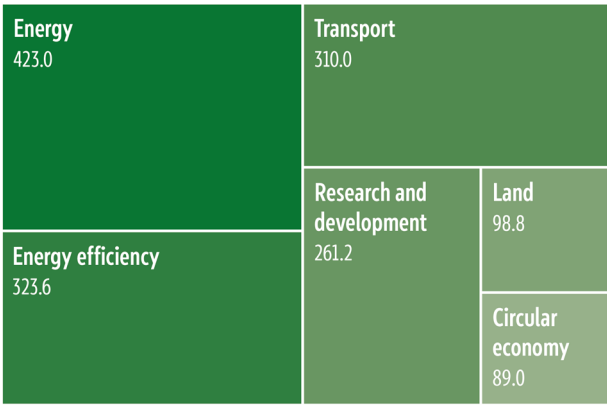
Sweden has a national climate change adaptation strategy since 2018, and several sectoral and regional climate change adaptation plans. The country has its own climate change adaptation portal, designed to provide support to various actors. It is managed by the National Centre for Climate Change Adaptation.

Climate action in the national recovery and resilience plan

Sweden submitted its national recovery and resilience plan (NRRP) to the Commission on 28 May 2021, an update on 24 August 2023 with a REPowerEU chapter (€198 million), and a second update on 19 September 2024. The country will receive the maximum amount of €3 445.7 million from the Recovery and Resilience Facility (RRF) in the form of non-repayable grants, equivalent to 0.7 % of Sweden's gross domestic product in 2019. Measures relating to the green transition, a main objective of the Swedish NRRP, reach over €1.5 billion, or 43.6 % of the allocation (Figure 2), well above the RFF target of 37 %.

The plan comprises 15 measures that contribute to climate objectives, falling under the components: green recovery; investment for growth and housing; and REPowerEU. Examples of investments and reforms include local and regional climate investment (in renewable energy, biogas and biofuels, transport, waste, charging stations for electric cars, improved infrastructure); energy efficiency in apartment buildings; investment support for rental housing and housing for students; strengthened railway support; and formal protection of forests with high natural value for biodiversity.

Figure 2 – NRRP climate dimension (€ million)

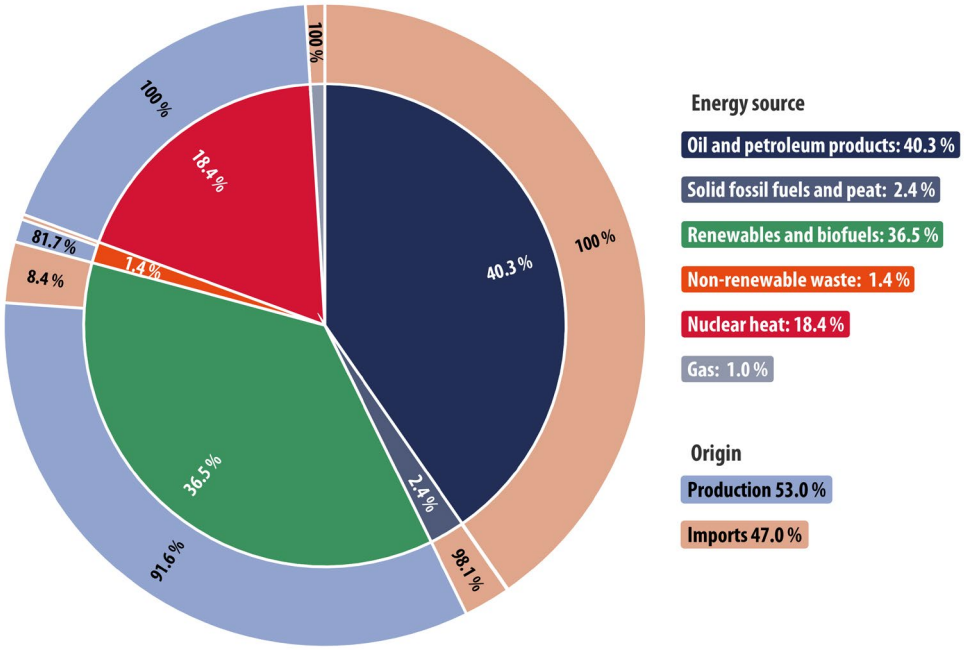


Data source: European Commission, 2023; graphic by Lucille Killmayer, EPRS.

Energy situation

Sweden produced 35.7 million tonnes of oil equivalent (Mtoe) of energy in 2022 and imported 32.2 Mtoe from different sources, as shown in Figure 3. In the same year, the country exported 19.3 Mtoe of energy, mostly refined petroleum products and some electricity.

Figure 3 – Energy mix and import dependency, 2022

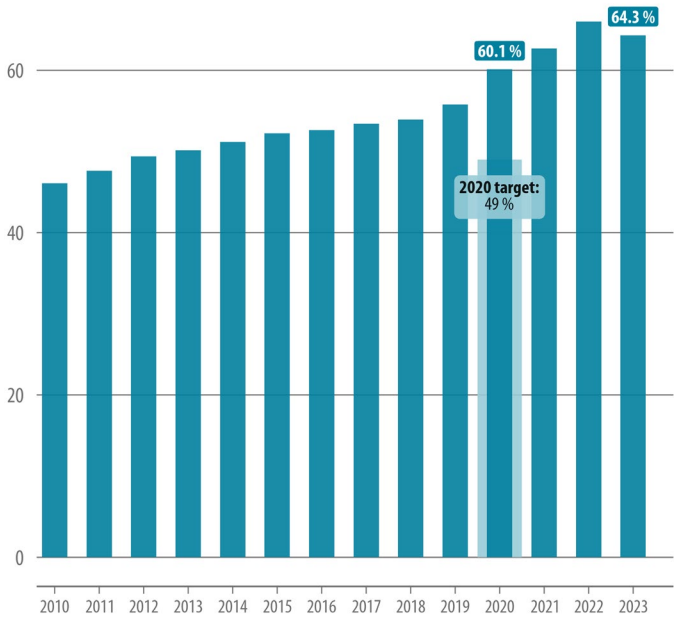


Data source: Eurostat (nrg_bal_sd), 2024.

Oil and petroleum products accounted for 40.3 % of Sweden's energy supply in 2022. All of the oil is imported, mostly from Norway. Sweden's oil demand in 2024 is likely to rise, because the government lowered the biofuels blending mandate. Gas accounted for only 1% of Sweden's energy supply in 2022. All of it is imported, with 80 % coming from Denmark.

Sweden has six operational nuclear reactors. It plans to build two large-scale reactors by 2035, and another 10 new reactors, including small modular reactors, by 2045. In June 2023, the country changed its target from '100 % renewable' electricity by 2040 to '100 % fossil-free' electricity, aligned with the plans for more nuclear power.

Figure 4 – Renewable energy share in final energy consumption



Data source: Eurostat (nrg_ind_ren), 2024.

Sweden achieved a 64 % share of renewable energy sources (RES) in final energy consumption, and exceeded its 2020 target for the RES share by over 11 percentage points (Figure 4). The final updated NECP projects a 67 % RES share by 2030, which remains below the indicative contribution of 76 % resulting from EU legislation. Furthermore, Sweden expects the share of fossil-free energy, which includes RES and nuclear power, to reach 78 % in 2030. The final updated NECP relies mostly on existing policies and measures to reach renewable energy objectives, an approach criticised in the Commission's assessment of the draft updated NECP.

From 2005 to 2022, the amount of RES used in Sweden grew by 59 %. This increase is mostly due to the expansion of wind power, heat pumps, and biofuels. Biofuels were the most important RES in 2022, accounting for 53 % of the RES share. Hydropower accounted for 26 %. Wind power – the energy source with the largest growth since 2005 – represented 13 % of the total, while heat pumps and solar accounted for 7 % and 0.8 % respectively. The country takes a technology-neutral, market-driven approach, and does not have quantified targets for specific technologies.

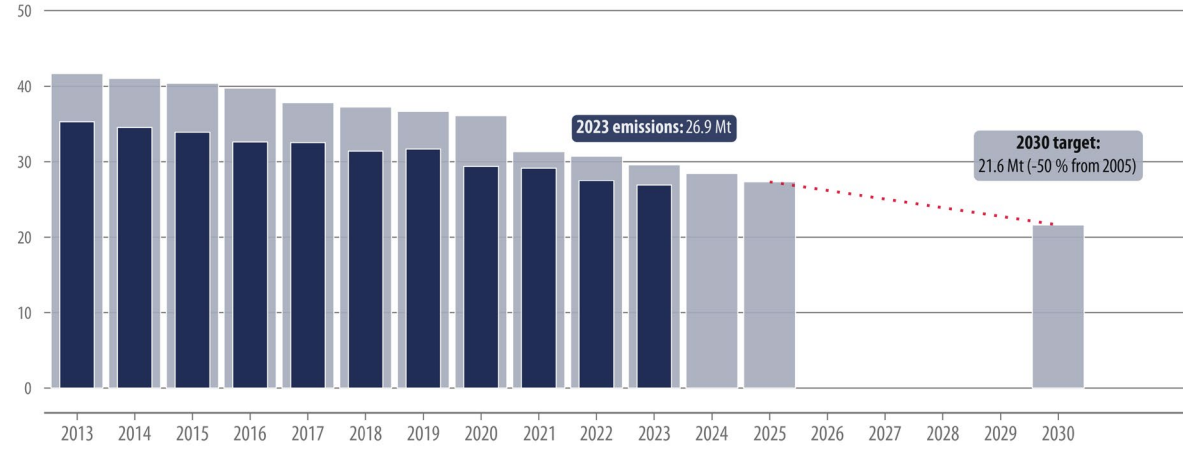
The share of renewable energy in district heating and cooling was just over 69 % in 2022, and is expected to rise to 74 % by 2030, according to the NECP. In the industry sector the share was 64 % in 2020 and is expected to reach 74 % in 2030 with existing policies and measures.

Sectoral challenges and strategies

Sweden stayed under its allocation every year over the 2013-2020 period under the Effort-sharing Decision (Figure 5). The 'fit for 55' revision of the Effort-sharing Regulation (ESR) sets Sweden's emissions reduction obligation for 2030 to 50 % compared with 2005. Sectors covered by the ESR include transport, buildings, agriculture, and small industrial installations.

Sweden introduced a national carbon tax in 1991. The tax rate increased gradually, to reach 1 450 Swedish crowns (€126) per tonne of CO_2 in 2024. Together with the EU emissions trading system, it puts a price on 95 % of Sweden's fossil CO_2 emissions, and proved effective in reducing emissions.

Figure 5 – Sweden's emissions under the Effort-sharing Decision/Regulation



Data source: EEA, 2023.

In 2023, the transport sector had the largest share in total emissions (31 %). Sweden aims to reduce the sector's 2030 emissions by at least 70 % below 2010 levels. The NECP highlights several measures for this sector's decarbonisation. From 2005 to 2022, the share of renewable energy in the transport sector rose from 6.6 % to 29 %, mostly through biofuel use. Up to 2023, fuel suppliers had to lower GHG emissions through a gradual increase in biofuel blending. However, as of 2024, the government lowered the reduction obligation from 7.8 % for gasoline and 30.5 % for diesel to only 6 % as of 2024. It will rise to 10 % for diesel and gasoline from July 2025, to align with the requirements of EU energy legislation. The increased use of electric vehicles helped raise the RES share in the sector. In 2023, almost 60 % of newly registered cars in Sweden were electric; however, the growth slowed down owing to a phase-out of government support and changes to fuel taxation.

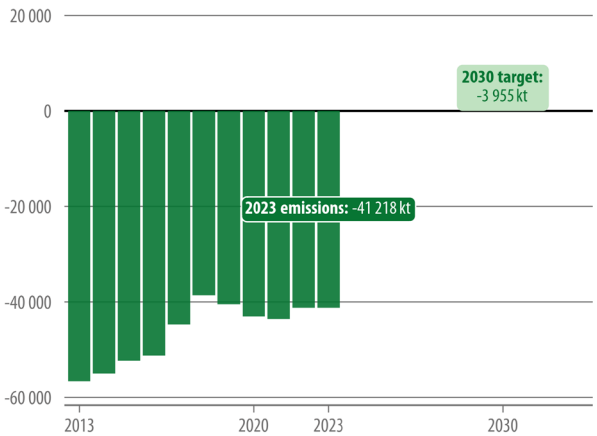
The Industrial Leap programme was initiated in 2018 to support innovations to reduce process-related GHG emissions. Together with the EU Innovation Fund, it supports a demonstration plant in Gällivare for 'green steel' production using hydrogen instead of coal to largely eliminate emissions.

In the building sector, the RES share was 76 % in 2020 and is projected to reach 89 % in 2030 with existing policies, according to the final updated NECP. The growth will result mostly from renewable electricity from grids, solar on and near buildings, heat pumps, and increased use of district heating.

Agriculture accounted for 14 % of total emissions in 2023. From 2005 to 2023, it was the sector with the smallest emissions decrease (3.6 %). As the final updated NECP states, reducing agricultural emissions in a cost-effective and competitive manner is difficult, so residual agricultural emissions need to be offset by measures in other sectors to reach the 2045 net-zero target.

By 2030, Sweden must reduce its LULUCF emissions (Figure 6) by 3 955 kilotonnes of CO_2e ($ktCO_2e$) compared with its average emissions in 2016, 2017 and 2018 (where accounting adjustments may occur). In 2020, this baseline was -43 366 $ktCO_2e$. The final updated NECP indicates that the country would fall short of its 2030 LULUCF obligation by between 7 million tonnes and 19 million tonnes under different scenarios. The 2030 Secretariat presents increased forest growth or reduced logging as options to boost carbon storage.

Figure 6 – LULUCF emissions in Sweden



Data source: EEA (2030 target is based on 2016-2018 baseline), 2024.

Latest policy developments

Sweden's climate policy, long considered as one of the most ambitious, has changed considerably under the current government. In December 2023, the government presented Sweden's second climate policy action plan. The plan contains about 70 specific proposals for emissions reductions in all sectors, aimed at achieving Sweden's climate goals all the way to net-zero emissions by 2045. However, the plan has been criticised for a lack of short-term action to reach the 2030 targets.

In June 2024, the 2030-Secretariat warned that Sweden is not on track to meet any of its national climate targets, particularly the 2030 target for the transport sector. The March 2024 Climate Policy Council report concludes that policies adopted in 2023 will increase emissions and put Sweden's 2030 climate goals and EU commitments at risk. It notes a gap between the government's action and its stated goal of ambitious and effective climate policy. Moreover, the report finds that Sweden's climate policy disregards the interim targets for 2030 set by the Swedish parliament, and largely lacks emissions forecasts and implementation timelines, thus charting an unnecessarily risky path for Sweden's climate transition.

The Commission's country report also concludes that Sweden is likely to miss its national climate targets for 2030 owing to the recent policy changes, which will push up climate policy cost in the long term. It suggests increasing renewable electricity production for electrification of industry and transport, and upgrading electricity grids.

The International Energy Agency (IEA), which reviewed Sweden's energy policy, recommends implementing the sectoral decarbonisation roadmaps developed by Fossil Free Sweden and developing a national hydrogen strategy. In the transport sector, the IEA calls for a stronger biofuels policy combined with targeted support for low-income consumers. It warns that recent policy reversals, such as the lowering of the transport fuels mandate, risk undermining investor confidence. An OECD report on Sweden's green industrial revolution finds that recent policy changes move the 2030 target out of reach and threaten Sweden's position as a climate frontrunner.

In September 2024, the Swedish government decided to abolish the tax on airline tickets as of July 2025. The tax, introduced in 2018, ranges from 76 to 504 Swedish crowns (€6.6 to €44) depending on the destination. In November 2024, the government cancelled 13 out of 14 offshore wind farm projects in the Baltic Sea because of concerns that they interfere with national defence.

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