

September 2026

EU CO2 emissions fell 2% in first half of 2026, just under half the pace needed to meet the EU's 2030 climate target

The Hormuz energy crisis drove the EU's emissions from oil down in H1 2026, but power sector emissions rose for a second year, with total CO2 emissions in coal-reliant Poland surging 8.1%

Key findings

- In the first half of 2026 (January to June, H1 2026), EU CO2 emissions from fossil fuels fell by 20.9 million tonnes (Mt), or 2.0% below H1 2025, totalling 1,040.8 Mt.
- In H1 2026, CO2 emissions fell at just under half the 3.6% annual pace needed to meet the [EU's 2030 climate target](#). CO2 emissions were 17 Mt above the required pathway in H1 2026, and at this pace the EU would reach the level set by its 2030 target only around 2034.
- Between the first halves of 2019 and 2026, progress came mainly from power generation, whose emissions fell by an average of 6.8% per year. Emissions from industry and buildings fell by 3.4% a year over the same period, while those from domestic transport fell by only 0.4% a year.
- Gas was the only fossil fuel whose emissions rose in H1 2026, up 3.1 Mt (+0.9%) year-on-year. Consumption increased despite the LNG supply shock, putting further pressure on already low gas storage ahead of winter and underscoring the need to reduce reliance on gas through clean power generation and electrification in the transport, buildings and industrial sectors. Emissions from oil fell by 21.0 Mt (-4.3%) and from coal by 3.1 Mt (-1.3%).
- Emissions from oil used in industry and buildings fell by 12.6 Mt (-10.8%) in H1 2026. Almost all of the reduction came between March and June, after the [Hormuz crisis restricted supply and pushed up fuel prices](#). EU industrial output was flat (-0.2%) between January and June 2026 compared with the same period in 2025, so lower production does not explain the fall. Deliveries of heating gasoil were 41%

lower in April and May than in the same period a year earlier. Oil used in industry and buildings accounted for three-fifths of the EU's total emissions reduction in H1 2026. Adjusting for weather made little difference to the overall EU CO₂ emissions figures.

- Wind and solar generated a record 458 terawatt-hours (TWh) in H1 2026, exceeding coal and gas combined for the third consecutive first half, but renewable generation remained 13% short of the [EU's Fit for 55](#) pathway. Looking more broadly at clean energy (including nuclear, which has fallen more slowly than the EU Fit for 55 modelling assumes), the EU is 6% short.
- Power generation was the only sector in which emissions rose in H1 2026, by 4.5 Mt (+2.0%), marking the second consecutive increase for the first half of the year. Gas drove the increase, with gas-fired power generation in a cold January up 22% from the previous year. Coal-fired generation fell 1.0% in H1 2026.
- Transport emissions fell by 7.3 Mt (-2.0%) in H1 2026. Deliveries of road diesel between January and June were 3.4% lower than in the same months of 2025, while petrol deliveries were 1.0% higher. Diesel deliveries were already 4.0% lower in January and February than a year earlier, before the Hormuz crisis.
- Poland's emissions rose 10.0 Mt (+8.1%) in H1 2026 compared with H1 2025, by far the largest increase in absolute terms among the member states analysed. Hard coal use rose 16.8% in Polish power plants and 48% in households, services, and agriculture.
- Finland (-11.8%), Bulgaria (-10.1%), and France (-7.4%) recorded the largest percentage drop in CO₂ emissions among the member states analysed in H1 2026 compared with H1 2025. Germany (9.1 Mt) and France (8.6 Mt) recorded the largest absolute declines.

EU CO₂ emissions fell in the first half of 2026

CREA analysis shows that EU CO₂ emissions from fossil fuel combustion totalled 1,040.8 Mt in the first half of 2026, down 20.9 Mt (-2.0%) from 1,061.7 Mt in the same period in 2025. The fall follows a 1.6% rise in the first half of 2025, leaving first-half emissions in 2026 only 0.4% below their 2024 level. In the first halves of 2023 and 2024, emissions declined at a much faster rate, by 9.5% and 7.5%, respectively. Adjusting for weather made little difference to the 2026 fall at the EU level (-1.9%), as the effects of weather on energy demand and on wind, solar, and hydropower output largely offset each other.

The Hormuz crisis, which began with the strikes on Iran on 28 February 2026, pushed up fuel prices and caused oil use to fall. Over the first half of 2026, coal emissions fell, while gas emissions rose. Power generation, which delivered most of the EU's emission cuts in the first halves of 2023 and 2024, moved in the opposite direction to transport and to industry and buildings in H1 2026. Growth in wind and solar met almost all of the increase in electricity demand in the first half of 2026. It covered only part of the increase in January, when a cold spell raised demand, and in May and June, when wind and hydropower output fell.

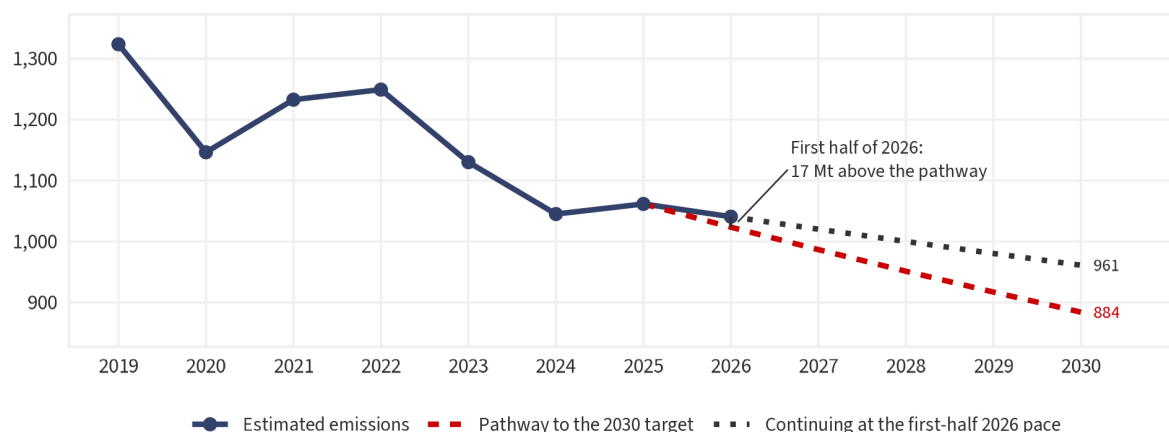
Progress compared with the pathway to the EU's 2030 target

The EU has committed to cutting its net greenhouse gas emissions by at least 55% by 2030, compared with 1990 levels. [Climate Action Tracker](#) estimates that the EU commitment means cutting greenhouse gas emissions, excluding land use, to 44% below 2010 levels by 2030. To track progress, CREA applies the same target reduction to energy-related CO₂ emissions as it does to total greenhouse gas emissions. Over the whole of 2025, EU CO₂ emissions were 33% below their 2010 level. To meet that 2030 climate target, emissions need to fall by 3.6% each year from 2025 to 2030.

The 2.0% fall in the first half of 2026 is just under half the pace required to meet the 2030 target. Had the EU been on the required pathway to meet its target, H1 2026 emissions would have been 1,023.5 Mt, 17 Mt lower than the estimate (Figure 1). If emissions continued to fall at the rate seen in H1 2026, the EU would reach the level implied by its 2030 target only around 2034, and later still if part of the price-driven fall in oil use reverses.

EU CO₂ emissions compared with the pathway to the 2030 target

First half (January to June) of each year | 2019 to 2026, pathways to 2030 | Mt CO₂



Source: CREA analysis based on Eurostat, ENTSO-E, ENTSOG, and IPCC.

Note: The pathway applies the 3.6% annual fall needed between 2025 and 2030, based on Climate Action Tracker's benchmark, to first-half emissions. Figures for 2026 include estimated months.



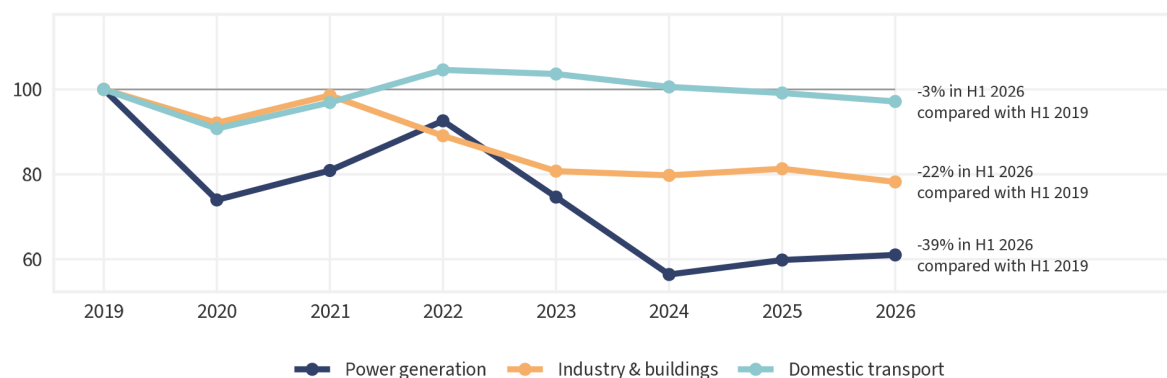
Figure 1 — EU CO₂ emissions compared with the pathway to the 2030 target

Between the first halves of 2019 and 2026, emissions from power generation fell by an average of 6.8% per year (Figure 2), while coal-fired power generation fell by 44% over the 7-year period. Emissions from industry and buildings fell by 3.4% a year, and those from domestic transport by only 0.4% a year, leaving transport emissions in H1 2026 just 3% below their H1 2019 level. Power generation delivered most of the EU's progress over that period, but its first-half emissions rose in both 2025 and 2026.

Excluding oil used in industry and buildings, which fell sharply after the Hormuz crisis began, EU emissions in the first half of 2026 were 0.9% lower than in the same period of 2025. Oil used in industry and buildings accounted for 12.6 Mt of the 20.9 Mt fall, so three-fifths of the EU's CO₂ emission reduction in H1 2026 came from one category of fuel use, in response to a price shock.

EU CO2 emissions by sector

First half (January to June) of each year | 2019 to 2026 | index, first half of 2019 = 100



Source: CREA analysis based on Eurostat, ENTSO-E, ENTSG, and IPCC.

Note: Labels show the total change between the first halves of 2019 and 2026, equal to an average change of -6.8% a year for power generation, -3.4% for industry & buildings, and -0.4% for domestic transport.

Industry & buildings is all fossil fuel combustion outside power generation and domestic transport.

Figures for 2026 include estimated months.

Figure 2 — EU CO2 emissions by sector, indexed to H1 2019

Sector trends explain the change in EU emissions

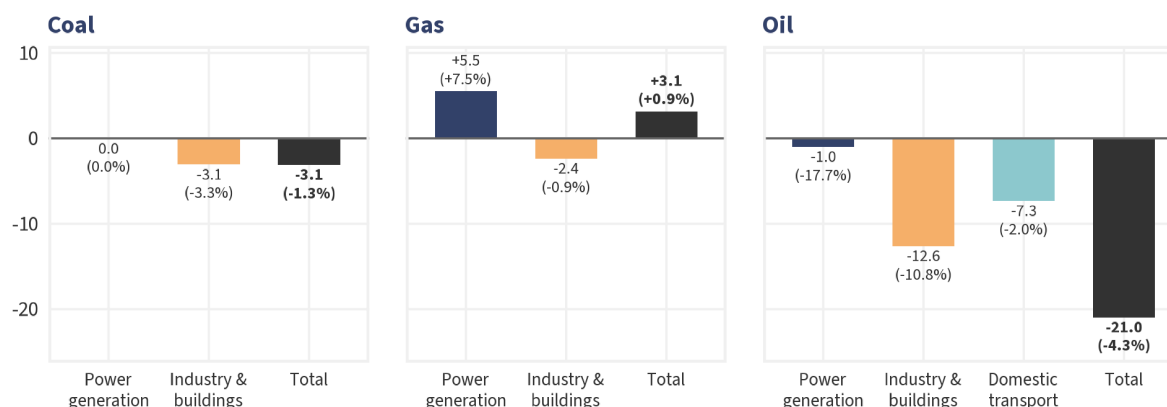
EU CO2 emissions from fossil fuels fell by 20.9 Mt (-2.0%) in the first half of 2026, as lower oil and coal emissions outweighed higher gas emissions (Figure 3). Oil emissions fell 21.0 Mt (-4.3%) year-on-year. Among oil products, deliveries of heating gasoil and fuel oil fell most steeply between January and June 2026, by 21.9% and 21.7%, respectively, compared with the same months of 2025. Gas-related emissions rose by 3.1 Mt (+0.9%), even as industrial gas use fell. Power plants burned more gas to meet demand during a cold January and to compensate for lower hydropower output during droughts, as well as reduced nuclear [output](#) following Belgium's planned shutdowns. The increase in gas consumption came despite the LNG supply shock, adding pressure to already low European gas storage levels ahead of winter. It underscores the need to reduce reliance on gas through clean power generation and electrification in transport, buildings and industry.

In H1 2026, coal emissions fell 3.1 Mt (-1.3% year-on-year) to 234.1 Mt, reaching the lowest first-half level in the tracker's series, which dates back to 2010. Coal emissions from power plants were unchanged compared with H1 2025, so the entire reduction was driven by the industry and building sector. The EU's coal emissions reduction would have been larger,

but for Poland, where coal emissions rose by 7.5 Mt (+11.2%), mostly in power generation. Coal emissions fell in most other member states analysed.

Change in EU CO₂ emissions by fuel and sector

First half (January to June) of 2026 compared with the first half of 2025 | Mt CO₂



Source: CREA analysis based on Eurostat, ENTSO-E, ENTSOG, and IPCC.

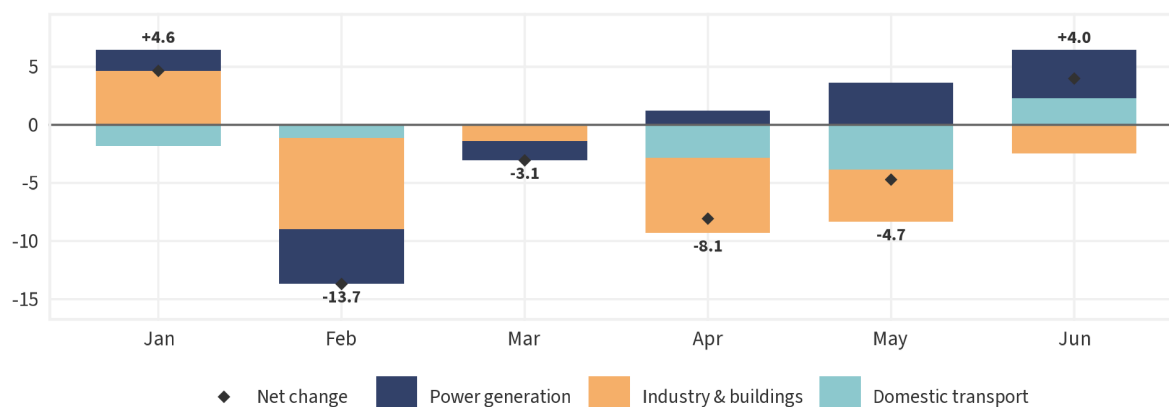
Note: Labels show the change in Mt CO₂ and, in brackets, in percent. Industry & buildings is all fossil fuel combustion outside power generation and domestic transport. Figures for 2026 include estimated months.

Figure 3 — Change in EU CO₂ emissions by fuel and sector, H1 2026 versus H1 2025

Industry and buildings accounted for 44% of EU fossil CO₂ emissions in the first half of 2026, transport for 34%, and power generation for 22%. Compared with the same months of 2025, emissions from industry and buildings fell in every month except January, while power sector emissions rose in every month except February and March, with the largest increases in January, May, and June (Figure 4).

Change in EU CO2 emissions by month and sector

Change compared with the same month of 2025 | January to June 2026 | Mt CO2



Source: CREA analysis based on Eurostat, ENTSO-E, ENTSG, and IPCC.

Note: Bars sum to the net change marked by the diamond. Industry & buildings is all fossil fuel combustion outside power generation and domestic transport. Eurostat's EU-wide coal totals for March to May 2026 are not yet published, so those months are estimated; oil and gas data run to June 2026.

Figure 4 — Change in EU CO2 emissions by month and sector, H1 2026 versus H1 2025

Transport: A diesel-led decline that began before the crisis

Transport emissions fell by 7.3 Mt (-2.0%) in the first half of 2026, the fourth consecutive year-on-year decline between January and June, following decreases of 0.9% in H1 2023, 2.9% in H1 2024, and 1.4% in H1 2025. Germany and France recorded the largest absolute drops in transport emissions, while emissions rose in several member states, including Spain (+1.4%) and Austria (+2.3%).

CREA's analysis of Eurostat data on fuel deliveries shows the decline was driven by reductions in diesel emissions. At the EU level, diesel deliveries between January and June were 3.4% lower than in the same months of 2025, with steep reductions in France (-7.4%) and Germany (-6.9%). EU petrol deliveries rose 1.0% over the same period. At 90.5 mn tonnes, diesel deliveries between January and June were the lowest for those months since 2020. Diesel deliveries were already 4.0% lower in January and February than a year earlier, before the Hormuz crisis began, and the fall deepened to 6.8% in April and May, when wholesale [diesel prices were running far above what markets had expected before the war](#). Diesel deliveries then turned up, running 2.1% above their June 2025 level in June 2026. Transport emissions followed a similar pattern, falling 2.6% in January and February

and 5.3% in April and May, before rising 3.6% in June. The crisis may have deepened the decline, but it did not start it.

[Astutus Research](#), in its quarterly update for Tires Europe, reports that miles travelled in Europe declined in the second quarter of 2026, reflecting significantly higher average fuel prices and weaker consumer sentiment. The continued uptake of hybrid and electric cars also helped reduce transport emissions, as EU registrations of hybrids and electric cars rose in H1 2026 while petrol and diesel registrations fell. In the first half of 2026, newly registered battery-electric cars accounted for 20.7% of the EU market, up from 15.6% a year [earlier](#).

Power: The only sector where emissions rose

EU power sector emissions rose 4.5 Mt (+2.0%) in the first half of 2026, the only sector to increase. Power sector emissions had also risen in H1 2025, after reductions of 19% in H1 2023 and 24% in H1 2024. Gas-fired power added 5.5 Mt of CO₂ emissions (+7.5%), matching a 7.5% rise in the gas burned by power and heat plants in Eurostat's monthly data. Emissions from coal-fired power were unchanged, and emissions from oil-fired power fell 1.0 Mt (-17.7%).

Electricity generation rose by 39.1 TWh (+2.9%) in the first half of 2026 (Figure 5). Wind generation grew by 18.6 TWh (+8.1%) and solar by 18.8 TWh (+9.8%), together accounting for almost all of the total EU rise in power generation. Hydropower generation fell by 5.3 TWh (-3.0%) and nuclear generation by 2.1 TWh (-0.7%). Clean sources (wind, solar, hydropower, nuclear, and bioenergy) added 32.7 TWh, and fossil fuels covered the rest of the increase in generation. Gas-fired power generation rose 7.8 TWh (+3.4%), while coal-fired generation fell 1.4 TWh (-1.0%).

Over H1 2026, hydropower output fell the most in Italy (-4.2 TWh), Portugal (-2.6 TWh), and Spain (-2.4 TWh). Belgium's nuclear power output fell by 8.9 TWh year-on-year in H1 2026, more than half of it after its last two nuclear power plants [began a seven-month planned shutdown in early April](#) to allow extensive modernisation. Meanwhile, nuclear power generation rose by 8.5 TWh in France and 2.7 TWh in Finland.

In January, when a cold spell raised heating demand, gas-fired generation across the EU was 22.2% higher than the previous year, according to monthly data from Ember, with the largest increases in Italy, Germany, and the Netherlands. In February, wind output was 44% higher, and both coal and gas generation fell. In May and June, wind generation was 13%

and 11% lower than the previous year, and hydropower was 13% and 9% lower, while a [June heatwave](#) pushed up demand for cooling. Coal-fired power generation rose 21% in May and 27% in June year-on-year, mainly in Germany and Poland, where wind output was 6.4 TWh lower over the two months. Gas-fired generation across the EU rose 9% in May and 8% in June.

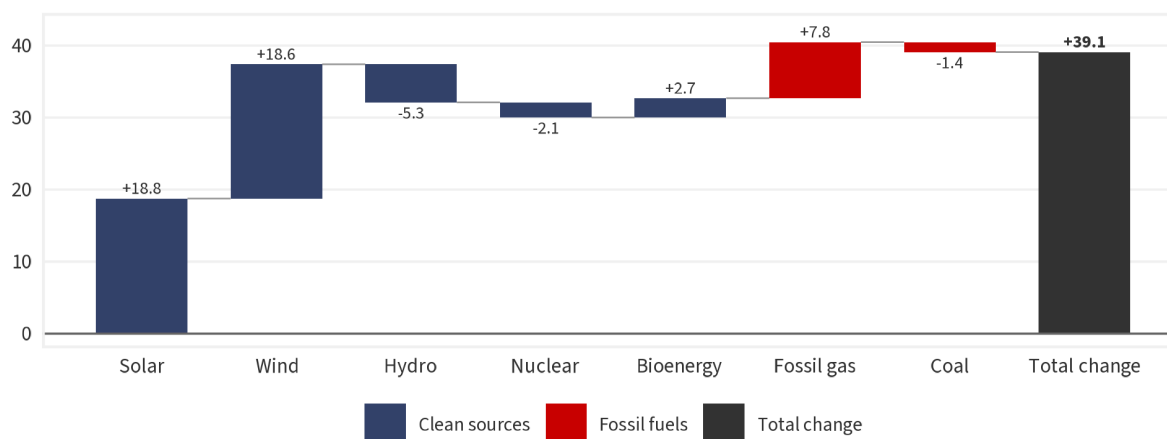
CREA's analysis of daily electricity demand against temperatures finds that changes in heating and cooling needs accounted for almost all of the 2.9% rise in EU power generation in H1 2026 compared with H1 2025. Adjusted for weather, EU electricity demand was flat (+0.1%).

Polish coal-fired power generation rose by 3.5 TWh (+7.9%) in H1 2026 year-on-year, as examined in the country section of this report. In Bulgaria and Romania, coal-fired generation fell in H1 2026 compared with H1 2025, as hydropower output rose, cutting power sector emissions by 20% and 15%, respectively. In Germany, wind and solar output rose by 12.1 TWh year-on-year in H1 2026, more than offsetting the country's increase in total power generation.

Wind and solar growth covered almost all of the rise in generation in the first half of 2026, but only part of it in January, May, and June. In those months, wind and hydropower output fell short or heating and cooling needs peaked, and fossil generation made up the difference.

Change in EU electricity generation by source

First half (January to June) of 2026 compared with the first half of 2025 | TWh



Source: CREA analysis based on ENTSO-E and Ember.

Note: Each bar starts where the previous one ends, so the bars add up to the total change. Clean sources are renewables and nuclear power. Generation data run to 30 June 2026.

Figure 5 — Change in EU electricity generation by source, H1 2026 versus H1 2025

Industry and buildings: Oil use fell sharply while output held steady

EU CO₂ emissions from industry and buildings fell 18.0 Mt (-3.8%) in H1 2026, the largest absolute fall of any sector, and dropped 4.9% after adjusting for weather. Most of the drop came from oil, with emissions falling by 12.6 Mt (-10.8%). Emissions from coal fell by 3.1 Mt (-3.3%), and those from gas by 2.4 Mt (-0.9%). Excluding heating, gas use in industry and buildings fell by 4.2%, partly offset by increased gas use for heating.

EU industrial output was essentially unchanged in the first half of 2026 (-0.2%) year-on-year, according to [Eurostat data](#), so lower production does not explain the fall. Manufacturing was down 0.5% and chemicals 2.8%, while basic metals rose 0.9%. Non-metallic minerals, such as cement and glass, were flat (-0.1%), while refining output rose 2.4%.

Emissions from oil used in industry and buildings were almost unchanged in January and February 2026 compared to the same months of 2025 (-0.4%). From March to June, emissions from oil used in industry and buildings were 15.6% lower than in 2025 and 9.9% lower than in 2024 (Figure 6), so almost all of the 12.6 Mt fall came after the Hormuz crisis

began. At 103.9 Mt, first-half emissions from this source were the lowest on record dating back to 2010.

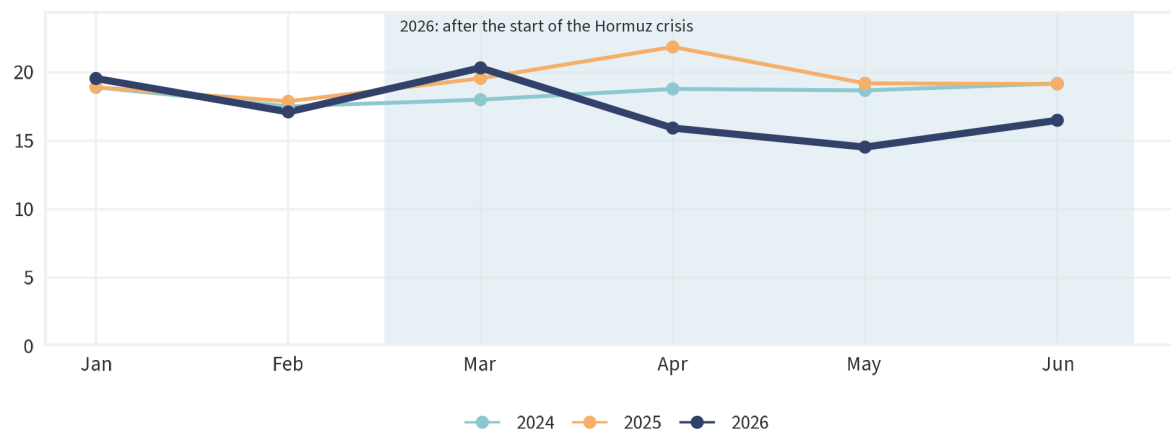
According to [Eurostat data](#), deliveries of heating gasoil, used mainly to heat buildings and in agriculture, were 41% lower in April and May 2026 than in the same two months of 2025, after falling only 2.8% in January and February. Among the ten largest markets, deliveries over April and May fell by 69% in Austria, 63% in Germany, 52% in Belgium, and 50% in both Greece and France, but by only 17% in Spain, the second-largest market. Wholesale diesel and gasoil prices were already running 57% above pre-war expectations in March, according to [CREA's analysis of the Hormuz crisis](#), but deliveries fell most in April and May, consistent with buyers postponing refills rather than cutting back at once. From January to June 2026, EU heating gasoil deliveries were 21.9% below the same months of 2025, at 14.3 mn tonnes, the lowest for those months in Eurostat's monthly series, which dates back to 2009. Fuel oil deliveries were also 21.7% lower between January and June, but they were already down 17.9% in January and February, before the crisis began.

In 2022, the last time prices spiked, EU deliveries of heating gasoil fell 15.6% in April and 12.4% in June compared with a year earlier. They were then between 6% and 11% higher than the previous year in each month from July to September, and over the full year were only 1.4% below 2021. In Germany, deliveries were 12.5% lower in June 2022 than a year earlier and 46% higher in July. The fall in 2026 was far deeper, and deliveries in Germany and France were still 46% and 36% lower in June 2026 than a year earlier, but if buyers behave as they did in 2022, part of the fall could reverse once prices ease and tanks are refilled. Official oil stock figures cover fuel held by suppliers and emergency stockholders, not fuel in household and business tanks, so they cannot show how much of the fall is still to be bought back. Heating gasoil deliveries were already falling before the Hormuz crisis, by an average of 5.6% a year between 2019 and 2025, based on full-year deliveries.

CREA's tracker records fuel when it is delivered rather than when it is burned. Purchases of fuel deferred during periods of high prices therefore reduce recorded emissions temporarily but will increase them when stockpiles are replenished. The price-driven part of the decline in oil emissions should not be counted as a lasting reduction, and Eurostat data in the coming months will likely show how much of the reduction is reversed if prices start to fall.

EU CO₂ emissions from oil used in industry and buildings

By month | January to June, 2024 to 2026 | Mt CO₂



Source: CREA analysis based on Eurostat, ENTSO-E, ENTSG, and IPCC.

Note: Oil used outside power generation and domestic transport, mainly heating gasoil and fuel oil, measured by deliveries rather than when it is burned. Eurostat's EU-wide oil data run to June 2026.



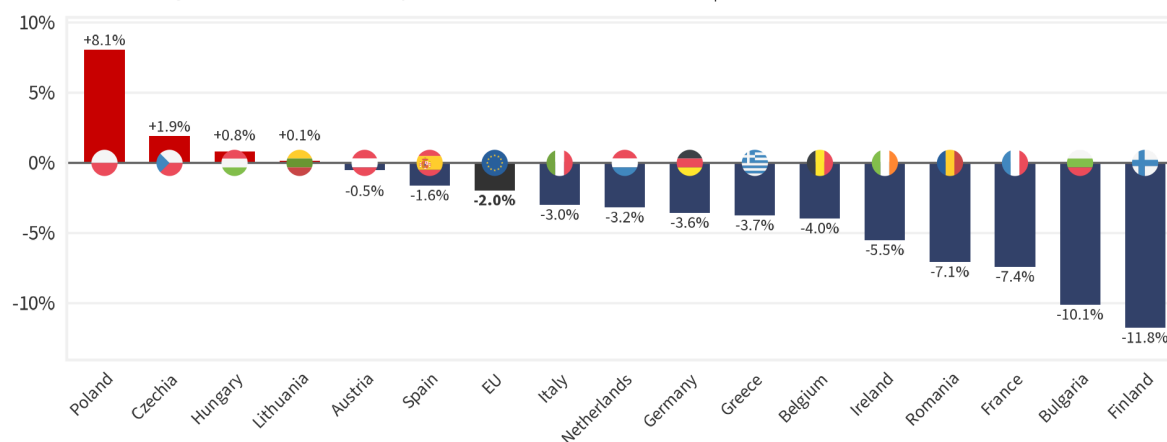
Figure 6 — EU CO₂ emissions from oil used in industry and buildings, by month

Country trends reveal divergent pathways

Figure 7 shows results for 16 of the 17 member states whose national estimates meet the tracker's quality thresholds, as explained in the methodology section.

Change in CO2 emissions by member state

First half (January to June) of 2026 compared with the first half of 2025 | %



Source: CREA analysis based on Eurostat, ENTSO-E, ENTSG, and IPCC.

Note: Shows member states whose estimates meet CREA's quality thresholds, excluding Sweden; see Methodology. Figures for 2026 include estimated months.



Figure 7 — Change in CO2 emissions by member state, H1 2026 versus H1 2025

Poland: More hard coal in power plants and in buildings

Poland recorded by far the largest increase in H1 2026, with emissions up 10.0 Mt (+8.1%) year-on-year, the first rise after several years of emission reductions in the first half of the year. Emissions rose in both power generation (+12.1%) and industry and buildings (+9.4%), while transport emissions were flat. Adjusted for weather, the increase was still 7.6%.

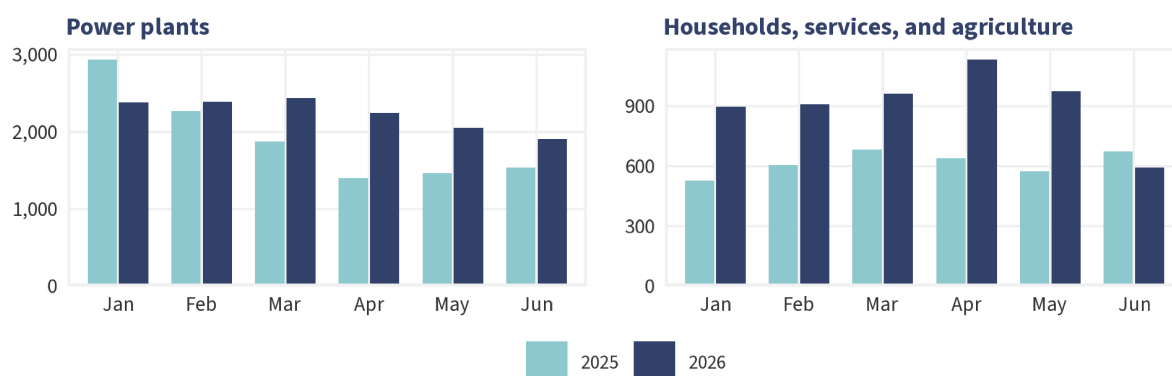
Poland has reported its [monthly coal consumption data](#) to Eurostat up to June 2026, and the data show that the increase in power generation was driven mainly by hard coal. Hard coal burned in Polish power plants rose by 16.8% in the first half of 2026 compared with the same period in 2025 (Figure 8), while lignite rose by 4.6%. The increase came between March and June, not during January's cold spell. In January, Poland [set a record for peak power output](#), but its power plants burned 19% less hard coal than the previous year. From March to June, hard coal use in Polish power plants was between 24% and 60% higher each month than in 2025. Domestic coal prices for Polish power plants were at their lowest in four years in March, according to [Instrat](#).

According to Ember data, Polish power generation between March and June 2026 was 3.7 TWh higher than in the same period a year earlier. The increase came from coal, as higher

solar output offset lower wind. Domestic electricity demand rose by 1.4 TWh over the same months, and the remaining excess generation was exported abroad, as Poland shifted from roughly balanced electricity trade to net exports of 2.3 TWh.

Hard coal use in Poland, by month

Power plants and other final users | January to June, 2025 and 2026 | thousand tonnes



Source: CREA analysis based on Eurostat.

Note: Hard coal only. Lignite, burned almost entirely in power plants, rose 4.6% in the first half of 2026 compared with the first half of 2025. Households, services, and agriculture is Eurostat's final consumption by other sectors; recorded use can include coal bought for storage. Poland's monthly Eurostat data run to June 2026, so no months are estimated.

Figure 8 — Hard coal use in Poland, by month

Outside the power sector, hard coal used by households, services, and agriculture rose 48% year-on-year to 5.5 mn tonnes in Poland, the highest first-half level since 2022. The increase was not limited to the coldest months of January and February, with use 77% higher in April and 69% higher in May than a year earlier. In H1 2026, hard coal used in industry fell by 8%, even though Polish industrial output rose by 2.9%.

Elsewhere, Czechia's emissions also rose in H1 2026 compared with H1 2025 (+1.9%), alongside a 5.1% increase in coal-fired generation. Emissions in Hungary (+0.8%) and Lithuania (+0.1%) were broadly unchanged.

Member states with the largest emission reductions

Finland (-11.8%), Bulgaria (-10.1%), and France (-7.4%) recorded the largest percentage falls in H1 2026 CO₂ emissions compared with H1 2025. In Finland, emissions fell even though a cold start to the year pushed first-half [electricity consumption up by 6.3%](#).

Finland's nuclear generation rose 2.7 TWh over the same period, and coal, oil, and gas use all declined.

Bulgaria's progress came almost entirely from power generation, where coal-fired generation dropped by more than a fifth as hydropower recovered. Bulgaria's total CO₂ emissions had risen by 30% in H1 2025 compared with H1 2024. Adjusted for weather, they rose slightly in H1 2026 compared with H1 2025 (+1.8%), so the reduction was due to the return of hydropower and only partially reversed the rise in H1 2025.

Germany and France recorded the largest absolute falls in H1 2026 compared with H1 2025, at 9.1 Mt (-3.6%) and 8.6 Mt (-7.4%), respectively. In both countries, most of the decline came from industry and buildings and the transport sector, driven by lower oil use in Germany and by lower oil and gas use in France.

Clean power: Record output, but not growing fast enough for the 2030 pathway

Wind and solar generated a record 458 TWh in H1 2026 (data dating back to 2016), about a third of EU electricity, and produced more than coal and gas combined for the third consecutive first half of the year, this time by 91 TWh. Solar generation more than doubled between the first halves of 2021 and 2026 and was the EU's largest single source of electricity in both May and June 2026, ahead of nuclear. [Eurostat](#) reports that renewables generated 45.5% of EU electricity in the first quarter of 2026, up from 42.7% a year earlier.

Wind and solar generation rose by 37 TWh in H1 2026 compared with H1 2025. CREA estimates that if this electricity had come from coal and gas plants instead, power sector emissions would have risen by around 28 Mt rather than 4.5 Mt. Wind and solar generated about 200 TWh more in H1 2026 than in H1 2019. Producing that amount of power from fossil plants instead of wind and solar would have emitted roughly 126 Mt of CO₂, equivalent to more than four-fifths of the 146 Mt fall in power sector emissions between H1 2019 and H1 2026.

In H1 2026, renewable power generation was 13% below the level implied by the [European Commission's Fit for 55 modelling](#), a gap that widened from 3% in the first half of 2024 (Figure 9). Part of that widening was due to hydropower output falling back from an unusually wet first half of 2024, but wind and solar growth also fell short.

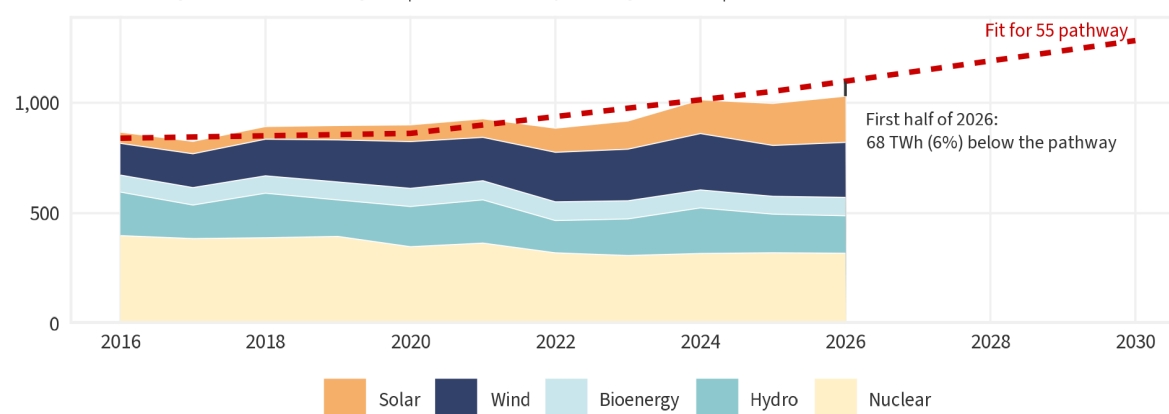
Nuclear generation fell 0.7% between the first halves of 2025 and 2026, to 319 TWh. This was far slower than the annual 2.2% decline assumed in the Fit for 55 modelling through 2030, leaving nuclear power generation 14% above the modelled level in H1 2026.

Total non-fossil power generation, including renewables and nuclear, was 6% below the modelled pathway in H1 2026, compared with 5% in H1 2025 and no gap at all in H1 2024. Reaching the modelled 2030 level would require renewable generation to grow by more than twice the average annual rate of wind and solar growth observed between the first halves of 2021 and 2026.

Wind and solar supplied close to half of the electricity in Germany, the Netherlands, Ireland, Portugal, and Spain in H1 2026, and around three-quarters in Denmark and Lithuania, but less than a tenth in Czechia and Slovakia. In Poland, where coal-fired power generation rose the most, wind and solar output did not grow at all compared with H1 2025.

EU non-fossil electricity generation compared with the Fit for 55 pathway

First half (January to June) of each year | 2016 to 2026, pathway to 2030 | TWh



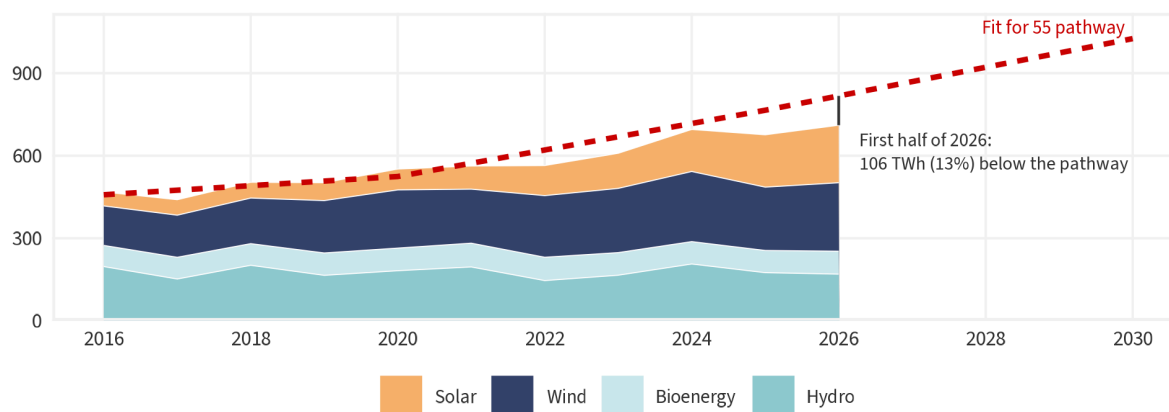
Source: CREA analysis based on ENTSO-E, Ember, and European Commission PRIMES.

Note: Non-fossil generation is nuclear, hydropower, bioenergy, wind, and solar. The pathway is the European Commission's Fit for 55 modelling (PRIMES), interpolated between its five-year points, with each half-year taking half of the annual figure. Generation data run to 30 June 2026.

Figure 9a — EU non-fossil electricity generation compared with the Fit for 55 pathway

EU renewable electricity generation compared with the Fit for 55 pathway

First half (January to June) of each year | 2016 to 2026, pathway to 2030 | TWh



Source: CREA analysis based on ENTSO-E, Ember, and European Commission PRIMES.

Note: Renewables are hydropower, bioenergy, wind, and solar. The pathway is the European Commission's Fit for 55 modelling (PRIMES), interpolated between its five-year points, with each half-year taking half of the annual figure. Generation data run to 30 June 2026.



Figure 9b — EU renewable electricity generation compared with the Fit for 55 pathway

Policy recommendations

EU CO₂ emissions fell in H1 2026 at just under half the pace required to meet the 2030 target, and much of the reduction was driven by a price shock. Oil use in industry and buildings dropped sharply after the Hormuz crisis began, and the 2022 precedent suggests part of that drop could reverse as postponed purchases resume. Power sector emissions rose for the second consecutive first half of the year, with fossil generation filling the gaps during a cold January and the low-wind, low-hydropower months of May and June. CREA estimates that had the growth in wind and solar generation between H1 2025 and H1 2026 come from coal and gas plants, the rise would have been around 28 Mt, not 4.5 Mt. In Poland, increased use of hard coal pushed national emissions up by 8.1% in H1 2026. Transport emissions, which changed the least of any sector between the first halves of 2019 and 2026, fell 2.0% in H1 2026 compared to H1 2025.

Closing the gap to the 2030 target depends on changes that keep emissions falling once fuel prices ease, including cleaner, more flexible power systems, electrified heating and transport, and faster progress in member states where emissions are rising.

Keep carbon pricing strong and predictable

The EU should protect its Emissions Trading System and maintain a strong, predictable carbon price, addressing carbon leakage through targeted support rather than weakening the scheme. The second emissions trading system, covering fuels for buildings and road transport, must start in 2028 without further delay or dilution. Heating gasoil purchases fell sharply after prices rose in the first half of 2026. A steady carbon price would give households and businesses a constant reason to move away from oil, whether or not another crisis pushes prices up.

Clean up the power sector faster

Wind and solar deployment must accelerate to close the gap to the Fit for 55 pathway, with targeted action in the member states furthest behind. The first half of 2026 showed that annual growth in renewables is not enough on its own if fossil plants still cover the months of low wind, low hydropower, and peak heating or cooling demand. Faster grid development and permitting reform are needed to deploy storage, interconnection, and other clean technologies, while power market reforms should enable storage and demand flexibility to compete fairly with fossil gas and coal during periods of low renewable output or peak demand. Coal retirements should be matched by clean energy, storage, and interconnection rather than by new dependence on gas-fired generation. Adding wind and solar to existing hydropower grid connections is one way to use already-built grid capacity and reduce reliance on variable hydropower.

Turn a temporary fall in oil use into a lasting one

The fall in oil use should be locked in with permanent cuts in demand before prices ease and postponed purchases resume. Member states should accelerate heat pump deployment and building renovation to replace gasoil heating, which was already in long-term decline before the Hormuz crisis. Measures to better support the electrification of industry should be implemented. The EU must uphold the [2035 zero-emission vehicle target](#), make it legally binding, and scale up charging infrastructure, since transport emissions fell by only 0.4% per year between the first halves of 2019 and 2026. Reducing fossil fuel demand protects the climate and shields household budgets from the next price shock.

Target support where emissions are rising

EU funding should be directed towards country-specific measures that address the main sources of emissions growth in lagging member states. In Poland, where hard coal drove the increase, that means a clear timeline for the transition, faster replacement of coal heating in homes and services, and support for replacing coal-fired generation with renewables, battery storage, and interconnection.

Methodology

Emissions are estimated with CREA's EU CO₂ emissions tracker, which applies IPCC emission factors to the fossil fuel use recorded in [Eurostat's monthly energy statistics](#). The estimates cover CO₂ from fossil fuel combustion in power generation, industry and buildings, and domestic transport. The estimates exclude international aviation and shipping, industrial process emissions, and land use. Emissions are counted when fuel is delivered to the market, which, for oil, can differ from when and where it is burned.

In this report, comparisons between years use the first half of each year (January to June). Comparing the same months avoids introducing additional seasonal differences that would arise from, for example, comparing the first half of a year with the second half of the year before. Although we adjust some estimates for weather, those adjustments don't capture all seasonal effects, so comparing like-for-like periods provides a fairer basis for assessing year-on-year changes.

At the time of this analysis, in mid-September 2026, Eurostat's EU-wide data ran to June 2026 for oil and gas, but EU-wide coal data for March to May 2026 had not yet been published. Most member states, including Poland, had reported coal data up to June 2026. CREA's tracker estimates the missing months using power generation, gas flow, and industrial production data, along with statistical forecasts.

Weather-adjusted figures use population-weighted heating and cooling degree days (HDD and CDD), derived from [ERA5-Land temperature data](#) and [WorldPop population data](#), to estimate electricity demand under typical temperatures; non-power gas demand is adjusted using HDD only. Wind generation is normalised using [NASA POWER wind speed and temperature data](#) at wind-project locations (based on locations [published on the Global Energy Monitor's Global Wind Power Tracker](#)); observed solar generation using [ERA5-Land solar radiation](#); and hydropower generation is normalised to historical average capacity factors calculated from observed generation and ENTSO-E installed capacity.

Typical conditions are based on historical values for the same time of year. For individual member states, only power sector emissions are adjusted.

The 2030 pathway applies the 3.6% annual fall needed between 2025 and 2030, based on Climate Action Tracker's benchmark, to first-half emissions. The estimate of when the EU would reach its 2030 target level assumes that emissions continue to fall at the rate seen in the first half of 2026. The renewables and nuclear benchmark is the European Commission's Fit for 55 modelling (PRIMES), interpolated between its five-year points, with each half-year taking half of the annual figure. Emissions avoided by wind and solar growth are estimated by assuming that the extra output would otherwise have come from coal and gas plants at their average emissions intensity in the first half of 2026. [Monthly deliveries of oil products](#), [Poland's coal use](#), and [industrial production](#) come directly from Eurostat's monthly statistics, and monthly generation by country comes from [Ember](#).

National emissions results are shown only for member states whose tracker estimates closely reproduce year-on-year changes in the Global Carbon Budget for 2020 to 2024, with a correlation of at least 0.9 and an average error of no more than three percentage points. Seventeen member states meet both thresholds, but Sweden is not shown because Eurostat's monthly statistics are missing its solid fuel data for January to May 2026. Five further member states pass the average-error test but have too few comparable years for the correlation test to be applied, so they are not shown either. The EU total is estimated separately, so national figures do not add up to the EU total.

The tracker's methods are described in its [methodology document](#), and its latest estimates are available on [CREA's EU CO2 emissions tracker](#).

Methodology changes since CREA's 2025 annual report

The changes revise:

- How power-generation data are combined.
- How gas and electricity demand are weather-adjusted.
- On gap-filling, recent estimates and emissions-accounting consistency, replacing several one-off fixes with shared reconstruction and allocation rules.

Weather-adjusted demand. Gas and electricity demand decomposition uses a generalised additive model by default, allowing nonlinear trends and changing temperature sensitivity. Weather-adjusted demand replaces actual heating and cooling

conditions with historical averages for each day of the year. This revises only the demand-series calculation.

Power-generation estimation. Daily ENTSO-E generation is calibrated against Ember's monthly data and then annual totals. Correction factors are extended beyond Ember's reporting period, with outlier handling and Ember-based fallback estimates where ENTSO-E coverage is insufficient.

Gap-filling and use of annual data. Missing coal inputs are reconstructed using supply balances, annual totals and historical patterns, with seasonal profiles used to allocate annual quantities where monthly reporting is incomplete. Separate methods estimate coal used in coke production and coke consumption using historical and industrial-activity evidence. Eligibility rules differ: coke-consumption reconstruction requires short, bounded gaps and sufficient historical testing, while coking-input estimates permit fallbacks.

Recent estimates and forecasting. Internal EU gaps can use member-state data or interpolation. Recent EU estimates can use country sums that agree with historical EU figures, or seasonal year-on-year estimates selected through historical testing. Selected incomplete coal series are forecast separately; when a forecast total falls below known sector consumption, the total is raised rather than reducing the known quantities.

Consumption accounting and sector allocation. Corrections address double counting, overlapping totals and missing required inputs being treated as zero. Usable consumption figures are retained without forcing an unsupported sector split. Conditional, month-by-month rules replace the blanket allocation of Greek lignite to electricity. An explicit exception remains for disputed French coking data, so the approach is more systematic rather than entirely free of country-specific rules.

EU aggregation. Rebuilding the covered EU coal balances and replacing recent EU coal and all-fuel estimates with country-level sums requires all 27 member states. Verified omissions are corrected separately. Corrections to missing consumption can change EU totals, whereas power-only corrections transfer emissions between electricity and other uses without changing total coal emissions.

How stable are CREA's early first-half emissions estimates?

CREA reconstructed the EU CO₂ emissions data likely to have been available at successive points in 2020–2024 and compared its early estimates with later estimates based on more complete data. At the September publication point, [all five H1 estimates were within 1% of their later reference estimates, with a median revision of 0.39%](#). Annual EU CO₂ emission

estimates from CREA and the world's leading [Global Carbon Budget \(GCB\)](#) from the Global Carbon Project differed by an average of 2.02% in absolute terms.

About CREA

The Centre for Research on Energy and Clean Air (CREA) is an independent research organisation focused on revealing the trends, causes, and health impacts, as well as the solutions, to air pollution. CREA was founded in December 2019 in Helsinki and has staff in several Asian and European countries. The organisation's work is funded through philanthropic grants and revenue from commissioned research.

www.energyandcleanair.org