European Environment Agency

Trends and projections in Europe 2026

Technical background document

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Accompanying the report *Trends and projections in Europe 2026*

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This technical background document is organised in two main parts. Chapter 1 summarises the EU and national climate and energy targets used in the assessment, including the relevant milestones, contributions and compliance frameworks. Chapter 2 explains the data sources, reporting processes and methodological choices underpinning the indicators and progress-to-target analysis. The abbreviations and references sections support consultation of individual topics without requiring the document to be read sequentially.

1 Targets

The Trends and projections in Europe 2026 report assesses progress towards the 2030 climate and energy targets using the most recent information available. The assessment combines official 2024 data on GHG emissions, energy consumption and renewable energy shares with approximated 2025 data. These data are used to examine the pace and direction of GHG emissions reductions, renewable energy deployment and energy-efficiency improvements.

2030

The current EU target is to reduce net GHG emissions by at least 55% by 2030 compared with 1990. Set in 2021, it was submitted as the EU's updated nationally determined contribution under the United Nations Framework Convention on Climate Change (UNFCCC) (Council of the European Union, 2020) and is enshrined in the European Climate Law (ECL) (EU, 2021). It replaced the previous binding target of a minimum 40% reduction by 2030 compared with 1990 (EC, 2014), which had been submitted to the UNFCCC as the EU's first nationally determined contribution (EC, 2015). The Trends and projections in Europe 2026 report assesses how current trends and future developments may contribute to achieving the EU-level targets for GHG emissions, renewable energy and energy efficiency, as well as Member State targets for GHG emissions.

The Fit for 55 package introduces ambitious policies aimed at accelerating the reduction of GHG emissions, fostering the adoption of renewable energy sources, and enhancing overall energy efficiency by 2030. With respect to this report, adopted amendments to legislation on effort sharing, emission trading, and land use, land use change and forestry (LULUCF) are highly relevant. Two further key pieces of legislation addressing the energy dimension—the revised Energy Efficiency Directive (EED) and Renewable Energy Directive (RED)—have also been adopted. Both set ambitious targets for 2030.

With these revisions, the current 2030 targets for GHG emissions, renewable energy and energy efficiency at the EU level are:

- A target of at least a net 55% reduction in the EU-27's GHG emissions (compared with 1990 levels). The maximum contribution of natural sinks from the LULUCF sector to this target is limited to -225 Mt CO_2e. A binding emission cap is set for the sectors covered by the EU ETS (EU, 2023b) and binding annual targets for reducing GHG emissions from 2021 to 2030 are set for EU Member States under the Effort Sharing legislation, covering domestic transport (excluding CO_2 emissions from aviation), buildings, agriculture, small industry and waste (EU, 2023e). Furthermore, the revised LULUCF Regulation (EU, 2023d) sets an EU-level target to increase net removals in LULUCF by -42 MtCO_2e compared to the average yearly net removal in the period 2016-2018. This target is distributed among Member States through national targets (see below). The former national 'no debit' target where 'EU Member States have to ensure that accounted GHG emissions from land use, land use change or forestry are offset by at least an equivalent removal of CO_2 from the atmosphere' now only applies for the period 2021-2025.

- A binding target to increase the share of energy from renewable sources in the EU-27 to 42.5% of gross final energy consumption by 2030, with an additional top-up of 2.5% (Council of the European Union, 2020).

- A target of at least an 11.7% reduction in EU energy consumption by 2030 at EU level (compared with the Commission's 2020 reference scenario)(EU, 2023c). This is spelled out as a binding EU final energy consumption target of no more than 763Mtoe in 2030 and an indicative target for primary energy consumption amounting of no more than 992.5Mtoe in 2030.

National, non-binding contributions in the areas of renewable energy deployment and energy efficiency contributions have been set by Member States in the context of their national energy and climate plans (NECPs). Updated final NECPs have been adopted in 2024 (and in 2025 for Belgium and Estonia and in 2026 for Poland). They were assessed by the European Commission (EC) in 2025 (EC, 2025c, 2025b) and in 2026 (EC, 2026) for the later plans. A Commission assessment of Poland's adopted plan is not yet available.

Effort Sharing Regulation

The Effort Sharing Regulation (ESR) sets emissions reduction targets for each Member State for the year 2030, compared to ESR base-year emissions in 2005, as well as emission limits for 2021-2030 (Regulation (EU) 2018/842 as amended by Regulation (EU) 2023/857, the Effort Sharing Regulation). Binding annual GHG emissions targets for Member States for the period 2021-2030 are laid down in Commission Implementing Decision (EU) 2026/895 (EU, 2026a). The 2023 amendment to the ESR increased the EU-wide GHG emissions reductions target from 29% (for the EU-27) to 40% by 2030, compared to 2005 levels, with respective revisions of Member State targets for 2030. The resulting 2030 GHG emissions targets for Member States range from -10% to -50%, compared with 2005 base year levels. The ESR is the follow-up to the Effort Sharing Decision, which established national emissions targets for Member States in effort sharing sectors between 2013 and 2020. Iceland and Norway also implement the Effort Sharing Regulation.

LULUCF Regulation

The Regulation on emissions and removals from LULUCF ((EU) 2018/841 amended by (EU) 2023/839), provides a system aimed at improving the natural sink. The EU Climate Law (ECL) sets net climate targets, thereby integrating the LULUCF sector in the EU's climate governance. For 2030, the ECL has capped the contribution from LULUCF to the economy-wide target to reduce emissions by -55% to -225 Mt CO2e, meaning additional removals from LULUCF would result in a higher overall reduction. (). For 2030, the EU has set an EU-level target to increase net removals in LULUCF by -42 Mt CO_2e compared to the average yearly net removal in the period 2016-2018. This target is distributed among Member States through national targets (Annex IIa LULUCF Regulation). The national targets require each Member State to increase its climate ambition and implement additional agriculture and forestry policies. To enhance the accuracy of the GHG inventory data, Member States continuously improve their inventory methodologies. Such methodological improvements need to be reflected in the entire time-series to ensure consistency and comparability of the historical trend, hence all years are re-estimated. Based on

data reported by Member States in 2020, the EU target of generating an additional -42 MtCO2e of net removals by 2030 was expected to result in total net removals at EU level of -310 MtCO2e.

With the revision of the LULUCF Regulation in 2023, the governance framework is now divided into two compliance periods.

The LULUCF Regulation sets an accounting framework for the years 2021-2025 for GHG emissions and removals from forest land, forest products, cropland, grasslands, and land conversions to and from wetlands and settlements. For the 2021-2025 period, Member States must meet a national 'no debit' target, ensuring that accounted GHG emissions from land use, land use change or forestry do not exceed total accounted removals. Compliance with this target will be checked in 2027 based on accounted emissions and removals, representing the quantities used to determine compliance, after the application of accounting rules provided by the LULUCF Regulation per land use category (e.g., accounting based on historical benchmarks). This means the reported (preliminary) GHG inventory data shown in this report cannot be directly used to determine a country's status in respect of the no-debit target.

For the 2026-2030 period, compliance will be simplified by moving from activity-based accounting to reported emissions and removals. In addition to individual Member State targets, national net-removal budgets have been defined for 2026-2029 under Implementing Regulation (EU) 2026/893. Some flexibilities are available to support compliance with both the target and the budget, as described below. The final 2030 values and budget will, however, be established using the inventory submitted in 2032. This will neutralise baseline recalculations resulting from methodological improvements to Member States' GHG inventories since 2020 and their possible effect on collective achievement of the Union target (Article 14 of the LULUCF Regulation and recital 19 of Regulation (EU) 2023/839). In the Trends and projections report, Figure 1.2 presents an adjusted 2030 endpoint calculated as the adjusted baseline from the latest GHG inventory submission (2026) plus the sum of national targets (-42 Mt CO2e). The LULUCF Regulation provides for a similar adjustment in the 2032 compliance assessment, using that year's GHG inventory data. At Member State level, the progress-to-target analysis in Figure 3.4 compares net LULUCF progress in 2024 with the reference-period average reported in the latest GHG inventory submission (EEA, 2026a).

To achieve their LULUCF targets in both periods, Member States may use certain flexibilities, including the use of AEAs if the ESR has a surplus, transfer of LULUCF units among Member States, and limited compensation of emissions from natural disturbances and – for the second compliance period – effects from climate change. For the first compliance period, also a restricted number of accounted emissions in managed forest land can be compensated. In both compliance periods until 2030, if Member States do not comply with their targets under LULUCF, the deficit must be balanced within the ESR. Flexibilities for the second compliance period will only be calculated in 2032 and are in this report not considered in the analysis of the progress to EU or national 2030 targets.

Renewable energy

In June 2018, the EU endorsed an EU-level, binding renewable energy target for 2030 of at least 32% of the gross final energy consumption (EU, 2018a). As a result of the Fit-for-55 Package and the REPowerEU plan — part of a series of measures to reduce the EU's dependence on Russian fossil fuels (EC, 2022) — proposed in May 2022 by the EC, the EU-wide share of renewable sources was increased to 42.5% by 2030, with an additional top-up of 2.5% (Council of the European Union, 2023). The RED recast with this new target was adopted in 2023. This target will be reached through the collective efforts of all Member States, and countries are free to set their own national contributions.

Under the Regulation on the Governance of the Energy Union and Climate Action (Regulation (EU) 2018/1999) (EU, 2018b), Member States presented their NECPs which they updated in 2024 (and some in 2025 and one in 2026). These include planned national objectives, targets and contributions related to all dimensions of the Energy Union, together with planned policies and measures and the anticipated investment needed to meet the national targets, objectives and contributions. For renewable energy, these included not only 2030 contributions but also indicative trajectories from 2021 onwards, with reference points in 2022, 2025 and 2027 (Art. 4.2 of the Governance Regulation).

The 2022 and 2025 milestones for energy from renewable sources

The Governance Regulation requires each Member State's indicative renewables trajectory to reach, by 2022 and 2025, reference points of at least 18% and 43%, respectively, of the total increase between its binding 2020 national target and its planned contribution for 2030. The 2022 milestones for each Member State were calculated with an interim trajectory between the 2020 targets and the 2030 contributions as outlined in the Member States' NECPs submitted in 2019 under the Governance Regulation and as published in the European Commission's assessment of the national energy and climate plans (EU, 2020) (see table A1.3). The 2025 milestones were calculated with an interim trajectory between the 2020 targets and the 2030 contributions as outlined in the Member States' updated NECPs and assessed in EC (2025a).

Table A1.1

	2022	**2025**
percent on gross final energy consumption		
EU-27	24.1%	29.7%
Austria	36.2%	43.9%
Belgium	13.8%	16.2%
Bulgaria	18.0%	24.1%
Croatia	23.0%	29.7%
Cyprus	14.8%	21.6%
Czechia	14.6%	20.4%
Denmark	34.5%	42.0%
Estonia	28.1%	42.2%

Finland	40.3%	48.3%
France	24.8%	28.2%
Germany	20.2%	27.9%
Greece	21.1%	28.8%
Hungary	14.4%	20.3%
Ireland	19.3%	27.6%
Italy	19.3%	26.6%
Latvia	41.8%	49.0%
Lithuania	27.0%	36.8%
Luxembourg	13.5%	22.2%
Malta	10.3%	16.2%
Netherlands	16.3%	24.8%
Poland	16.1%	22.6%
Portugal	33.9%	39.6%
Romania	25.2%	30.1%
Slovakia	14.9%	18.7%
Slovenia	25.4%	28.4%
Spain	24.0%	32.0%
Sweden	51.9%	56.7%

Sources: EU (2020), EC (2025a)

2030 targets for energy from renewable sources

The 2030 RES national contributions towards the EU targets for each Member State are obtained from the final updated NECPs. Where these were not available, the values were gap filled using national contributions calculated with the formula set out in the RED and reported in the European Commission's EU-wide assessment (EC, 2025c). The resulting national contributions values are displayed in Table A1.2.

The report also presents data on RES deployment on a sectoral level (for electricity, heating and cooling, and transport). These data are based on Eurostat's SHARES tool 2025 (Eurostat, 2026a). Approximate 2025 values were estimated by the EEA (EEA, 2026c).

Biomass

Bioenergy is used in different ways to replace fossil fuel use. More than two-thirds of bioenergy is produced from solid biomass, of which around 90% is related to forest biomass**.** The most common uses of solid biomass are for residential heating, and district heating, followed by electricity generation and (thermal) energy use in industrial processes. Increasing forest biomass demand, including for supplying energy, represents one driver for decreasing forest carbon sinks in Europe. Gaseous biomass (biogas) is used to replace fossil gas uses, either for combined heat and power, balancing the electricity grid or upgrading to biomethane. Liquid biofuels are mainly used directly or blended with gasoline and diesel in transport.

To mitigate potential climate and environmental risks, EU policies require operators to ensure compliance with certain sustainability criteria, such as for eligibility for state aid and to account bioenergy to the Union's renewable energy target.

Energy efficiency

The revised Energy Efficiency Directive (EED) (EU) 2023/1791, which entered into force in October 2023, requires an additional reduction in EU energy consumption of at least 11.7% by 2030 compared with the level of effort under the 2020 EU Reference Scenario (EU, 2023d). As a result, EU energy consumption in 2030 should not exceed 992.5 million tonnes of oil equivalent (Mtoe) for primary energy consumption (PEC) and 763 Mtoe for final energy consumption (FEC). This ambition builds on the political agreement reached on 14 June 2018 by the EC, the European Parliament and the European Council, which set a binding EU energy-efficiency target of 32.5% compared with the 2007 baseline scenario and allowed for an upward revision by 2023 (EU, 2018a). Under the Governance Regulation (EU, 2018b), Member States set indicative national contributions based on primary or final energy consumption, primary or final energy savings, or energy intensity, together with indicative trajectories from 2021 based on their contributions to the 2020 and 2030 EU targets. The Fit for 55 package increased the level of effort in line with the more ambitious GHG emissions reduction target, while the REPowerEU plan, presented in May 2022, proposed further ambition to reduce the EU's reliance on fossil-fuel imports from Russia (EC, 2022).

Member States contribute to the realisation of the European targets by providing indicative national 2030 contributions based on both final and primary energy consumption, accompanied by indicative trajectories for each. The FEC trajectories are available in Table A1.4. The revised EED provides a comprehensive list of factors and national characteristics that Member States can consider when calculating their contributions. Importantly, they can utilise a formula designed to enable Member States to determine their contributions in a fair and feasible way (see Annex I of the revised EED). The Member States' contributions to the energy consumption targets for 2030 were reported in the communication from the Commission in May 2025 (EC, 2025c). The revised directive also includes an enhanced 'gap-filling mechanism' that will be triggered if countries fall behind in delivering their national contributions.

Overview of national 2030 targets

Table A1.2 provides an overview of the EU's climate and energy targets. Tables A1.3 and A1.4 present national targets and contributions for the topic areas covered in the Trends and projections in Europe 2026 report: GHG emissions, renewable energy and energy efficiency. Together, the tables consolidate the information presented throughout the report and provide a comprehensive reference.

Table A1.2: Main EU-wide climate and energy targets for 2030

ETS target	ESR target[(a)]	LULUCF target	Renewable Energy share	Primary energy consumption	Final energy consumption
Mt CO_2e	Mt CO_2e	Mt CO_2e in addition to the av. 2016-2018	Percent	Mtoe	Mtoe

840	1,514	-42	42.5	993	763

Note: ETS target is author's compilation and includes stationary installations, aviation and maritime shipping; [a)] ESR target based on EU (2026a); The LULUCF target is the sum of Member States' targets (see Table A1.3).

Sources: EU (2023b, 2023d, 2023e, 2026a).

Table A1.3 Main national climate targets

Country	Participation in EU-ETS	ESR target ESR target	2005 ESR base-year emissions	LULUCF target[(a)]
		Percent changes vs. 2005	Mt CO_2e	Kt CO_2e
Austria	x	-48.0	57.0	- 879
Belgium	x	-47.0	81.6	- 320
Bulgaria	Since 2007	-10.0	22.3	- 1163
Croatia	Since 2013	-16.7	18.1	- 593
Cyprus	x	-32.0	4.3	- 63
Czechia	x	-26.0	65.0	- 827
Denmark[(b)]	x	-50.0	40.4	- 441
Estonia	x	-24.0	6.2	- 434
Finland	x	-50.0	34.4	- 2889
France	x	-47.5	401.1	- 6693
Germany	x	-50.0	484.7	- 3751
Greece	x	-22.7	63.0	- 1154
Hungary	x	-18.7	47.8	- 934
Ireland	x	-42.0	47.7	- 626
Italy	x	-43.7	343.1	- 3158
Latvia	x	-17.0	8.6	- 639
Lithuania	x	-21.0	13.1	- 661
Luxembourg	x	-50.0	10.1	- 27
Malta	x	-19.0	1.0	- 2
Netherlands	x	-48.0	128.1	-435
Poland	x	-17.7	192.5	- 3278
Portugal	x	-28.7	48.6	- 968
Romania	Since 2007	-12.7	78.2	- 2380
Slovakia	x	-22.7	23.1	- 504
Slovenia	x	-27.0	11.8	- 212
Spain	x	-37.7	242.0	- 5309
Sweden	x	-50.0	43.2	- 3955
Iceland	Since 2013	-33.0	3.1	
Liechtenstein	Since 2008			
Norway	Since 2008	-40.0	28.9	
Switzerland	Since 2021			

Notes: [(a)] Additional net removals in comparison to the yearly average of the reference period 2016-2018; [(b)] The Faroe Islands and Greenland are not part of the EU and therefore are not covered by the targets presented here.

Sources: EU (2020, 2023d, 2023e).

Table A1.4 Main national 2030 energy contributions to the EU-wide targets

Country	Renewable energy share	Primary energy consumption	Final energy consumption	Renewable energy share	Primary energy consumption	Final energy consumption
	As reported in final updated NECPs (or gap-filled, see notes)			2030 contributions, in line with formula		
	Percent	Mtoe	Mtoe	Percent (%)	Mtoe	Mtoe
Austria	57.0	25.9	21.59	57.0	24.0	20.2
Belgium	20.4	41.3	28.97	33.0	34.7	28.8
Bulgaria	34.9	13.2	8.82	33.0	14.2	8.3
Croatia	42.5	8.1	5.88	44.0	6.7	5.8
Cyprus	33.0	2.0	1.80	33.0	1.9	1.7
Czechia	30.1	29.2	20.35	33.0	29.2	20.4
Denmark	58.0	15.4	13.73	60.0	14.7	12.7
Estonia	65.0	5.5	2.54	50.0	3.1	2.5
Finland	62.0	30.7	20.60	62.0	29.7	20.4
France	35.0	158.6	106.93	44.0	158.7	106.9
Germany	41.0	193.6	155.55	41.0	191.1	154.8
Greece	43.0	17.8	15.20	39.0	17.6	14.7
Hungary	30.0	24.1	17.67	34.0	23.4	16.1
Ireland	43.0	11.3	10.45	43.0	11.3	10.5
Italy	39.4	123.3	101.70	39.0	111.2	92.9
Latvia	61.0	3.9	3.46	61.0	3.8	3.5
Lithuania	55.0	5.4	4.38	49.0	5.4	4.4
Luxembourg	37.0	3.3	3.18	37.0	2.8	2.7
Malta	24.5	1.0	0.80	28.0	0.8	0.7
Netherlands	39.0	46.2	38.43	39.0	45.3	38.1
Poland	32.6	79.9	58.53	32.0	79.9	58.5
Portugal	51.0	16.7	14.37	51.0	16.7	14.4
Romania	38.3	28.7	22.50	41.0	28.9	21.6
Slovakia	25.0	16.4	9.63	35.0	13.9	8.6
Slovenia	33.0	6.0	4.32	46.0	5.7	4.3
Spain	47.9	98.4	71.71	43.0	82.2	64.9
Sweden	67.0	41.2	30.09	76.0	35.8	24.7

Notes: The 2030 contributions for renewable energy and energy consumption listed in the table are from Member States' final updated NECPs submitted to the European Commission up to October 2025. The table includes Belgium's and Estonia's values from their 2025 updated NECPs. Poland submitted a final updated NECP in June 2026, however a Commission assessment of the country's NECP is not available yet, therefore Poland's values reflect the 2025 Commission assessment (EC, 2025c).

In addition, RES targets calculated using the formula in the Governance Regulation are displayed.

Sources: EC (2025c).

Table A1.5 National energy trajectories to the 2030 national contributions to the 2030 EU-wide targets

Country	Final energy consumption Mtoe										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Austria	26.8	26.7	26.0	25.4	24.8	24.1	23.5	22.9	22.3	21.6	26.8
Belgium	34.4	32.0	31.3	31.7	31.4	31.1	31.0	30.2	29.5	29.0	34.4
Bulgaria	10.2	9.8	9.8	9.7	9.4	9.3	9.1	9.0	8.9	8.8	10.2
Croatia	7.0	6.9	6.7	6.6	6.5	6.4	6.2	6.1	6.0	5.9	7.0
Cyprus	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7
Czechia	25.2	24.0	23.6	23.1	22.6	22.2	21.7	21.3	20.8	20.4	25.2
Denmark	13.7	13.6	13.9	13.9	13.8	13.8	13.8	13.8	13.8	13.7	13.7
Estonia	2.8	2.8	2.6	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.8
Finland	24.4	22.9	22.6	22.3	22.0	21.7	21.5	21.2	20.9	20.6	24.4
France	140.0	135.2	131.7	128.2	124.6	121.1	117.5	114.0	110.5	106.9	140.0
Germany	201.9	196.9	191.8	192.0	189.9	183.0	176.1	169.2	162.4	155.5	201.9
Greece	15.2	16.2	16.2	16.2	16.3	16.3	16.0	15.7	15.5	15.2	15.2
Hungary	18.8	18.0	17.9	17.9	17.8	17.8	17.8	17.8	17.7	17.7	18.8
Ireland	11.4	12.0	12.4	14.1	14.4	13.6	12.8	12.0	11.2	10.5	11.4
Italy	113.0	111.7	110.8	110.8	109.1	107.6	106.1	104.7	103.2	101.7	113.0
Latvia	4.1	3.9	3.9	3.8	3.8	3.7	3.6	3.6	3.5	3.5	4.1
Lithuania	5.7	5.4	5.3	5.1	5.0	4.9	4.8	4.6	4.5	4.4	5.7
Luxembourg	4.1	3.7	3.6	3.7	3.6	3.5	3.4	3.4	3.3	3.2	4.1
Malta	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.6
Netherlands	45.3	41.6	41.2	40.8	40.4	40.0	39.6	39.2	38.8	38.4	45.3
Poland	74.3	75.4	75.7	76.0	76.0	72.5	69.0	65.5	62.0	58.5	74.3
Portugal	15.7	16.9	14.8	14.8	14.7	14.7	14.6	14.5	14.5	14.4	15.7
Romania	25.3	23.9	23.8	23.7	23.6	23.4	23.2	22.9	22.7	22.5	25.3
Slovakia	10.5	9.9	9.8	9.8	9.8	9.7	9.7	9.7	9.7	9.6	10.5
Slovenia	4.8	4.8	4.8	4.8	4.8	4.7	4.6	4.5	4.4	4.3	4.8
Spain	84.1	82.6	81.1	79.7	78.2	76.9	75.6	74.3	73.0	71.7	84.1
Sweden	30.9	31.0	30.9	30.8	30.6	30.5	30.4	30.4	30.2	30.1	30.9

Notes: The national indicative trajectories for final energy consumption are provided by the European Commission. Member States needed to notify their 2030 indicative FEC contribution and the respective indicative trajectory towards it in their final updated NECP. For those Member States that notified a trajectory the calculation is based on it. For MS that did not notify a trajectory the Commission proposed to calculate linear trajectories using the real consumption of 2022 as the starting point and the 2030 indicative FEC contribution as the end point. The choice of 2022 corresponds to the latest year for which official statistics were available during the compilation of the updated NECPs (2024).

Sources: EC and DG ENER (forthcoming)

Table A1.6 Cumulated differences between ESR emissions and AEA trajectories 2021 to 2030 related to ESR base year emissions.

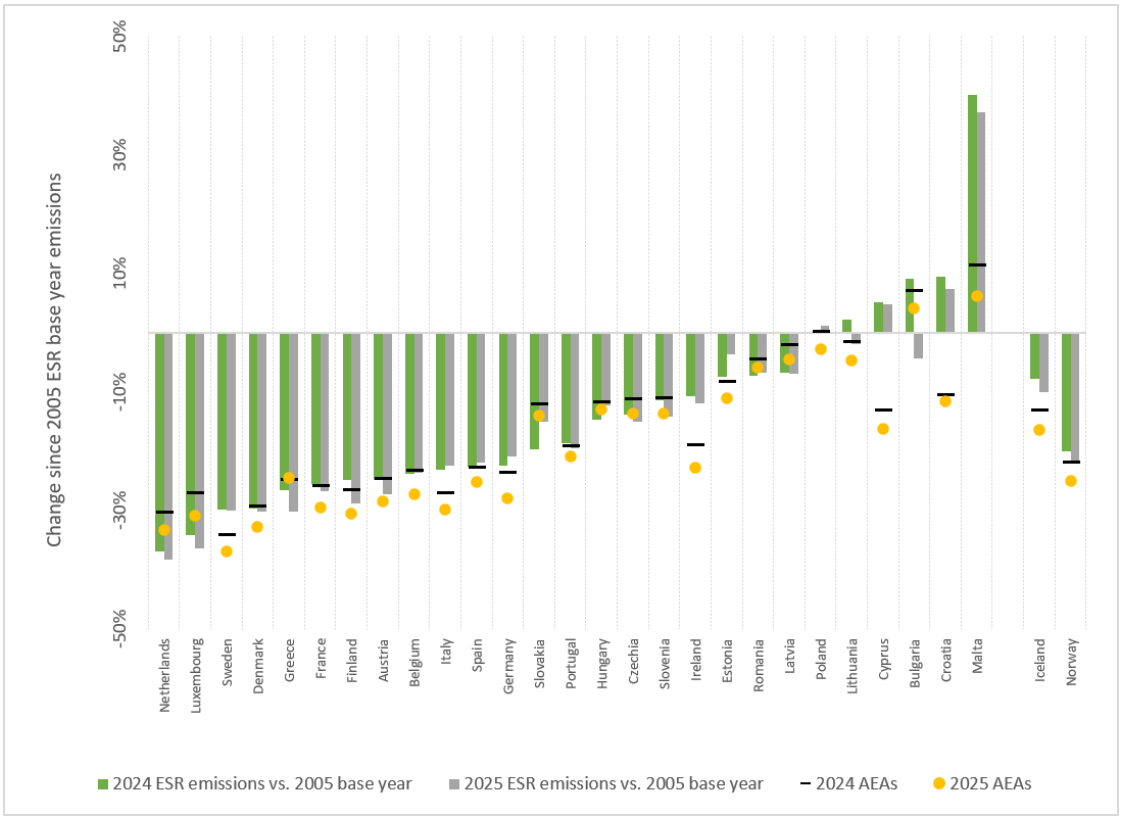
	Estimated ESR GHG emissions				Esti-mated ESR emis-sions	Projected ESR-emissions (with additional measures-scenario)				
Country	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
EU-27	4%	7%	9%	9%	5%	6%	6%	6%	5%	4%
Austria	-1%	0%	2%	2%	0%	-2%	-6%	-11%	-18%	-26%
Belgium	4%	11%	16%	16%	13%	12%	10%	8%	4%	0%
Bulgaria	8%	10%	12%	10%	18%	38%	59%	82%	106%	131%
Croatia	2%	-6%	-19%	-39%	-58%	-53%	-48%	-43%	-38%	-34%
Cyprus	-7%	-17%	-31%	-50%	-71%	-74%	-80%	-84%	-90%	-96%
Czechia	11%	16%	22%	24%	25%	33%	41%	50%	59%	70%
Denmark	-1%	-1%	0%	0%	-3%	1%	4%	7%	10%	13%
Estonia	8%	12%	16%	15%	8%	9%	10%	10%	10%	8%
Finland	4%	8%	10%	8%	7%	7%	5%	5%	2%	-3%
France	1%	4%	6%	6%	3%	6%	8%	9%	9%	7%
Germany	4%	8%	11%	10%	3%	-4%	-14%	-26%	-39%	-53%
Greece	3%	5%	7%	9%	15%	23%	34%	49%	66%	87%
Hungary	8%	6%	10%	13%	13%	18%	23%	30%	37%	45%
Ireland	-3%	-7%	-12%	-20%	-31%	-36%	-44%	-56%	-71%	-89%
Italy	0%	0%	0%	-4%	-11%	-11%	-10%	-11%	-12%	-14%
Latvia	24%	30%	36%	40%	43%	49%	55%	59%	61%	62%
Lithuania	18%	21%	23%	19%	16%	11%	6%	3%	0%	-1%
Luxembourg	2%	12%	20%	27%	33%	38%	43%	48%	53%	58%
Malta	73%	51%	29%	1%	-30%	-55%	-75%	-104%	-144%	-192%
Netherlands	4%	13%	20%	27%	32%	32%	31%	30%	29%	28%
Poland	5%	10%	12%	12%	8%	11%	14%	16%	17%	17%
Portugal	6%	9%	9%	9%	7%	20%	32%	44%	56%	68%
Romania	19%	25%	31%	33%	34%	41%	48%	56%	66%	76%
Slovakia	13%	19%	23%	31%	32%	34%	37%	40%	43%	47%
Slovenia	8%	11%	15%	15%	16%	14%	13%	13%	14%	16%
Spain	3%	5%	8%	8%	4%	12%	19%	27%	35%	43%
Sweden	4%	11%	18%	14%	7%	1%	-4%	-10%	-15%	-20%
Iceland	0%	-2%	-6%	-11%	-17%	-19%	-22%	-23%	-25%	-27%
Norway	-1%	-4%	-7%	-9%	-9%	-5%	0%	7%	14%	23%
Total	4%	7%	9%	8%	5%	6%	6%	6%	5%	4%

Sources: EEA (2026e, 2026d, 2026h), EU (2023a, 2026a).

Table A 1.4. shows the cumulative balance of AEAs and estimated ESR emissions, developing over the period 2021-2030. The percentages express the differences between the cumulative AEAs and emissions up to the relevant years related to the respective 2005 baseline emissions for each country. Positive values indicate a cumulative surplus of AEAs, while negative values

indicate a cumulative deficit of AEAs. 2026-2030 ESR emissions are based on projections reported according to Regulation (EU) 2018/1999. No ETS or LULUCF flexibilities are taken into account. Under Article 29 of Regulation (EU) 2018/1999, the Commission annually assesses whether the Union and its Member States have made sufficient progress towards meeting the obligations set out under Article 4 of the Effort Sharing Regulation. This assessment is included in the Climate Action Progress Report (CAPR) and not reflected by this table. More information on the progress assessment can be found in Chapter 3 of the CAPR.
Figure 1 shows the effort sharing emissions in 2024 and the approximated 2025 numbers compared to their respective AEA.

Figure 1 Emissions in the effort sharing sectors in 2024 and 2025* compared to the annual emission allocations (AEAs)



Notes: ESR targets for Iceland and Norway still have not been adapted to the more ambitious overall 2030 target.
Source: Author's compilation based on data from EEA (2026a, 2026g).

Goals to 2050 and beyond

The 2030 targets provide a concrete objective in the medium term, and they also provide a milestone towards achieving longer-term goals for greater reductions in GHG emissions in the EU-27. In the European Climate Law (EU, 2021) the binding objective of the EU achieving climate neutrality by 2050 is set out, in pursuit of the long-term temperature goal in point (a) of Article 2(1) of the Paris Agreement. The climate neutrality objective requires that all EU-wide GHG emissions and removals, as regulated in EU law, are to be balanced within the EU by 2050 at the latest, reducing emissions to net zero by that date. Thereafter, the EU will aim for negative emissions.

The European Climate Law has been amended in 2026 with a binding 2040 climate target of 90% net GHG emission reduction compared to 1990 levels. This includes a domestic target of 85% and up to 5% of international carbon credits (EU, 2026b).

2 Data sources

This chapter explains where the report's climate and energy data come from, how they are quality checked and combined, and which methodological limitations affect interpretation. It first describes the common reporting framework, then addresses greenhouse gas emissions, renewable energy and energy efficiency in turn. The final section explains the reporting context for Energy Community Contracting Parties.

The Trends and projections in Europe 2026 report uses the latest official 2024 data (submitted in 2026) on GHG emissions and energy consumption reported by Member States to the EC and the EEA under the Governance Regulation (EU, 2018b), and to the EC under the Energy Statistics Regulation (EU, 2008). It also uses approximated 2025 GHG emissions reported under the Governance Regulation in July 2026, together with early EEA estimates of 2025 renewable energy shares and energy consumption. The Governance Regulation has applied since 2019 and replaced the Monitoring Mechanism Regulation (EU, 2013), which had applied since 2013. It provides the monitoring framework needed to track progress by the EU and its Member States towards the 2030 and long-term objectives and targets in line with the 2015 Paris Agreement on climate change.

Governance Regulation-related data are submitted by countries to the EEA's environment data repository, Reportnet[1] and EEA's Central Data Repository[2], after which the EEA, supported by its European Topic Centre on Climate Change Mitigation (ETC CM), performs quality control procedures in consultation with individual countries. For example, the national inventory data are quality checked, Emissions Trading System (ETS) data are verified, and projection data are quality checked. Reviews and quality-checking procedures ensure that potential over- or underestimates in national inventory data are detected and corrected, and this helps to reduce the uncertainty inherent in projections.

Projections submitted by Member States and EEA member countries in 2025 and 2026 demonstrated considerable variability in their chosen 'reference year'. The QA/QC process applied to submitted projections revealed how this results in lower alignment between the historical trends confirmed by GHG inventories and projections. To ensure time-series consistency, comparability across Member States and accuracy, the European Commission asks Member States to apply the latest available historical data (t-2) from national GHG inventories as the reference year for computing projections. This also supports an accurate aggregation of Member States projections for the Union GHG projections. In the compulsory reporting year of 2025, however, only 8 Member States used 2023 (t-2) as a starting year (Austria, Bulgaria, Denmark, Germany, Ireland, Italy, Spain and Sweden), the majority of Member States (14) used 2022, Luxembourg used 2021, Poland and Romania used 2020 and Hungary and Belgium used 2019. In voluntary reporting year 2026, eight Member States submitted new projections (Belgium, Denmark, Estonia, Germany, Ireland, Italy, Lithuania and Romania) with five of these Member States using 2024 (t-2) as the reference year.

[1] https://reportnet.europa.eu/

[2] https://cdr.eionet.europa.eu/

The approximated GHG inventories for the year 2024, reported by Member States in 2025 slightly overestimated the GHG emissions (total EU emissions including indirect CO_2, including LULUCF) for the EU by 40.8 $MtCO_2e$. or 1.4%. The main reasons for this difference are the revisions in the LULUCF sector in the final 2024 GHG inventory. This affects the EU-27 time series and notably results in higher 2024 net removals (by 19.1 $MtCO_2$) and higher 1990 net removals (by 21 MtCO2e). The combined effect of these revisions changed the overall EU-27 GHG approximated emission reduction in the period 1990-2024 from -39% (according to the 2024 approximated estimates, published in 2025) to -40% (according to the latest 2026 inventory data submission).

The largest deviations in relative and absolute terms occurred for Sweden with the 2024 LULUCF GHG inventory net removals and emissions observation (submitted in 2026) being revised by -23$MtCO_2e$, compared to the 2024 approximate GHG emission datapoint (submitted in 2025). The revision corresponds to almost half of Sweden's 2024 total gross emissions – hence excluding LULUCF - (as reported in 2026). The change is due to the addition of one more year of inventory samples and a revision of the method to extrapolate the net removals in living biomass in forest land from plots that have not yet been re-inventoried. This method better captures the situation where there is a change in in the trend which is the situation in Sweden where forests have recovered after the negative impact of the drought in 2018.

The EEA and ETC-CM then compile the reported data and publish datasets, data viewers and related products on the EEA's website.

The following datasets are highlighted in the *Trends and projections in Europe 2026* report:

- GHG emissions inventory for the period 1990-2024, reported under Article 26 of the Governance Regulation in the year 2026;
- Effort sharing emissions data for the period 2013-2024. For 2005 to 2012 ESD data refer to calculated numbers in 2022 and for the period 2013-2020 as legislatively fixed in respective implementing decisions. These data consider the respective scope and global warming potential (GWP) as given in the UN's Fourth Assessment Report (AR4). Data on ESR emissions refer to the scope of the ESR, with GWPs from the UN's Fifth Assessment Report. Data for 2021-2024 were estimated by the EEA.
- ETS emissions data for the years 2005-2025, is sourced from the European Commission's Union Registry website, extracted on the 4th of September 2026;
- GHG emissions projection data until 2050, reported under Article 18 of the Governance Regulation submitted until September 2026;
- Approximated GHG emissions data for 2025, reported by Member States in July 2026 and gap-filled with estimates by the EEA (national approximated data were not provided by Bulgaria);
- The 2005-2025 share of energy from renewable sources related to renewable energy use in Europe, reported under the Energy Statistics Regulation and the RED, and published by Eurostat in its SHARES tool in 2026 (Eurostat, 2026a);
- EEA early estimates for the share of energy from renewable sources in gross final energy consumption in 2025, as prepared by the ETC CM in collaboration with the EEA;

- Primary (PEC) and final energy consumption (FEC) (indicators FEC EED, PEC EED) (Eurostat, 2026c), reported in the Energy Statistics Regulation and published by Eurostat in its complete energy balance statistics database, extracted in July 2026;
- PEC by energy source and FEC by sector are estimated using Eurostat indicators (Eurostat, 2026c) aligning both with the definitions laid out in Article 2 of the revised EED.
- EEA early estimates for the primary and final consumption of energy for each Member State in 2025, as prepared by the ETC CM in collaboration with the EEA.

Greenhouse gas emissions

The analysis presented in the *Trends and projections in Europe 2026* report is based on several sets of GHG emissions data.

Historical trends in greenhouse gas emissions

GHG emissions data for the period 1990-2024 are official data reported by the EU and its Member States under the under Article 26 of the Governance Regulation in their corresponding GHG inventory reports (EEA, 2026a) and in accordance with the United Nations Framework Convention on Climate Change (UNFCCC). The EEA is responsible for the compilation of the EU GHG inventory. Together with the ETC CM ([3]), the EEA implements a quality assurance and quality control (QA/QC) procedure (ETC/CME, 2021; EC, 2013) to ensure the timeliness, completeness, consistency, comparability, accuracy and transparency of the inventories reported by Member States that are used in the *Trends and projections in Europe 2026* report.

In 2016, a comprehensive review of GHG emissions data took place under Article 19 of the MMR, in the context of the annual compliance cycle under the ESD. This concerned the years 2005, 2008-2010, 2013 and 2014. The years 2015, 2016, 2017 and 2019 were reviewed in 2017, 2018, 2019 and 2021 during the annual review cycle under Article 19 of the MMR and Article 38 of the Governance Regulation. In 2020, another comprehensive review of GHG emissions data took place for the years 2005, 2016-2018, which form the basis for the calculation of annual emissions allocations (AEAs) for 2021-2030 under the ESR as adopted in 2018. The 2023 amendment revised the AEAs 2023-2025 and in 2025, the first comprehensive review under the ESR took place for the years 2021-2023. This review was set to determine the annual emission allocations (AEAs) for 2026-2030 and establish the linear trajectory for emissions post-2025.

All the emissions estimates used in the *Trends and projections in Europe 2026* report were calculated using GWPs from the IPCC's AR5.

Early approximated estimates of 2025 GHG emissions were reported by Member States under the Governance Regulation by 31 July 2026. These estimates were aggregated to EU level by the EEA (2026d). Gap-filling was conducted by EEA and ETC/CM for Bulgaria. For the LULUCF sector for Austria, Croatia and Switzerland, the values from the latest official inventory submission were used for gap-filling. Gap-filling of aviation data was done using Eurocontrol data. International aviation was gap-filled for Denmark, Luxembourg and Portugal. Domestic aviation was gap-filled

([3]) The ETC CM is a consortium of European institutes contracted by the EEA to carry out specific tasks in the fields of climate change mitigation and energy.

for all Member States (except for Ireland and Malta) using Eurocontrol aviation data. The methodology and data sources are laid out in detail in the ETC report *Approximated EU GHG inventory* (EEA, 2026d).

GHG emissions under the EU Emissions Trading System since 2005

ETS data is publicly available from the European Commission's Union registry ([4]) and the EEA ETS data viewer (EEA, 2026f). The data considered in the trend analysis were extracted from the Union registry on the 4th of September 2026.

For the years 2005-2020, ETS emissions are adjusted to reflect the different scope of the EU ETS for former trading periods (2005-2020) (EEA, forthcoming).

Data used to determine historic effort sharing emissions (up to t-2) were extracted from the Union Registry on 8 March each year (as agreed by Working Group 1 under the EU Climate Change Committee in its session on 18 May 2015). For approximated ESR emission data (t-1), the ETS extract date of September 4, 2026, was used.

GHG emissions under the Effort Sharing Decision and Effort Sharing Regulation

For analysing emissions trends in the ESD, historical effort sharing emissions for the period 2005-2012 are calculated using the GHG inventory data submitted in 2022, from which ETS emissions, carbon dioxide (CO_2) emissions from domestic aviation and nitrogen trifluoride (NF_3) emissions are subtracted. ETS emissions include EEA estimates to reflect the current scope of the EU ETS for stationary installations, aviation and maritime in the years 2005-2023 (EEA, forthcoming). These data have been fixed to distinguish between the different scope and GWPs used for the calculation of effort sharing emissions.

The ESD GHG emissions data for the years 2013-2020 are consistent with the outcome of the 2016, 2017, 2018, 2019, 2020, 2021 and 2022 reviews of national GHG inventory data pursuant to Article 19 of the MMR. These annual verified ESD data are set out in EC implementing decisions and were used to determine Member States' compliance under the ESD for the years 2013 to 2020.

Emissions under the ESR 2021-2024 and the year 2025 are calculated using the GHG inventory submissions and Approximated GHG inventory submission in 2026, respectively. Emissions are calculated by subtracting ETS emissions corrected for the unsustainable use of biomass, and CO2 emissions from domestic aviation from national totals. The dataset includes reviewed emissions until 2020, and calculated emissions until 2025.

Effort sharing emissions for 2005 that are calculated with the latest inventory data are different from ESR base-year emissions (EU, 2023e). The latter are used to compare Member States' progress towards achieving national targets and make comparisons between Member States (see section below).

ETS and ESR emission long-term trends estimates

([4]) In 2025, the EUTL was replaced by the Union Registry website of the European Commission.

Historical GHG emissions are divided into emissions covered by the EU Emissions Trading System (ETS) and those covered by the Effort Sharing Regulation (ESR). For each main source category defined by the IPCC for national GHG inventories, a percentage is assigned to the ETS and the remainder to the ESR. These percentages are derived from Member States' projections submitted in 2025 and 2026, in which ETS and ESR projections are reported by source category. The resulting historical split is available from 2005 at EU-27 and country level.

Annual emissions targets (annual emissions allocations, AEAs) under the Effort Sharing legislation

The ESR defines Member States' national targets to achieve the EU's 2030 target of a 40% reduction in emissions compared with 2005 in ESR sectors (see Table A1.2). Absolute AEA values for the period 2021-2030 were initially determined in the year 2020 (EU, 2020). They were based on the effort sharing legislation emissions for 2005 and the period 2016-2018, following a comprehensive review conducted in 2020. With the amendment of 2023, national ESR targets for 2030 are more ambitious and the annual emissions limits for 2023-2030 have been revised. The AEAs for 2023-2025 have been published in the Commission Implementing Decision (EU, 2023a) and for the years 2026 -2030 (EU, 2026a) the adoption of the final AEAs took place in April 2026 under the Commission Implementing Decision (EU) 2026/895 which is based on the results of a comprehensive review of the most recent greenhouse gas data in 2025 of the emissions of 2021-2023.

The first compliance check will take place in 2027 for the years 2021-2025.

The changes pursuant to Article 10(2) listed under Annex IV of the ESR are already considered in the AEA amounts for 2021 for the eligible Member States.

The ESR allows Member States to use flexibility provisions to meet their annual targets, with certain limitations:

- **Banking of unused AEAs**: Where a Member State's emissions in a given year are below its annual emission allocation, taking account of the applicable flexibilities, it may bank part of the surplus for use in subsequent years up to 2030. For 2021, the amount banked may not exceed 75% of the Member State's AEA for 2021. For each year from 2022 to 2029, the amount banked may not exceed 25% of the Member State's cumulative annual emission allocations up to that year.
- **Borrowing**: Where emissions in a given year exceed the annual limit, a Member State may borrow part of its AEA for the following year and use it for compliance in the current year. For each year from 2021 to 2025, the amount borrowed may not exceed 7.5% of the AEA for the following year. For each year from 2026 to 2029, the limit is 5% of the AEA for the following year.
- **AEA transfer**: For each year from 2021 to 2025, a Member State may transfer to other Member States up to 10% of its AEA for that year. The corresponding ceiling is 15% for each year from 2026 to 2030. The receiving Member State may use the transferred quantity for compliance in the year concerned or in subsequent years up to 2030. In addition, where a Member State's

reviewed emissions for a year are below its AEA after taking account of the relevant flexibilities, it may transfer the resulting surplus to other Member States. The recipient may use that surplus for the year concerned or in subsequent years up to 2030.

- **LULUCF flexibility**: Subject to the conditions in Article 7 of the ESR, Member States may use a limited quantity of net removals from the land-use sector for ESR compliance where their emissions exceed their available AEAs, provided that the Member State is in compliance with the requirements of the LULUCF Regulation. The maximum EU-wide quantity set out in Annex III is 262.2 million tonnes CO_2-equivalent for 2021–2030. Use is divided equally between the two five-year periods: no more than half of each Member State's Annex III ceiling may be used in 2021–2025, and no more than the other half in 2026–2030. All Member States are eligible to make use of this flexibility but those with a larger proportion of emissions from agriculture have greater access to it. Iceland and Norway also have access to this flexibility, since both are part of the ESR and LULUCF Regulation for the period 2021-2030.
- **Limited use of EU ETS allowances:** The ESR allows nine Member States to use a limited quantity of EU ETS allowances for ESR compliance: Austria, Belgium, Denmark, Finland, Ireland, Luxembourg, Malta, the Netherlands and Sweden. Iceland and Norway are also eligible under the arrangements through which they implement the ESR. The flexibility operates through the cancellation of EU ETS allowances that would otherwise be auctioned, with a corresponding quantity taken into account for ESR compliance. The maximum annual limit is 2% of 2005 effort-sharing emissions for most eligible countries, 4% for Ireland, Luxembourg and Iceland, and 2% for Norway. For Malta, the maximum is 2% for 2021–2024 and 7% for 2025–2030. The percentages currently notified are set out in Commission Implementing Decision (EU) 2020/2126, as amended, and in the Commission's country-by-year table. Member States may revise the percentages applying to 2028–2030 by 31 December 2027.
- Unlike the 2013–2020 framework, the ESR for 2021–2030 does not allow Member States to use international project credits for compliance. Compliance is based on AEAs and the flexibilities expressly provided in Articles 5–7 of the ESR.

2005 Effort Sharing Regulation base-year emissions

In the Trends and projections in Europe 2026 report, the distance between effort-sharing emissions and targets is normalised by dividing the absolute difference by 2005 ESR base-year emissions. Expressed as a percentage of the 2005 base-year emissions, this measure is directly comparable with targets and reductions expressed relative to 2005 levels and supports meaningful comparisons across Member States.

The 2005 ESR base-year emissions were established in 2020 and may differ from estimates of emissions from effort-sharing sectors in 2005 derived from the latest GHG inventories and ETS data.

GHG emissions under the LULUCF

GHG inventories and projections support policy implementation and decision making by serving three important functions. 1) GHG inventories, that document past emissions and removals over time, are the main tool for tracking progress towards national and EU targets. 2) To allow for an adequate and timely planning of policies and measures (PaMs) and ensure progress to climate

targets, GHG projections are used to quantify the expected effects of PaMs in the future. 3) Both GHG inventories and projections can provide information for understanding the drivers of changes in emissions and removals, supporting policy effectiveness and fostering climate action over time.

In the LULUCF sector, emissions and removals must be estimated across several carbon pools that store carbon for different periods of time, including living biomass (trees and vegetation), dead wood, litter, soils and HWP. Monitoring these changes is particularly challenging because carbon stocks can vary over large areas, and are influenced by management practices, whether conditions, and natural disturbances. Robust monitoring systems combine field measurements, national forest inventories and modelling to track changes in carbon stocks and fluxes over time.

Reliable reporting of GHG emissions and removals depends on the TACCC principles: Transparency, Accuracy, Consistency, Comparability and Completeness. These principles ensure that greenhouse gas estimates are clearly documented, based on the best available information, reported consistently over time, comparable across countries, and cover all relevant emission sources and carbon pools. In view of these principles, this section provides the main areas in which Member States' reporting of GHG inventories and projections can continue to improve, in order to enhance an understanding of developments in the sector, thereby supporting the implementation of effective and timely policies and measures.

Issues around LULICF GHG inventories

The following subsections describe limitations that affect how LULUCF trends, projections and policy effects should be interpreted. They address the completeness, granularity and timeliness of reported data, as well as the visibility of gross emissions, removals and policies and measures. These issues do not invalidate the reported information, but they can constrain comparability across countries and the assessment of progress towards targets.

Completeness

There are still cases where Member States do not report emissions and removals from important carbon pools. As a result, the emissions and removals of these pools and the developments that may arise from implementing measures are not adequately reflected in the GHG inventory. For example, all Member States report changes in living biomass in forest land, but many are poorly reporting dead wood, litter and soil organic carbon pools. As a result, significant emissions from degrading soils or gains from carbon accumulation in dead organic matter remain invisible. This can lead to an underestimation or overestimation of the true LULUCF balance and distort the assessment of climate mitigation progress. Similarly, if emissions from managed wetlands or certain land-use conversion categories are not reported, important emission sources may be overlooked. Complete reporting of all relevant pools and land-use categories is therefore essential to provide a full picture of emissions and removals, identify mitigation hotspots, and ensure that policies and investments are based on reliable information.

Improving inventory completeness requires overcoming capacity constraints, allocate resources to reporting and addressing gaps in data and methodologies. Member States with limited capacity to report emissions and removals from a particular tool or category (e.g. organic soils) could apply existing tools, e.g. models, available from other Member States or the scientific community. This would improve the completeness of GHG inventories and serve to calculate the mitigation potential. If the information is also made geographically explicit, it can be used to map hotspots of GHG emissions from organic soils. Moreover, such maps could be used for continuously updating policy makers for effective direction of required rewetting efforts, support the allocation of funding for measures and identify synergies with other policy goals such as restoration and biodiversity conservation.

Granularity

If monitoring systems provide information only at a coarse level of detail, e.g. because they use only default values not representative for the specific country situation, the impact of policies and measures might not be reflected in GHG inventories. For example, reporting of cropland emissions and removals by biomass and soil organic carbon pools does often not reflect different cropping systems and management types. Methodologies applying default emission factors cannot document emission reductions and enhanced removals achieved with changes in crop rotation, residue management or other measures that aim to increase soil organic carbon. Also, if monitoring systems cannot identify trees outside forest, as introduced with agroforestry systems, such measures will not affect the national GHG inventory and their contribution to national GHG mitigation targets. A third example is HWP, a reporting category of high relevance for forest rich countries and often addressed by policies and measures reported by Member States, e.g. with the aim to increase wood used for construction. Currently all Member States report this category using default lifetimes for wood-based products. This approach does not allow to reflect improvements in HWP management, e.g. the longer use of wood products or increased efficiencies of wood processing and recycling.

Timeliness

Recent and timely data is key for targeted policies and realistic assessment of compliance with targets. This is especially important for the category of forest land that is among the most variable reporting categories. Data from National Forest Inventories (NFIs) provides an accurate basis for reporting of emissions and removals from forest biomass. However, the information derived from the periodic measurements is often outdated. Ideally, such highly accurate, regular but infrequent in-situ measurements should be combined with information from more frequent and spatially detailed information sources, such as remote sensing products and modelling. For example, Member States can use remote sensing and/or modelling to extrapolate data on forest growth and disturbances between NFI measurements and so improve the timeliness of GHG inventories. This would enable the monitoring system to capture most recent developments in EU forests, such as the recovery of forests after disturbance or climate change impacts on tree growth and mortality. Member States would be able to better identify such developments impacting their forest sink, that require a policy intervention.

Visibility of gross emissions and removals

LULUCF reporting includes both emissions and removals but often these are integrated within one reporting category or even one pool. An example is reporting of forests. Living biomass in forests is the dominant carbon pool in many national GHG inventories. It amounts to about 25% of the EU's total LULUCF net sink (48 Mt CO2 in 2022). Around half of the Member States report this pool only as a net emission or removal value, without making the explicit distinction between biomass removals (forest net increment) and emissions (forest mortality and harvest). This reporting practice limits the possibility to assess drivers behind changes in the carbon pool of living biomass and consequently devising adequate measures to address them.

A declining trend in the net removals from living biomass may be driven by increased harvest or mortality, leading to more losses. This observation would imply different response measures as if the trend was driven by a decline in forest growth. A combination of NFIs and forest growth models, remote sensing data on forest health, tree core data and similar information allows for reporting of gross emissions and removals for specific subcategories and pools, e.g. forest living biomass gains and losses.

Visibility of Policies and Measures

Current reporting of emissions and removals allows to draw only general conclusions on land management changes and underlying drivers. National Inventory Documents provide contextual information to support the interpretation of observed trends, but they are not designed to attribute changes in emissions and removals to specific policies or measures. However, building on reporting of policies and measures in the LULUCF sector, Member States could expand their national monitoring systems to include data on the development of key management practices and their implementation. This goes beyond reporting on the total number of measures in a country towards increased monitoring at plot or farm level to assess management practices, their development and their impact. This integration would facilitate deriving information for evaluating the effectiveness of measures and planning future interventions.

Data relevant for monitoring policies and measures are already available from different sources at national and EU level, for example IACS data for cropland and grassland. New data will potentially become available from the implementation and monitoring of carbon farming activities, under the Carbon Removals and Carbon Farming EU Framework (Regulation (EU) 2024/3012, (2024)). Depending on its quality, this data may serve to improve the granularity of GHG inventories. In turn national monitoring systems can support monitoring of carbon farming activities, for example, by making measured and modelled data available. Fostering potential data synergies requires a focus on transparency and interoperability and could be supported by lowering barriers to data sharing.

Projections of GHG emissions

The *Trends and projections in Europe 2026* report uses GHG projection data that were reported by Member States under Article 18 of the Governance Regulation in 2025 (EEA, 2026h). Mandatory reporting of projections takes place every 2 years (2015, 2017, 2019, 2021, 2023, 2025). Member

States must also report substantial changes to projections every other year (2014, 2016, 2018, 2020, 2022, 2024, 2026).

Under Article 18 of the Governance Regulation, Member States report projections under three scenarios:

- A 'with existing policies and measures' (WEM) scenario considers the implementation of existing (already implemented) measures. It is a mandatory reporting requirement.
- If available, a 'with additional and planned policies and measures' (WAM) scenario is reported too. It considers the implementation of additional measures (at the planning stage).
- If available, Member States also report projections without policies and measures (WOM).

In 2025 all Member States but Belgium and Romania submitted updated projections. In 2026 which is a non-mandatory year, eight Member States submitted updated projections (Belgium, Denmark, Estonia, Germany, Ireland, Italy, Lithuania and Romania). In case no updated projections were submitted, 2025 projections were used. Six MS used 2023 as their reference year and five MS used 2024 as their reference year. For other countries, reference years range from 2020-2022. For the aggregated EU wide projection, a reference year of 2024 was used. In 2026, a WAM scenario is available from 23 Member States. Denmark, Finland, Germany, and Sweden provided only a WEM scenario. Bulgaria and Greece provided WAM scenarios which are identical to WEM scenarios. EU scenarios are only calculated for WEM and WAM projections. To aggregate a WAM scenario at EU level, data for the six Member States that did not report a WAM scenario were gap-filled using their latest WEM scenario.

Iceland, Norway and Switzerland submitted WEM and WAM projections in 2025, Switzerland also provided WOM projections.

Member States' reported projections include total and sectoral GHG emissions by source category as well as the split of these projections between those covered by the EU ETS and those covered by the effort sharing sectors. Total GHG projections are used to assess progress towards achieving the EU's 55% reduction target by 2030, 'effort sharing projections' are used to estimate Member States' emissions in the period 2026-2030.

The EEA, together with its ETC CM, implements a QA/QC procedure to ensure the timeliness, completeness, consistency, comparability, accuracy and transparency of the projections reported by Member States and used in the *Trends and projections in Europe 2026 report*. This procedure is described in *Quality assurance and quality control procedure for national and Union GHG projections* (ETC/CME, 2021).

Member States reported GHG projections to the EC in their updated NECPs in the years 2025 and 2026. These may differ from those reported under Article 18 of the Governance Regulation.

Issues with LULUCF GHG projections - Assessing progress towards targets

Projections form an instrument for the assessment of progress towards the EU's energy and climate targets. They constitute a forward-looking perspective, used by policymakers to evaluate the effectiveness of current and planned PaMs, and to identify gaps in achieving the Union's climate objectives. Several methodological issues currently undermine the utility of projections as a tool for long-term policy making in the land sector:

- Divergencies/discrepancies in the methodological approaches used for GHG inventories vis-a-vis projections can lead to inconsistencies in the observed level and trends in the LULUCF sector. For example, in case pools are not consistently covered in both reported data, two datasets diverge in terms of status and drivers.
- Low granularity of projections leads to a disconnect between planned policies and measures in the sector and reported trajectory of emissions and removals. Consequently, impacts of policies and measures and their contribution to achieving GHG targets cannot be assessed. For example, activities for increasing the share of organic farming to increase soil organic carbon in cropland are not captured due to a lack of differentiated emission factors and missing area identification of organic and conventional farming.
- A lack of integration across sectors prevents an adequately reflection of trade-offs of policies and measures in projections. For example, an integrated view of the energy and LULUCF sector, would allow to better assess the impact of projected wood harvest for bioenergy use on the future forest sink.
- A lack of transparency and completeness of projections makes it difficult to identify the main drivers of trends and limits comparability of projections from different Member States. Documentation is also needed to assess whether methods used by Member States can actually reflect expected impacts from PaMs as well as environmental, economic and political drivers. Several Member States did not submit projection reports outlining the methodology used for developing projections for the sector. Numerous jumps and trend differences in the data at individual Member State level can be observed that cannot be explained. Some of these inconsistencies are likely due to undocumented but valid assumptions rather than methodological errors. Another observation is a contrast between highly variable historical time series, which reflect real-world fluctuations captured by advanced inventory systems, and much smoother projections, which cannot account for unpredictable year-to-year changes resulting from natural disturbances.

Overall, reporting quality of projections currently limits comparability and reliability of LULUCF projections across Member States, highlighting the need for better reporting and a cautious interpretation of results, and use for progress-to-target analysis, particularly at the EU level.

Assessing long-term impacts

The LULUCF sector is characterised by long-term dynamics, e.g. due to forest age-class effects and long lead times of measures becoming effective, e.g. afforestation. Moreover, climate change is expected to change the basis for implementing measures in the sector over a long-time horizon, e.g. through change in climate variables like precipitation and temperature or increased the frequency of natural disturbances (EU IA Annex 7). The ability of the sector to continue acting as a net sink is therefore highly uncertain. Scientific tools exist to anticipate the development of

drivers of emissions and removals and to project future sink capacities under climate change conditions.

However, there are challenges regarding consistency and compatibility of existing methods of national GHG inventories and such modelling tools (IPCC (2024), reconciling estimates for land). Modelling of natural disturbances and their impacts is an important area for improvements and would benefit from enhanced cooperation at EU level. Additionally, increased capacities for applying complex modelling tools to allow for more frequent execution to analyse the impacts of policy changes, would increase the utility of these tools.

Renewable energy

Historical trends in the share of energy from renewable sources in gross final energy consumption

The assessment of progress towards objectives and targets for the use of renewable energy sources (RES) is based, for the most part, on information reported by Member States to Eurostat under Regulation (EC) No 1099/2008 on energy statistics (EU, 2008) and the RED and published by Eurostat via its SHARES tool.

Share of energy from renewable sources in gross final energy consumption, 2005-2024

The shares of RES in gross final energy consumption, as well as information on statistical transfers, stem from Eurostat, based on national data transmitted under the Energy Statistics Regulation and published in its SHARES tool 2026(Eurostat, 2026a).

In accordance with the accounting rules in the RED, electricity generated by hydro- and wind power was normalised to account for annual variations (hydropower over 15 years and wind power over 5 years). For details of the normalisation rules, see the SHARES manual provided by Eurostat (Eurostat, 2026d)(Eurostat, 2022). Because of their insular and peripheral geography, Cyprus and Malta's gross inland energy consumption is disproportionally high for aviation, and they are thus strongly affected by current technological and regulatory constraints. Therefore, there are exemptions on the amounts by which aviation in these countries can exceed the EU's average gross final energy consumption of 2005, as assessed by Eurostat. For data up to 2020, the provisions of Directive 2009/28/EC (RED I) apply. For values from 2021 onwards, the provisions of Directive (EU) 2018/2002 (RED II) apply.

Approximated shares of renewable energy use in 2025

The EEA developed an early-estimation ("proxy") approach to assess growth of renewable energy sources (RES) for year t−1 before complete official statistics become available. As such, the 2025 estimates combine the latest validated data with early national and European data sources. In 2026, the EEA exercise uses Eurostat's early estimates of renewable energy shares in 2025 as its starting point before further disaggregating these estimates by main market sectors. The resulting estimates provide an early indication of RES progress, and are not intended to replace official statistics. The original methodology is described in Renewable energy in Europe

- Approximated recent growth and knock-on effects EEA Technical Report 1/2015. The latest data for 2026 estimated by the EEA and the ETC CM are published alongside this report (EEA, 2026c).

Energy efficiency

The most recent revision of the EED (Directive (EU) 2023/1791, (EU, 2023c)) requires each Member State to set an indicative national energy efficiency contribution based on final energy consumption, in order to collectively meet the Union's binding target. In addition, Member States must make efforts to contribute collectively to the Union's indicative target for primary energy consumption and are required to notify these contributions to the Commission as part of their updated integrated NECPs. When doing so, Member States must also provide an indicative trajectory and express their contributions in terms of an absolute level of primary and final energy consumption in 2030.

Primary and final energy consumption datasets are aggregated by Eurostat according to the 2030 target as defined in Article 4 of the 2023 revised directive (EU, 2023c).

Historical trends in primary and final energy consumption

The assessment of progress towards achieving energy efficiency targets is based, for the most part, on information reported by Member States to Eurostat under the Energy Statistics Regulation and is published by Eurostat via its complete energy balances and energy statistics database (Eurostat, 2026b, 2026c).

For further analysis of historical trends in primary and final energy consumption at EU and Member State levels, final energy consumption is analysed by sector and primary energy consumption by energy source. Eurostat does not publish these disaggregated indicators in a form fully aligned with EED definitions. They are therefore reconstructed by the ETC CM and the EEA using Eurostat data and applying the relevant EED definitions.

Approximated estimates for primary and final energy consumption in 2025

Approximate (proxy) data on Energy Efficiency for year t-1 (2025) are estimated for all EU Member States on an annual basis. These values are produced by collecting and compiling official or preliminary data from national sources, where available, and complemented with calculations for primary and final energy consumption data. Where national values are not available, data are estimated using the most appropriate methodology based on sector and the Member State. This includes a combination of approximated renewable energy data, linear changes, baseline projections, or no change. Early estimates for 2025 primary and final energy consumption were prepared by the EEA and the ETC CM (EEA, 2026b).

National energy efficiency contributions to EU targets for 2030

The 2030 energy efficiency national contributions towards the EU targets for each Member State are obtained from the final updated NECPs. Where these were not available, the values were gap

filled using national contributions calculated with the formula set out in the Energy Efficiency Directive an in the European Commission's EU-wide assessment (EC, 2025c). The resulting national contributions values are displayed in Table A1.3.EU ETS2 historic scope and projections estimates

The EU ETS2 scope includes CO_2 emissions from the buildings, road transport and small industry sectors. To estimate the historical and projected EU ETS2 emission scope at Member State level, CO_2 emissions from the inventory categories 1.A.4.a commercial/institutional and 1.A.4.b Residential (buildings sector), 1.A.3.b Road transport (road transport sector) and 1.A.1 Energy industry, 1.A.2 Manufacturing industries and construction, 2.A Mineral industry, 2.B Chemical industry 2.C Metal industry (energy and industry sector) are included. CO_2 emissions for the buildings and road transport sector are available in the GHG inventory and in the Member States GHG projections. Emissions from the energy and industry categories are only available as CO_2e in projections, which means they also include non-CO_2 emissions. More importantly, a share of the emissions from energy and industry is already covered by the EU ETS1 and has to be deducted. Therefore, energy and industry emissions (sum of 1.A.1, 1.A.2, 2.A, 2.B, 2.C) for non-CO_2 emissions and for EU ETS1 emissions are corrected. This is done by deducting ETS1 industrial emissions and non-CO_2 emissions. That means EU ETS2 energy and industry emission estimates were corrected for urea, other non-road transport, non-CO_2 road transport, process, peat, Art. 27 and waste emissions.

To estimate the historical EU ETS2 scope, GHG inventory data retrieved from the EEA's data viewer (EEA, 2026e) has been used. Estimated 2025 emissions are included as published in EEA (2026d).

Energy Community Contracting Parties

This section describes reporting by Energy Community Contracting Parties under the adapted Governance Regulation. It complements the EU-focused analysis above by explaining the development of their reporting systems, the completeness and timeliness of submissions, and the basis for assessing progress against national contributions.

Advancements in adapted Governance Regulation reporting by the Contracting Parties

The GHG inventory data included for the Energy Community Contracting Parties is for the first time based only on data reported to the EEA under the adapted Governance Regulation. Several of the Contracting Parties have reported data to the UNFCCC for decades. With the advent of the Enhanced Transparency Framework under the Paris Agreement, the Contracting Parties have been scaling up their reporting frameworks to comply with the increased requirements. The adapted EU Governance Regulation represents an increased ambition level compared to the Enhanced Transparency Framework.

The Governance Regulation was adapted and adopted by the Energy Community in 2021, with 2025 marking the first year in which the Contracting Parties reported under the full scope of the adapted Governance Regulation.

In 2023, only 33% of the required reporting obligations due to the EEA were reported. There was only one reporting obligation, 'Use of revenues of carbon price mechanisms' in 2024, and the Contracting Parties were still familiarising themselves with the reporting obligations, the necessary IT infrastructure, and institutional arrangements. In 2025, 65% of reporting obligations were met, with 28% submissions on time. In 2026, this share of timely submissions increased to 41%. However, the total share of reported obligations decreased to 44%. It is expected that (late) submissions will continue throughout the remainder of 2026.

Reporting obligations in the adapted Governance Regulation as per first reporting deadline:

2023

- **Biannual reporting starting from 15 March:**
  - National GHG policies and measures or groups of measures (Article 18(1)).
  - Description of national systems for reporting on policies and measures and projections of anthropogenic GHG emissions by sources and removals by sinks (Annex VI).
  - National climate change adaptation planning and strategies (Article 19(1)).
- **Annual reporting starting from 31 July:**
  - Use of revenues generated by the Contracting Party from carbon price mechanisms (Article 19(2))

2025

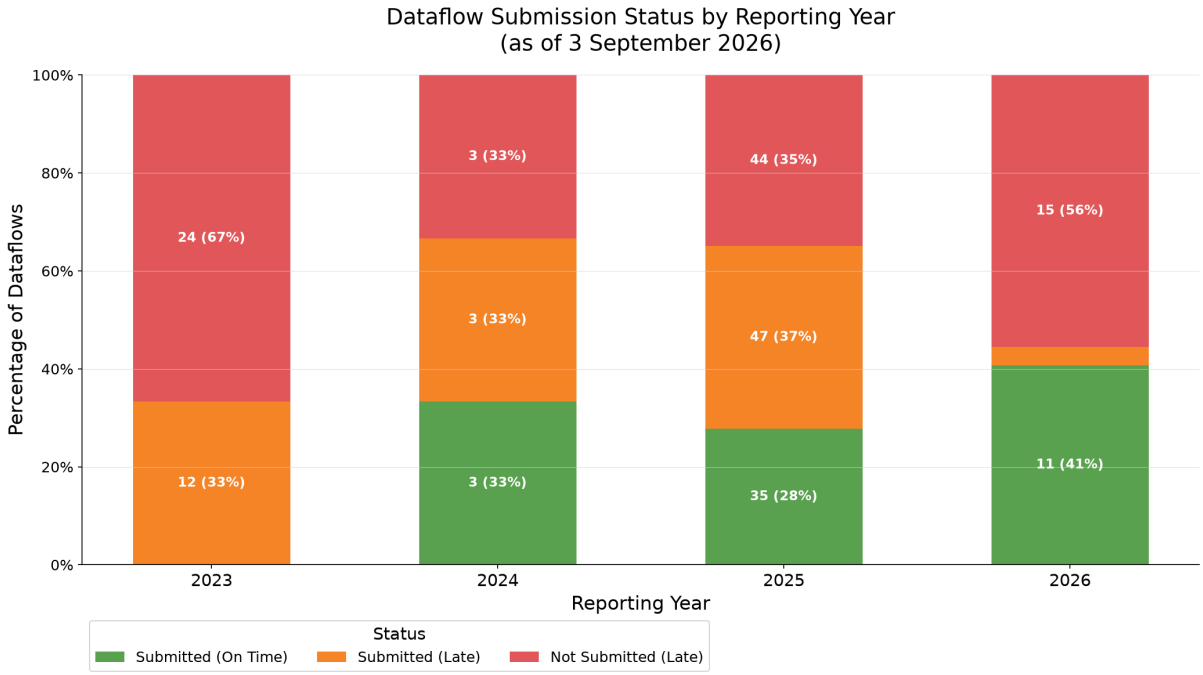
- **Annual reporting from 15 January:** Preliminary greenhouse gas inventory data (Article 26(3)).
- **Annual reporting from 15 March:** Final GHG inventory data (Article 26(3)).
- **Biannual reporting from 15 March:**
  - National Integrated policies and measures or groups of measures (Article 17(2)(a), (c) and (e); 18(1)(a); 20(b); 21(b) and (c)) – *expanded from just covering GHG PaMS above to PaMs in all dimensions of the Energy Union.*
  - Integrated national energy and climate progress report covering all five dimensions of the Energy Union (Article 17(1)):
    - Progress towards objectives, targets and contributions (Decarbonisation: GHG emissions and removals) - Article 4(a)(1); Article 17(2)(a).
    - Progress towards objectives, targets and contributions (Decarbonisation: Renewable energy) - Article 4(a)(2); Article 20(a).
    - Progress towards objectives, targets and contributions (Decarbonisation: Adaptation) - Article 4(a)(1), Article 17(2)(d).
    - Progress towards objectives, targets and contributions (Decarbonisation: Energy efficiency) - Article 4(a)(2); Article 21(a).
    - Additional reporting obligations in the area of renewable energy - Article 20 (c).
    - Additional reporting obligations in the area of renewable energy - Article 21 (c).
  - National projections of anthropogenic GHG emissions by sources and removals by sinks (Article 18(1)).
- **Annual reporting from 31 July:** Approximated GHG inventories for the year X-1 (Article 26(2)).
- **Annual reporting from 30 September:** Information on support to developing countries (Article 19(3)).

In general, this increase in submissions to the EEA represents a significant effort from the Contracting Parties to report this data and illustrates how they are building their capacity to comply

with the much stricter timelines, scope, and requirements of the adapted Governance Regulation.

Capacity-building activities, technical assistance and continued cooperation between the Contracting Parties, the Energy Community Secretariat and the EEA have contributed to these positive developments.

Figure 2 Dataflow submission status to the EEA by reporting year for the Energy Community Contracting Parties (as of 3 September 2026)



Source: EEA own compilation based on reporting data

This is particularly evident when considering the progress of the GHG inventory reporting. The GHG Inventory (and approximated GHG Inventory) are complex annual reporting obligations that require robust national arrangements to be in place. The table below displays the number of 'timely', 'late', or 'not submitted' submissions for both the GHG Inventory and the Approximated GHG Inventory. The figures in brackets highlight the change from 2025 to 2026.

	2025			**2026 (difference to 2025)**		
	Timely	**Late**	**Not**	**Timely**	**Late**	**Not**
GHG Inventory	4	2	3	5 (+1)	3 (+1)	1 (-2)
Approximated GHG Inventory	2	2	5	6 (+4)	0 (-2)	3 (-2)

Source: EEA own compilation based on reporting data

Assessment against national contributions in national energy and climate plans

Additionally, for the first time, the Trends and Projections in Europe report 2026 assesses progress towards the 2030 GHG emissions, renewable energy and energy efficiency targets in the Contracting Parties by comparing the latest available data with the national targets set out in their adopted NECPs. Where an adopted NECP was not available, the binding national targets established under Decision 2022/02/MC-EnC were used, as reported in the Energy Community Secretariat's Assessment Report (Energy Community Secretariat, 2026). This effort adds to the Energy Community Secretariat's biennial assessment of Contracting Parties' progress towards meeting their objectives and targets, on the basis of the integrated national energy and climate progress reports and of other information reported under the Governance Regulation.

Where an adopted NECP was not available, the binding national targets established under Decision 2022/02/MC-EnC were used, as reported in the Energy Community Secretariat's Assessment Report (Energy Community Secretariat, 2026).

For renewable energy shares and energy efficiency values, the same statistical sources and datasets used for EU Member States were used for the Contracting Parties.

Abbreviations and acronyms

AEA	Annual emission allocation
AR4	Fourth Assessment Report
AR5	Fifth Assessment Report
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
EEA	European Environment Agency
EED	Energy Efficiency Directive
ESD	Effort Sharing Decision
ESR	Effort Sharing Regulation
ETC CM	European Topic Centre on Climate Change Mitigation
ETS	Emissions Trading System
EU	European Union
EU-27	The 27 EU Member States (post-Brexit)
EUTL	European Union Transaction Log
FEC	Final energy consumption
GDP	Gross domestic product
GHG	Greenhouse gas
GWP	Global warming potential
IPCC	Intergovernmental Panel on Climate Change
LULUCF	Land use, land use change and forestry
MMR	Monitoring Mechanism Regulation
Mt	Million tonnes
Mtoe	Million tonnes of oil equivalent
NECP	National energy and climate plan
PEC	Primary energy consumption
QA/QC	Quality assurance and quality control
RED	Renewable Energy Directive
RES	Renewable energy sources
UNFCCC	United Nations Framework Convention on Climate Change
WAM	With additional policies and measures
WEM	With existing policies and measures
WOM	Without policies and measures

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