

8TH EAP THEMATIC PRIORITY OBJECTIVE

Climate change mitigation



1 Climate change mitigation

Reducing greenhouse gas emissions and enhancing carbon removals

Addressing climate change is one of the defining challenges of our times. The [European Green Deal](#) ⁽¹⁾ was the blueprint for a transformational change to make Europe the world's first climate-neutral continent by 2050 through a just transition that leaves no one behind. The [8th Environment Action Programme](#) (EAP) ⁽²⁾ built on the Green Deal vision and emphasised the achievement of targets on greenhouse gas (GHG) emissions and carbon removal in the land use, land-use change and forestry sector (LULUCF).

To capture progress on climate change mitigation efforts, the European Commission's [8th EAP monitoring framework](#) ⁽³⁾ includes two indicators and corresponding 2030 targets:






- An indicator on total GHG emissions to monitor progress on achieving the target of reducing net EU GHG emissions to at least 55% below 1990 levels by 2030.
- An indicator on GHG emissions from LULUCF to monitor whether this sector will be able to remove from the atmosphere the net equivalent of 310 million tonnes of carbon dioxide emissions by 2030 at EU level.

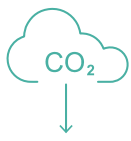
The indicator assessment results are summarised further below. Overall, it will be challenging to meet these two 2030 targets but current policy developments seek to bring them into reach. The GHG projections that Member States submitted to the EEA in March 2023 indicate that existing and planned policies and measures would deliver an aggregated 48% net reduction in GHG emissions, compared to 1990 levels, by 2030. As Member States update their National Energy and Climate Plans by June 2024, they may identify additional measures that close the gap to the 55% target as part of their implementation of the [Fit for 55 package](#) ⁽⁴⁾. In terms of progress towards meeting the GHG removal target, while preliminary data for 2022 show an increase in carbon removal, this follows a 10-year decreasing trend.

The methodology used to determine the prospects of meeting the 2030 targets is described in Annex 2. It is also explained in the following key:

Methodology key

Will the objective be met by 2030?

	It is very likely	i.e. it answers 'yes' with a high degree of confidence to the question
	It is likely but uncertain	i.e. it answers 'maybe yes' to the question
	It is unlikely but uncertain	i.e. it answers 'maybe no'
	It is very unlikely	i.e. it answers 'no' with a high degree confidence
	It is unclear	i.e. the prospects cannot be determined (e.g., insufficient data/evidence, no correlation between indicator and selected objective)



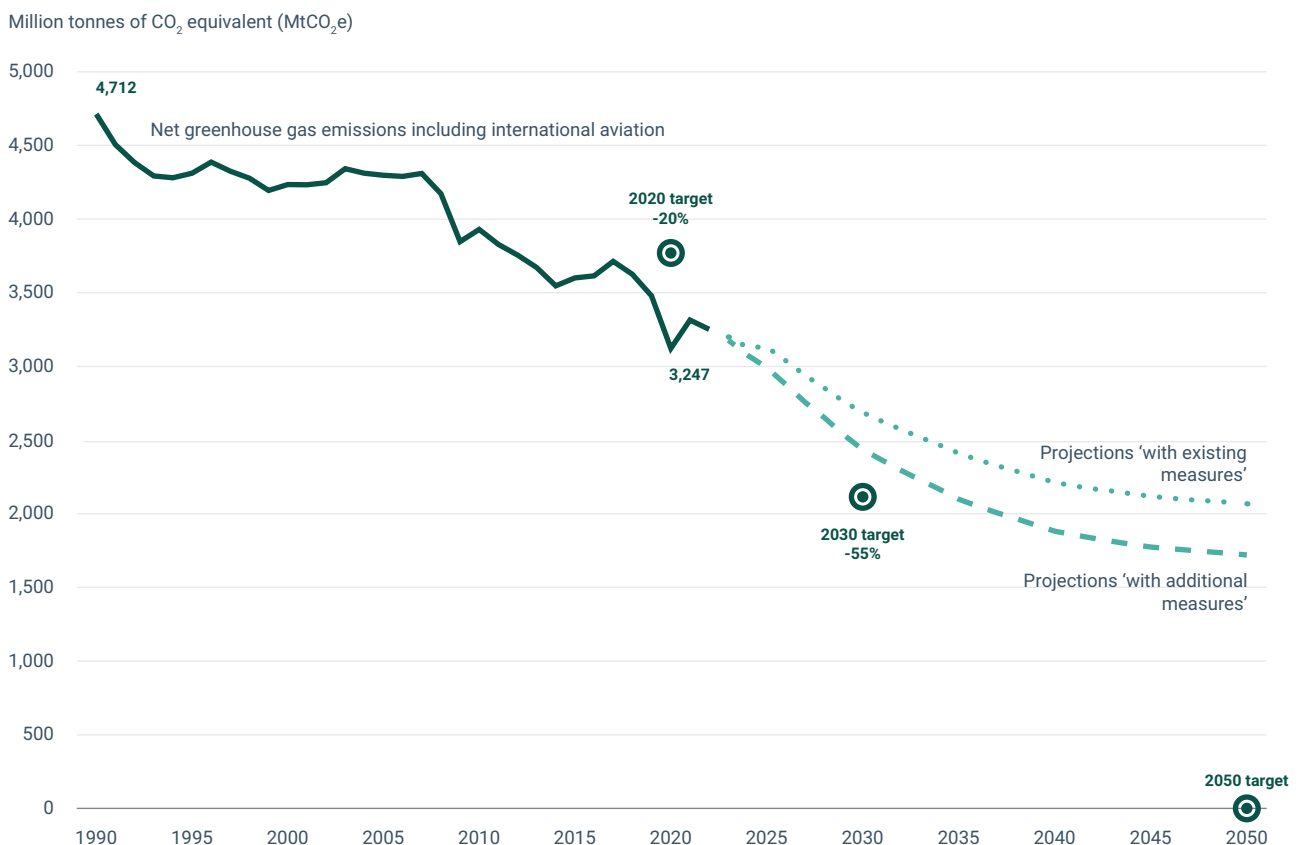
Greenhouse gas emissions:

Will the EU cut net GHG emissions by at least 55% by 2030 from 1990 levels?



Likely but uncertain. The legally binding measures under the Fit for 55 package create a framework to achieve net GHG emission reductions of 55% by 2030. Considerable acceleration in emission reductions will be needed. It is early to assess whether the target may be reached. Aggregated GHG projections from March 2023 indicate the policies and measures that Member States had adopted and planned at the time of submission would deliver net GHG emission reductions of 48% by 2030. This year's projections may, however, not fully reflect current efforts by the Member States to meet some of the measures under the Fit for 55 package which were adopted in the course of 2023. Member States are in the process of updating their national energy and climate plans, which should lead in identifying additional emission reduction measures and contribute to closing the remaining gap from the current projections to the target.

Figure 1.1 Total net greenhouse gas emissions and projections, EU



Source: EEA.

Relevance and policy target

- The reduction of GHG emissions is vital to slow the rate of global warming and mitigate its impact on the environment and on human health.
- The EU is a frontrunner in climate ambition, with the [European Climate Law](#) ⁽⁵⁾ setting binding targets to reduce net GHG emissions by at least 55% from 1990 levels by 2030 and to achieve climate neutrality by 2050 in the EU.

Indicator past trend (1990-2022): decrease ↓

Latest value (2022, preliminary): 3,247 million tonnes of net CO₂ equivalent

- Over the 1990-2021 period, net GHG emissions, including from international aviation, fell by 30%, with a further estimated reduction to 31% in 2022.
- The decline since 1990 reflects a shift in energy production methods, with a sharply decreased use of coal and a steadily increasing share of renewable energy. In addition, improved energy efficiency resulted in a reduction in primary energy consumption, while technological innovation led to substantial decreases in GHG emissions linked to specific industrial production processes ⁽⁶⁾.
- In line with the gradual strengthening of policies, a reduction in net GHG emissions has primarily taken place within the past two decades. With the pace of annual emission reductions doubling since 2005 compared to the period from 1990 to 2005, the EU has surpassed its 2020 climate target.

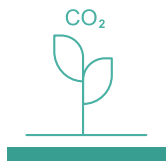
2030 outlook

- Reaching the 2030 climate target demands a further acceleration of emission reductions, requiring a more than threefold increase in the past 10-year average annual rate of net GHG emission reductions.
- At EU level, the Fit for 55 legislation adopted in 2023 should put the EU on track to meet the 55% domestic net GHG reduction target in 2030 compared to 1990, if fully implemented ⁽⁷⁾⁽⁸⁾.
- As of March 2023, Member States projected that their current national policies and measures, with additional planned measures in 18 Member States, would deliver an aggregated 48% reduction in net emissions by 2030, compared with 1990 levels. While this falls short of reaching the target, it reflects an increase in Member State ambition that, in 2022, forecast a 41% reduction in net emissions by 2030. In addition, this year's projections may not fully reflect current efforts by the Member States to meet some of the Fit for 55 Package measures, as these were adopted in the course of 2023 ⁽⁹⁾.
- Member States are currently updating their National Energy and Climate Plans and should deliver final versions in June 2024. These updates should help address the remaining gap to the target.
- Furthermore, the adoption of crucial technologies is rapidly gaining momentum, illustrated by recent and very fast deployment of solar PV, heat pumps and electric cars ⁽¹⁰⁾⁽¹¹⁾⁽¹²⁾. If this trend continues, these technologies will contribute to the required acceleration in emission reduction.

- To meet the target, a significant increase in effort is needed across all socio-economic sectors. In the buildings sector, there is significant cost-effective potential to reduce GHG emissions by 2030. The transport and agricultural sectors also require substantial additional efforts. This includes implementation of planned additional measures in the strategic plans of the Common Agriculture Policy, in order to realise projected emission reductions in line with the 2030 target.



For more references and additional information see the full indicator version.



GHG emissions from land use, land-use change and forestry (LULUCF):

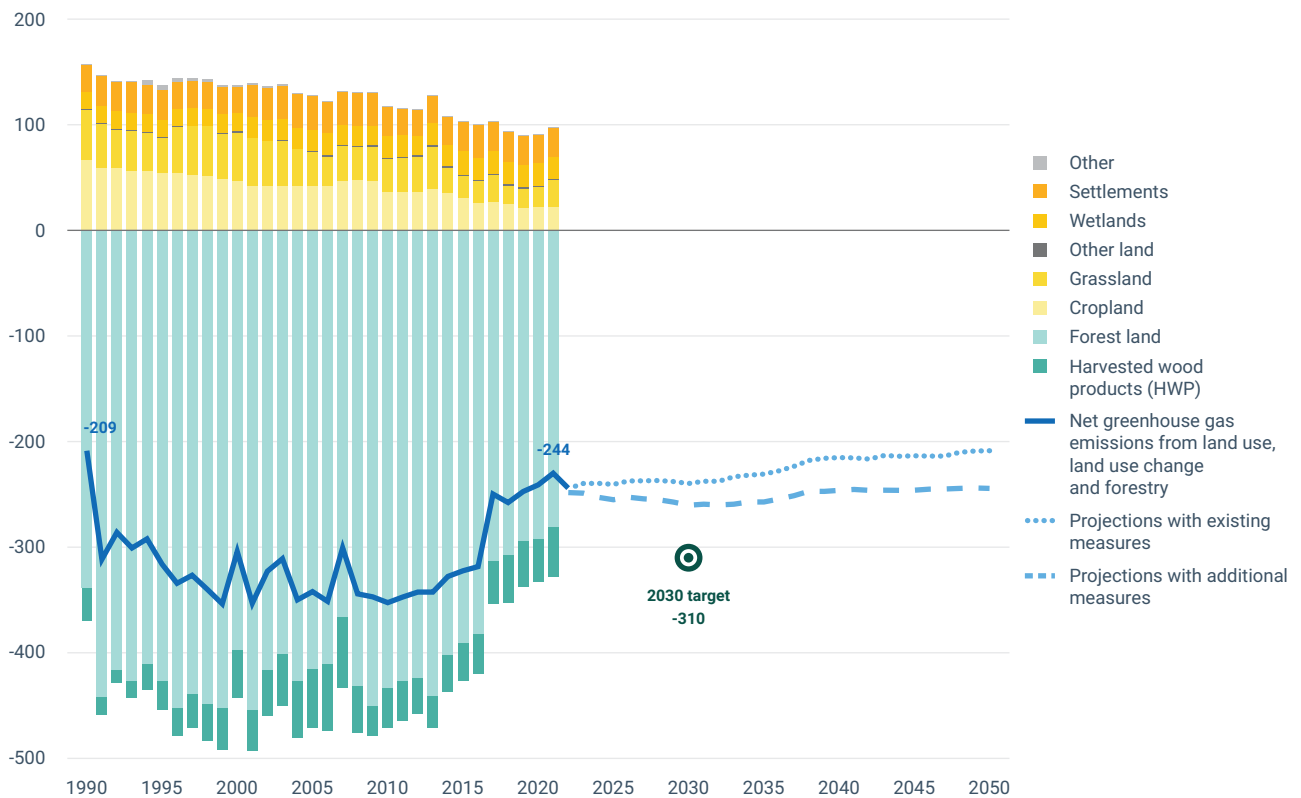
Will the EU increase net GHG removals from the LULUCF sector to -310 million tonnes CO₂ equivalent by 2030?



Very unlikely. In the past 10 years, removal has decreased and Member States' projections show that the planned policies fall short of reaching the target.

Figure 1.2 Greenhouse gas emissions and removals of the land use, land-use change and forestry sector plus projections, EU

Million tonnes of CO₂ equivalent (MtCO₂e)



Source: EEA.

Relevance and policy target

- Mitigating climate change would need both a reduction in greenhouse gas emissions and their removal from the atmosphere to reach climate neutrality by 2050. The land use, land-use change and forestry (LULUCF) sector has the potential to contribute by removing CO₂ from the atmosphere and to reduce emissions in other sectors through substitution.
- The [LULUCF Regulation](#) ⁽¹³⁾ sets a net removal target from the sector of 310 million tonnes of CO₂ equivalent (MtCO₂e) by 2030.

Indicator past trend (2012-2022): decrease ↓

Latest value (2022, preliminary): 244 million tonnes of removed CO₂ equivalent

- In 2021, the EU's LULUCF sector accounted for the net removal of 230 MtCO₂e, equal to 7% of the EU's total GHG emissions. CO₂e removal has decreased in the past 10 years instead of increasing. This was mainly because of increased harvest of wood, partly driven by increased salvage logging and ageing forests as well as the lower sequestration of carbon by ageing forests in some Member States. Nevertheless, preliminary estimates of removal show an increase to 244 MtCO₂e for 2022.

2030 outlook

- It is very unlikely that the target will be met unless additional fast-response mitigation measures are implemented.
- Reaching the target would require reversing the past trend.
- Member State projections submitted in 2023 that take into account existing and intended additional measures suggest that net removal will amount to 240-260 MtCO₂e by 2030 ⁽¹⁴⁾. Despite this increase, the projected removals by 2030 will still fall short of the target by at least 50 MtCO₂e. As the target came into force only on 30 May 2023, some countries may have not yet started establishing the requisite measures and reflecting them in their projections.
- More ambitious removal measures must be implemented to breach the gap. Measures with additional mitigation potential include increased afforestation, decreased deforestation and improved forest management – such as reduction in the annual average of forest area affected by wildfires and biotic damage – fallowing of histosols, rewetting of peatlands, improved crop rotation and improved grassland management. However, for many of the measures, there is a time lag between implementation of a mitigation measure and visibility of its impact.



For more references and additional information, including at country level, see the [full indicator version](#).

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