Climate Action Progress Report 2024

country profile

GREECE

This country profile supports and complement the assessments of the Climate Action Progress Report 2024. It is based on data reported by the EU Member States. It does not replace formal progress assessments.

January 2025

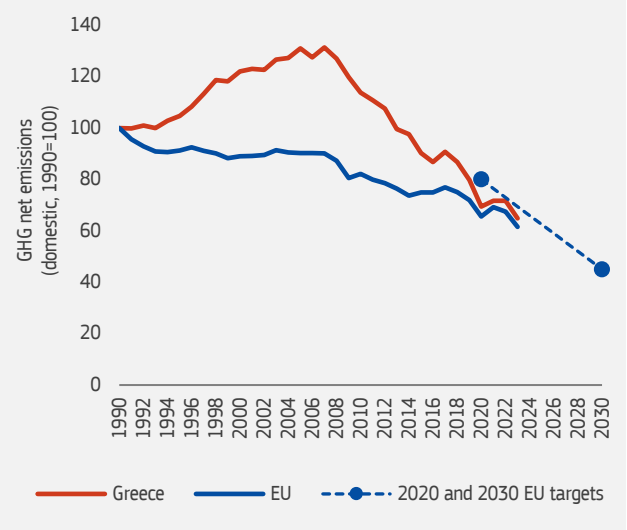
CLIMA

1. Key highlights

- In 2023, GHG emissions in Greece were 71.2 MtCO2-eq, 9.0% lower compared to 2022.
- Net GHG emissions (i.e. including LULUCF) in 2023 were 35% lower than 1990 levels.
- Emissions covered by the Effort Sharing Regulation decreased by 2% compared to 2022.
- 38% of Recovery and Resilience funds and 30% of Cohesion funds are allocated to climate action.

2. Greenhouse gas emissions

In 2023, approximated domestic greenhouse gas (GHG) emissions in Greece were 71.2 MtCO2-eq, 9.0% lower compared to 2022 and 17.5% below pre-pandemic levels. Overall, net domestic emissions, including the Land Use, Land Use Change and Forestry (LULUCF) sector, were 35.1% lower than 1990 levels.

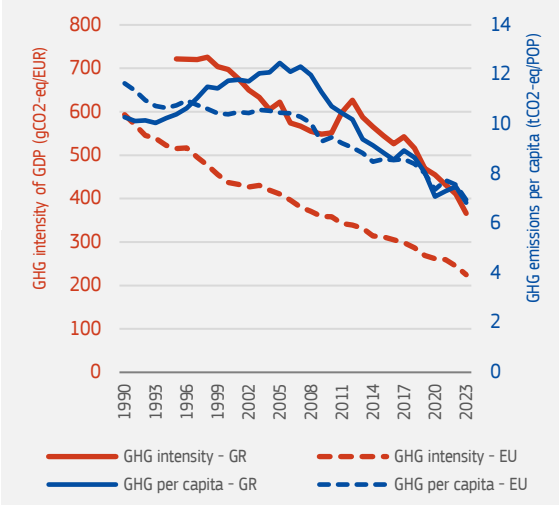


Total domestic GHG emissions					
	$MtCO_2$-eq	*% change*	*% average annual change*		
	1990	1990-2023	1990-2005	2005-2022	2022-2023
Greece	**104**	**-32%**	**1.8%**	**-3.2%**	**-9.0%**
EU	4 867	-36%	-0.5%	-1.7%	-7.6%

Total net domestic GHG emissions (including LULUCF)					
Greece	**102**	**-35%**	**1.8%**	**-3.5%**	**-9.5%**
EU	4 650	-38%	-0.7%	-1.7%	-8.8%

▲ Note: GHG emissions and removals for 1990-2022 are based on data submitted by EU Member States to the UNFCCC under Regulation (EU) No 525/2013. GHG emissions for 2023 are based on approximated GHG inventories.

In 2023, net GHG emissions per capita in Greece were 6.8 tonnes of CO2 equivalent, below the EU average of 6.9 tCO2-eq. In the same year, the GHG intensity of GDP (i.e. net GHG emissions over GDP) was 366 gCO2-eq/EUR, above the EU average of 225 gCO2-eq/EUR.

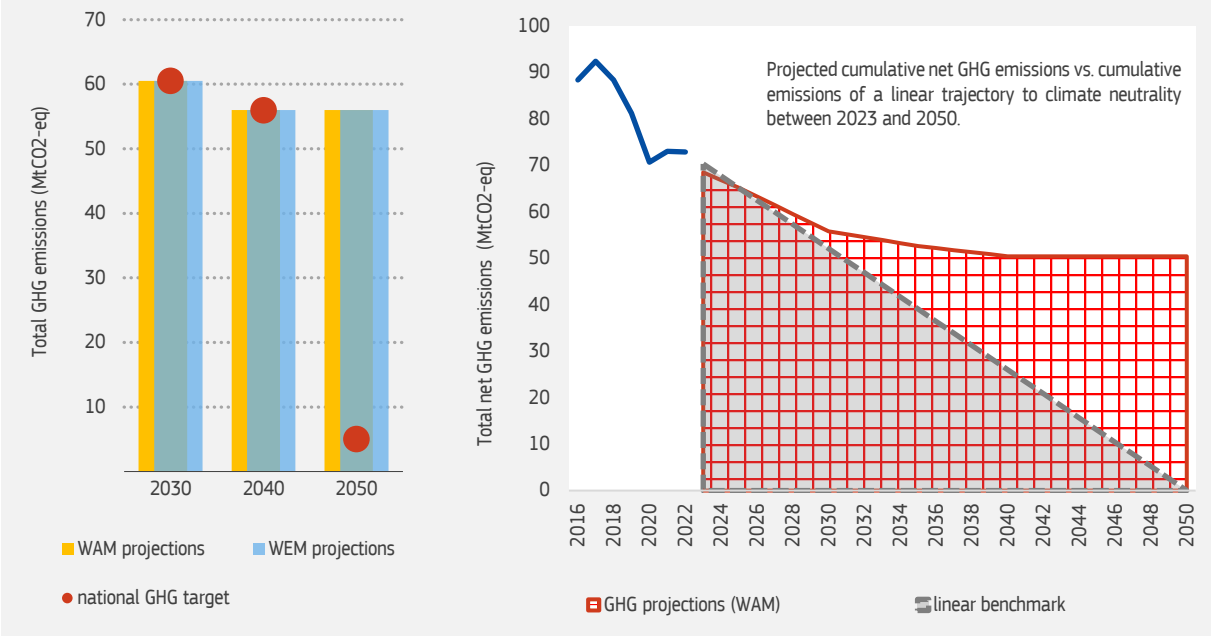


▶ Note: Total net GHG emissions, including LULUCF and excluding international aviation. GHG inventory 1990-2022 and approximated GHG inventory 2023 (EEA). Real GDP in 2015-prices (Eurostat). Population (Eurostat).

In 2024, Greece did not update GHG projections. Under the existing policy scenario (WEM) they point to a reduction in net GHG emissions (including LULUCF) of 45% and 50% by 2030 and 2050, respectively, compared to 1990. Greece did not submit emission projections with additional measures (WAM).

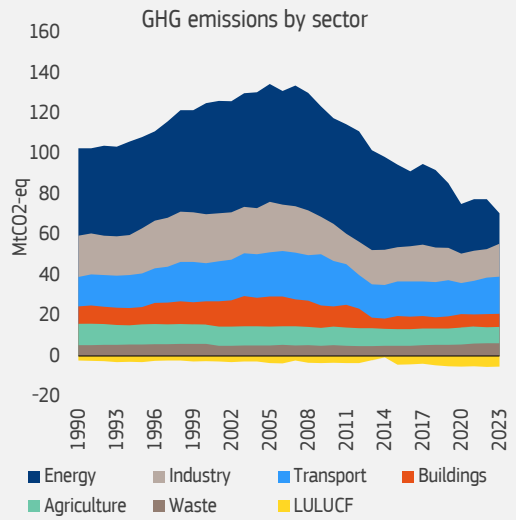
By comparing the cumulative projected net GHG emissions between 2023 and 2050 with a linear trajectory to climate neutrality by 2050, Greece shows an overshoot of 55% (i.e. cumulative projected emissions are higher than those from a linear trajectory).

Projections overshoot
55%



▲ Note: Note: (1) GHG emission projections as updated by 11 Member States in March 2024. (2) WEM = with existing measures; WAM = with existing and additional measures. (3) The national GHG targets are from Member States' submissions of NECP progress reports (Annex I, Table 1). Missing data are replaced by other available reported information. (4) The overshoot metric compares cumulative projected net GHG emissions under the WAM scenario (including LULUCF) with cumulative emissions underlying a linear trajectory from 2021 emissions levels to zero by 2050.

3. Greenhouse gas emissions by sector



	1990-2023 % change	1990-2005	2005-2022	**2022-2023**	EU 2022-2023
		% average annual change			
Energy	-65.2%	2.0%	-4.9%	**-39.2%**	-19.8%
Industry	-20%	1.4%	-3.3%	**14.9%**	-5.5%
Transport	26.4%	2.8%	-1.2%	**2.4%**	-0.8%
Buildings	-23%	3.6%	-4.7%	**1.3%**	-5.6%
Agriculture	-24.0%	-0.8%	-0.9%	**0.4%**	-2.0%
Waste	17%	-0.2%	1.0%	**0.8%**	-1.3%
LULUCF	(absolute change)	(absolute annual change)			
	-3.0	-0.1	-0.1	**0.2**	-20
International aviation	61%	0.3%	2.5%	**1.2%**	9.8%

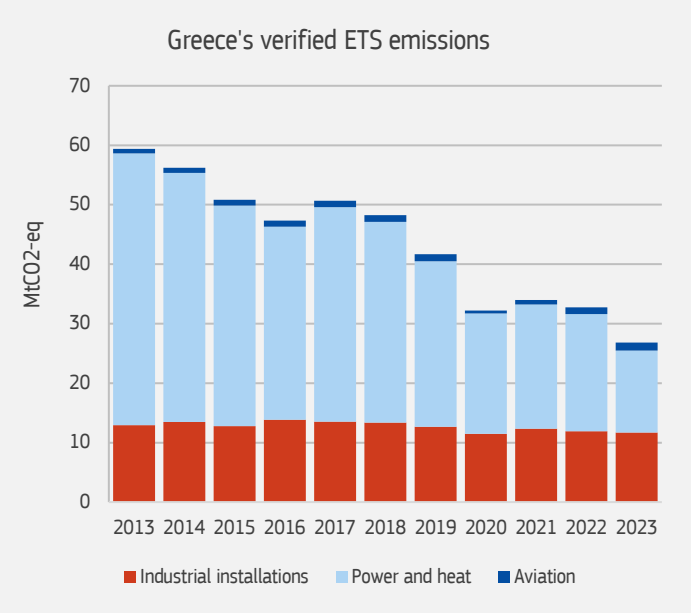
▲ Notes: (1) Energy sector refers to electricity and heat production and petroleum refining. (2) Industry includes fuel combustion in manufacturing and construction and emissions in industrial processes and product use. (3) Buildings includes emissions from energy use in residential and tertiary buildings, and energy use in agriculture and fishery sectors. (4) For LULUCF, the table reports differences between the given years in absolute values (MtCO2-eq). Negative values indicate a reduction of net emissions or an increase in net removals.

In 2023, the highest contribution to GHG emissions in Greece came from the Transport sector (26%), followed by the Industry sector (23%) and the Energy sector (22%).
Between 2005 and 2023, the sectors which contributed the most to the change in net GHG emissions (i.e. -48%) were Energy, for which emissions fell by 74%, and Industry, where emissions fell by 35%.

4. Emissions under the EU Emissions Trading System (ETS)

The EU ETS is an EU-wide market instrument to provide an incentive for emission reductions and transformative investments in the covered sectors. This means that it is largely the market that determines where in the EU the emission reductions take place, outside the control of Member States. However, Member States may adopt complementary (sectoral) policies in addition to the ETS's carbon price signal.

In 2023, stationary installations (118 power generation and manufacturing industries) in Greece emitted 25.5 MtCO2-eq (equal to 33% of total GHG emissions in Greece). This was 19.5% lower compared to 2022 and 37% below pre-pandemic levels. By 2023, emissions from stationary installations were down by 57% against the 2013 level (i.e. -65% to the 2005 level). Aviation emissions covered by the EU ETS were 18.0% higher compared to 2022 and 9.9% above the 2020 level.



▲ (**) ETS emissions from aviation include flights within the European Economic Area (EEA) and outgoing flights to Switzerland and to the UK.

In parallel, Greece has raised over EUR 5.91 billion in auction revenues since 2013 (EUR 1202 million in 2023), available for further climate action and energy transformation. Greece reported that an average of 100% of revenues was spent for climate and energy purposes over the same period.(*)

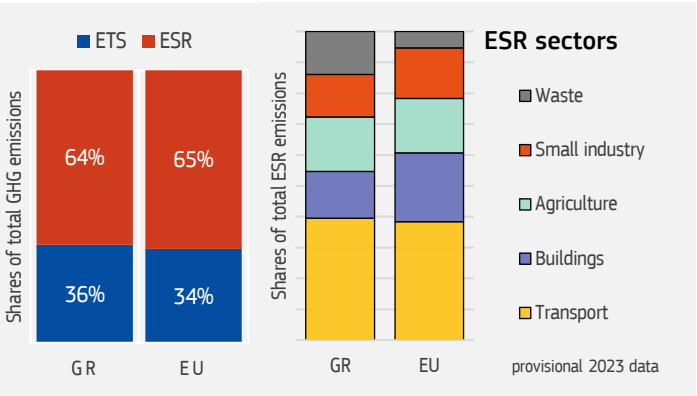
▲ (*) Greece reported spending EUR 264.8 million from its 2023 auction revenue to compensate for indirect carbon costs. This amount was deducted from Greece's total revenue for the purpose of calculating the amount Greece must spend on the purposes of Article 10(3). Almost all revenue to be spent on the purposes of Article 10(3) goes to the Energy Transition Fund for social support and just transition, coordinated by the Greek Renewable Energy Sources Operator and Guarantees of Origin "DAPEEP" (EUR 1 131.7 million).

Verified ETS emissions ($MtCO_2$-eq)				
		2013	2022	2023
Power installations		45.7	19.7	13.8
	% change since 2013	-	*-56.9%*	*-69.9%*
Industrial installations		12.9	11.9	11.7
	% change since 2013	-	*-7.7%*	*-9.4%*
Aviation (**)		0.74	1.14	1.34
	% change since 2013	-	*54.7%*	*82.5%*

5. Emissions in Effort Sharing sectors

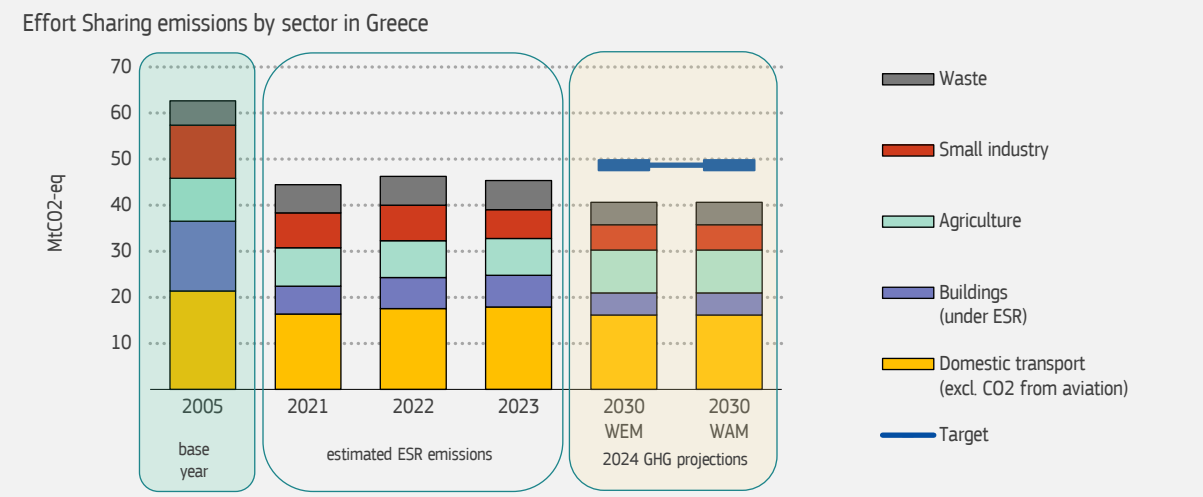
In 2023, approximated emissions under the Effort Sharing Regulation (ESR), which excludes ETS and LULUCF emissions and removals, were 64% of total emissions in Greece compared to 65% for the EU.

In 2023, effort sharing approximated emissions in Greece were 46.3 MtCO2eq, 2.0% lower than in 2022, but 1.3% above the pre-pandemic level.



▲ Notes: (1) Small industry includes emissions from energy industries, manufacturing and construction, and industrial processes, that do not fall under the EU Emission Trading System. (2) Transport includes emissions from domestic transport activities, excluding CO2 emissions from aviation. (3) Buildings includes emissions for heating buildings under the ESR.

In 2023, the largest contribution to the absolute change in ESR emissions came from small industry, for which emissions decreased by 19.2%, and transport, with emissions increasing by 2.2% compared to 2022.
In 2023, small industry accounted for 14% of total ESR emissions in Greece, and transport accounted for 40%.



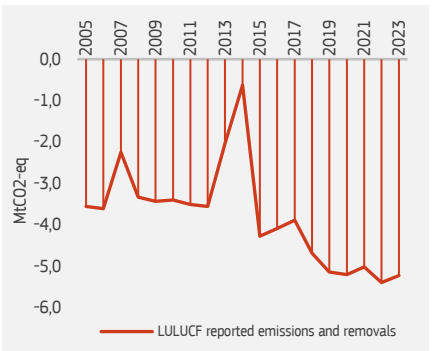
▲ Note: (1) 2023 ESR emissions are based on approximated inventory reports and the European Environment Agency (EEA)'s calculation of ESR emissions. The approximated emissions can, therefore, deviate from Member States' reported emissions. (2) Projections as reported by Member States under Reg. (EU) 2018/1999, compiled and checked by the EEA. (3) WEM = with existing measures, WAM = with existing and additional measures.

The Effort Sharing Regulation (ESR) sets the 2030 ESR emission reduction target for Greece to 23%, compared to 2005 levels. In 2024, Greece did not update GHG projections. Latest GHG projections submitted by Greece under the existing measures scenario (WEM) point to a 36% decrease in ESR emissions by 2030 compared to 2005 levels, more ambitious than its ESR emission reduction target by 13 percentage points. Greece did not submit GHG emission projections considering additional measures (WAM).

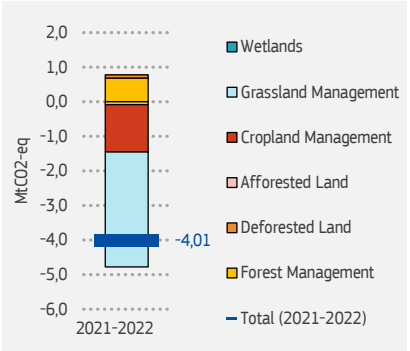
6. Land Use, Land Use Change and Forestry (LULUCF)

Based on final inventory data, in 2022, Greece reported net removals of 5.39 MtCO2-eq in the land use, land use change, and forestry sector (LULUCF). Based on approximated data, in 2023, net removals from the LULUCF sector were 5.22 MtCO2-eq.

1) Reported LULUCF net emissions and removals



2) Period 2021-2025 with accounting rules



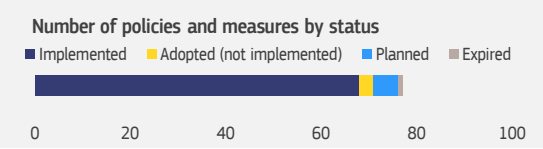
3) Progress towards 2030 target

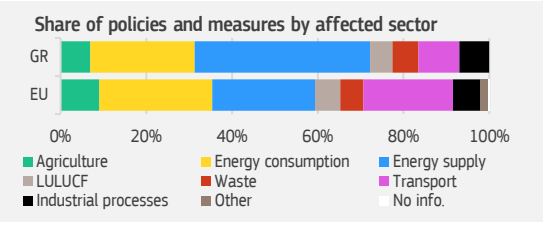
▲ Notes: (1) Figure 1 shows net reported emissions and removals for the LULUCF sector. Net removals are expressed as negative numbers and net emissions as positive numbers. (2) Figure 2 shows the accounted emissions and removals for the LULUCF sector in 2021 and 2022. Computation of the accounts per land use category, applying the standardised rules in the LULUCF Regulation EU) 2018/841. The input data for this analysis have been extracted from the EU Greenhouse Gas Inventory Report 2024 for 1990-2022 based on final Member States' inventory submissions under the EU Governance Regulation (EU) 2018/1999. (3) Figure 3 shows projected progress with existing measures (WEM) and with additional measures (WAM) in relation to the national 2030 target. The LULUCF Regulation sets out binding national 2030 targets for each Member State encompassing all emissions and removals in the LULUCF sector (Art. 4.3). The targets are specified in Annex IIa of the LULUCF Regulation. Individual targets are derived from the EU-wide target of -310 MtCO2-eq net removals by 2030, Member States' average historic net removals from their GHG inventories for the years 2016, 2017 and 2018 and the countries' share of total EU managed land area.

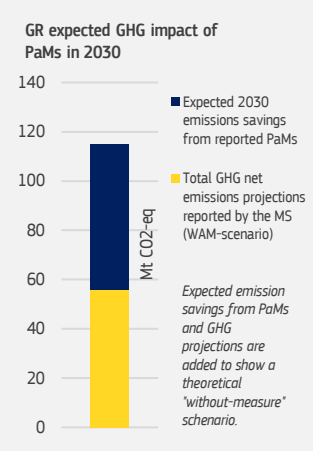
With current LULUCF accounting rules – with a limited scope – applicable to the period 2021 to 2025, the provisional 'accounted' balance for 2021 and 2022 using the 2024 GHG inventory submission produced an accounted credit of 4.0 MtCO2-eq.
Grassland Management and Cropland Management were the dominating land activities, with accounted net removals of 3.3 and accounted net removals of 1.4 MtCO2-eq, respectively.
Latest LULUCF projections for Greece show net removals in 2030 of 4.8 MtCO2-eq with existing measures (WEM), leaving a gap of around 0.2 MtCO2-eq to the estimated 2030 net removal target of 5.0 MtCO2-eq. Greece did not submit projections with additional measures (WAM).

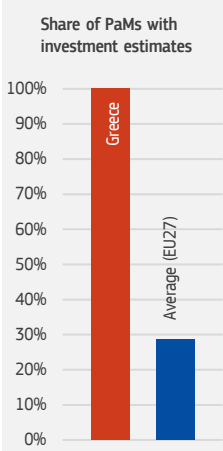
7. Policies and measures

This section uses data reported every two years by EU Member States on their national greenhouse gas policies and measures (Article 18 of the Governance of the Energy Union and Climate Action Regulation). The EEA performs specific quality checks on the submissions by Member States to ensure the accuracy of the reported information on policies and measures. Nonetheless, the analysis suffers from the lack of completeness of reported data.









In 2023, Greece reported 77 single policies and measures (PaMs), representing an increase of 235% compared to 2021. As of 2023, none of the reported PaMs are planned but not yet implemented.

Ex-ante emissions savings

For 22% of its single and group PaMs, Greece estimates the expected emission reduction effect for the year 2030. However, it does not provide such estimates for the year 2040 for any of its PaMs. By implementing these PaMs, Greece estimates emission savings of 59.2 MtCO2-eq in 2030. However, Greece does not provide estimates of emission reductions for 2040.

Investments needs

Greece estimates the investment need for 100% of its single and group PaMs. It estimates the initial investment requirement at EUR 49700 ml. Actual investments up to and including 2021 amount to EUR 3100 ml., with EUR 46000 ml. remaining to be implemented at this date.

More information and visualisations are available at the EEA integrated national energy and climate policies and measures data viewer.

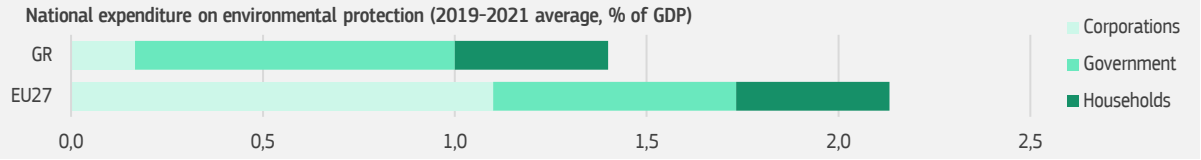
8. Climate-neutrality dashboard

	GHG intensity of GDP (2023)	Projected net GHG emissions by 2030 (tonnes CO2eq per capita)	ESR target vs MS projections (to 2005 level, ppt, "-" = gap)	LULUCF target vs MS projections (tCO2eq/Km2 of land, "-" = gap)	Share of gross final consumption of energy from renewable sources	Projected net GHG emissions by 2050 (tonnes CO2eq per capita)	Overshoot vs. non-linear benchmark (2023-2050)	Target year for climate neutrality (officially reported or "*" other sources))	Legal status of the climate-neutrality target (based on the Net-Zero Tracker)
Greece	**339**	**5.6**	**12.8**	**5**	**23%**	**5.6**	**70%**	**2050**	**In law**
EU27	206	5.0	-6.5	-22	23%	3.3	39%	2050	In law
Changes compared to the 2023 edition									
Greece								*The bars inform whether the indicator has improved or worsened compared to the 2023 edition of the dashboard and the relative magnitude of the change.*	
EU27									

▲ The table above represents an extract of the Climate Neutrality Dashboard as reported in the staff working document accompanying the Climate Action Progress Reports 2024. (1) GHG intensity of GDP (gCO2-eq/EUR2015) uses net GHG emissions (i.e. including LULUCF and excluding international aviation). Real GDP and population data from Eurostat. (2) GHG emission projections as submitted in 2023 (or updated in 2024) by Member States under Art. 18 of the Governance Regulation considering additional measures (WAM). EU Population in 2050 is based on the latest Eurostat population projections. Agriculture and forest land are based on the Eurostat land use statistics. (3) The overshoot against a non-linear indicative benchmark compares the cumulative projected GHG emissions (excluding LULUCF) with an indicative pathway to climate neutrality based on the scenarios proposed by the European Scientific Advisory Board on Climate Change, and then distributed across Member States according to the country's share of EU emissions in the core policy scenario supporting the initiatives delivering the European Green Deal. Projections consider, where available, the impact of both existing and additional policies and measures. (4) Target dates to achieve climate neutrality as in the NECP progress reports or, with an asterisk "*", when from other unofficial sources (Net-Zero Tracker: https://zerotracker.net/).

Climate-Neutrality Levers	EU27	EL	change compared to 2023 for EL	The Climate-Neutrality Dashboard now includes a set of seven new complementary indicators, or levers, to put some light into the level of GHG emissions in Member States:
Zero-Emission Energy	55%	**36%**	●	Share of RES and nuclear in gross electricity and heat production
Greening Industry	43%	**48%**	●	Share of RES and electricity in FEC in manufacturing and construction
Sustainable mobility	130	**129**	●	Average CO_2 emissions of new cars sold
Energy efficient buildings	3.9	**3.6**	●	FEC in buildings, gOE per m^2*HDD and CDD
Waste prevention	511	**510**	●	Municipal waste generation per capita, kg
Climate investment	0.6%	**0.2%**	●	Private Investment in climate change mitigation purposes, % of GDP
Sustainable consumption	13.9	**14.5**	●	Bovine meet consumption per capita, kg

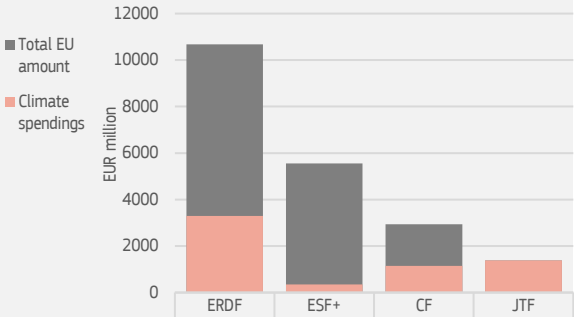
9. Financing climate action



▲ Source: Eurostat -https://ec.europa.eu/eurostat/databrowser/view/env_ac_epneis1__custom_13909199/default/table?lang=en.

Cohesion policy

Climate spendings	Greece	EU
% total allocation	30%	32%



	ERDF	ESF+	CF	JTF
Total EU amount	10.672,0	5.560,4	2.932,7	1.375,1
Climate spendings	3.293,1	344,6	1.153,3	1.375,1
as % of total	31%	6%	39%	100%
Total payments (%)	7%	7%	7%	31%

▲ The chart presents information on investment plans from adopted programmes in 2021-2027 period. It shows only EU contribution. Payments include pre-financing and interim payments.
Source: https://cohesiondata.ec.europa.eu/

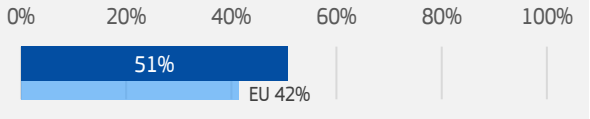
Recovery & Resilience Facility

Allocations (EUR billion)	Grants:	Loans:	% of GDP
	18.2	17.7	16%

Climate (EUR billion)	Expected climate spending:	% of total RRF allocation
	13.7	38%
	EU total climate spendings:	*42%*

▲ Expected climate spendings based on climate tracking.

Total current payment



▲ Disbursement reflects progress in the implementation of the RRF, across the six policy pillars.
Source: https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html?lang=en.

Innovation and Modernisation Fund

Innovation Fund (portfolio of signed projects)

	n.	EUR million
Small-scale projects	1	4.5
Large-scale projects	3	485.1
Auction projects	0	0.0

Modernisation Fund

	n.	EUR million
List of confirmed or approved investment proposals	0	0

Project examples funded by cohesion policy 2014-2020

Buildings	Improvement of the energy performance in households	EUR 600 ml.
Transport	Metro Thessaloniki Base Line (Project 2)	EUR 506.7 ml.
Energy grids	Interconnection of the Cyclades with the high voltage system	EUR 135.6 ml.
Adaptation	Water supply of Heraklion and St. Nikolaou	EUR 44.2 ml.

▲ Source: https://ec.europa.eu/regional_policy/projects_en

Major Innovation Fund projects			
IFESTOS	Carbon capture to produce zero carbon cement & concrete	Cement & lime	EUR million 234.0
IRIS	Low carbon hydrogen and methanol production	Refineries	EUR million 126.8
OLYMPUS	Innovative OxyCalciner technology in cement sector	Cement & lime	EUR million 124.3

▲ Three projects with the highest contribution from the Innovation Fund.
Source: Innovation Fund Project Portfolio - Innovation Fund - Portfolio of signed projects | Sheet - Qlik Sense (europa.eu)

Major Modernisation fund projects		
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

▲ Three projects or schemes with the highest contribution from the Modernisation Fund.
Source: Investments - Modernisation Fund

This country profile supports and complement the assessments of the Climate Action Progress Report 2024. It is based on data reported by the EU Member States. It does not replace formal progress assessments.

Every year, the European Commission publishes the EU Climate Action Progress Report: an annual report on progress towards the EU's emission reduction targets. The report covers actual (historic) emissions and projected future emissions for the EU as a whole and for every EU Member State. It also includes information on different climate policy areas, EU legislative progress, climate finance and adaptation.

With the annual report, the Commission delivers on obligations set out in the Governance Regulation, including to assess progress with the EU 2030 climate target.

You can see latest EU Climate Action Progress Report here: Implementation for a clean and competitive EU economy

"The EU is leading the way in the clean transition, with another year of strong greenhouse gas emission reductions in 2023. The EU now represents 6% of global emissions. At COP29, we once again demonstrated to our international partners that it is possible to take climate action and invest in growing our economy at the same time. Sadly, the report also shows that our work must continue, at home and abroad, as we are seeing the harm that climate change is causing our citizens."

Wopke Hoekstra
Commissioner for Climate Action
European Commission

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