REPORT

Ten Years Post-Paris: global emissions growth in sharp decline

Executive Summary

Global slowdown in emissions growth

- Since the Paris Agreement was signed in 2015, total greenhouse gas (GHG) emissions have grown by just **0.32% per year**, **less than one fifth** of the annual rate observed in the decade before 2015 (2005-2014).
- **CO_2 plateauing:** Total annual CO_2 emissions grew by just **1.17% since 2015**, a dramatic slowdown from nearly **18.4% growth** in the decade before 2015.

Different trajectories, similar story

- Among the 'Big Four' emitting territories, progress on emissions has differed but the direction of travel is towards slower growth and faster declines.
- **US & EU:** Both have continued long-term declines; EU reductions have accelerated post-Paris, while the US has sustained drops despite political headwinds.
- **China's critical role:** China's 10-year average emissions growth has plunged from **8% in the runup to Paris** to **below 2% by 2023,** with further falls since, and signs of a possible peak this year. Carbon Monitor shows China's emissions between January and July 2025 **down 2.1% on the same period** in 2024.

Resilience through shocks

- Despite the emissions rebound after COVID-19 lockdowns were lifted, ongoing geopolitical upheaval, and divergent national trajectories, the overall post-Paris trend is one of sharply reduced emissions growth.

Introduction

The 2015 signing of the Paris Agreement was a landmark in international climate diplomacy and cooperation, acknowledging humanity's role in the climate crisis through the burning of fossil fuels, and setting down for the first time globally agreed targets and mechanisms to reduce emissions with the goal of limiting global heating to well below 2°C while 'pursuing efforts' to limit the increase to 1.5C. The decade since has been marked by economic and political upheaval; a global pandemic, two Donald Trump terms, war in Europe, and Brexit.

In this context, as COP30 approaches — a full decade since COP21 in Paris — it is clear that major progress has been made, driven above all by the signal that multilateral climate diplomacy sent to governments, markets and investors worldwide.

Our analysis compares global emissions data in the decade before and after[1] the Paris Agreement, finding consistent and accelerating declines in growth rates. Global investment in clean energy overtook fossil fuels in 2016 and will outstrip it by more than a factor of 2 to 1 this year (IEA, 2025). China's exports of clean technologies in 2024 alone will enable a 1% annual drop in global CO_2 emissions beyond its borders. China, the world's largest emitter, is set to peak emissions and may have already done so[2]. For many countries, and the world, Paris marked an inflection point not just in climate diplomacy, but in action on the metrics that matter.

Data and Methodology

Our analysis uses data for global CO_2 emissions from the Global Carbon Budget (Friedlingstein et al., 2024) and GHG emissions from Jones et al., (2024) collated and processed by Our World in Data. This dataset offers annual emissions timeseries for 255 global entities including nations, geographic regions and economic groupings; our analysis uses annual data from 1990 to 2023, the most recent year available at time of publication.

Comparing values from periods before and following the Paris Agreement, we calculate the overall period growth (or decline) in emissions, in addition to compound annual growth rates (CAGRs) over those periods. CAGR values show the average annual growth rate of a variable over a defined number of years, accounting for the effects of compounding; that is, growth is expressed as an average *rate* of change year-on-year, rather than assuming that growth (or decline) is linear.

[1] 2015-2023, so nine years rather than a full decade, as 2023 is generally the year with the most recent, complete data.

[2] https://www.carbonbrief.org/analysis-record-solar-growth-keeps-chinas-co2-falling-in-first-half-of-2025/

Note on data and sensitivities

The impact of recent global events, most notably the COVID-19 pandemic, has made analysis of any short-short term trends challenging, as there is insufficient data available to analyse emergent trends over the short period since the pandemic. Global GHG emissions declined sharply in 2020 as lockdowns reduced economic activity around the world, but recovered to above their pre-pandemic peak the following year and have since resumed growth broadly in line with the post-Paris trend rate to reach new highs in 2023. Our analysis considers only the longer period from the 2015 Paris Agreement up to 2023, spanning the COVID-induced dip.

Analysis of this nature is susceptible to single year anomalies which can skew overall point-to-point growth depending on the years chosen to bookend the reporting periods. To account for this risk, we also calculate growth rates over a rolling 10-year window, which allows us to demonstrate the trend in average 10-year growth rates over time (*Figure 2*). For each figure reported in *Tables 1 and 2*, we have also compared results for adjacent periods shifted +/- one year to test the sensitivity of growth rates across alternative time windows. This results in slightly different figures, but in no cases does it alter the overall direction of travel.

Results and discussion

Since Paris, growth in global GHG emissions has slowed dramatically. Annual growth since 2015 has averaged less than a third of one percent, with just over 2.5% in total growth over the period, while in the previous decade emissions rose over 5 times faster, at an average of 1.70% per year.

The slowdown is evident in CO_2 emissions data too, with falling land-use change (LUC) emissions playing a significant role in reducing the overall annual growth rate to just 0.15% since 2015.

Table 1: Global emissions growth rates pre- and post-Paris

Emissions measure	2005 – 2014 CAGR %	2005 – 2014 overall growth %	2015 – 2023 CAGR %	2015 – 2023 overall growth %
Total GHG Emissions	1.70%	16.39%	0.32%	2.62%
CO2 Emissions (excluding LUC)	2.02%	19.71%	0.82%	7.24%
CO2 Emissions (including LUC)	1.89%	18.38%	0.15%	1.17%

Figure 1: Global annual CO_2 emissions (Gt)

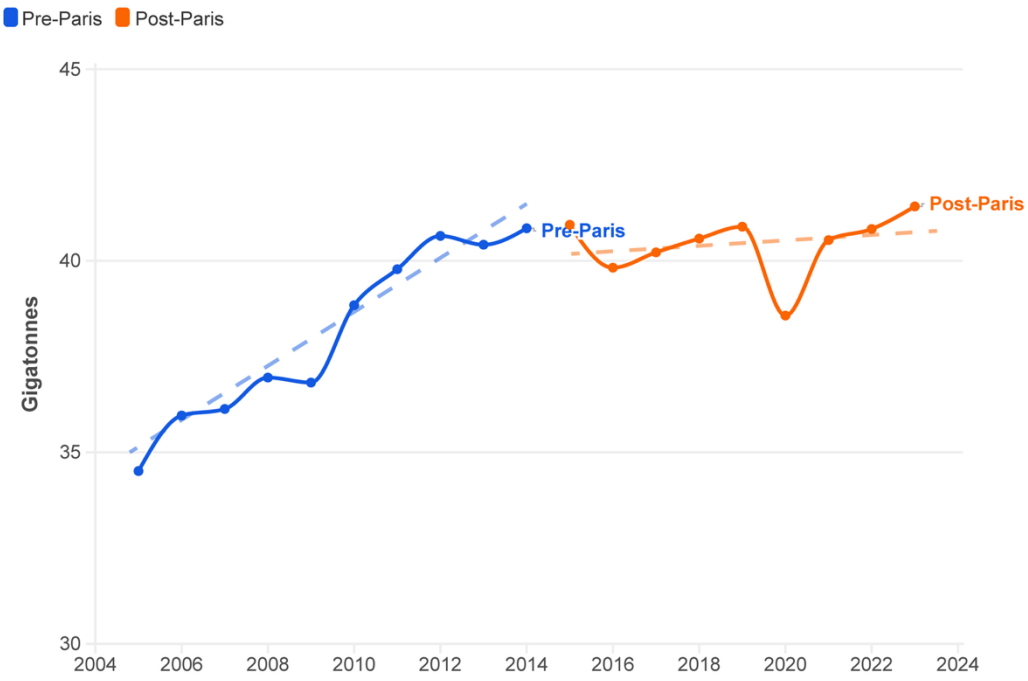

Figure 1: Global CO2 emissions pre and post Paris. Data: Global Carbon Budget 2024, ECIU analysis

The global picture of a marked slowdown illustrated in *Figure 1* masks a more mixed picture at the national level. *Table 2* details pre- and post-Paris CO_2 emissions growth rates for the 'big four' largest emitting geographies, which collectively account for just over half of global emissions.

Both the EU and US were already experiencing falling emissions prior to 2015, and both have continued to drop in the decade since. The pace of EU emission reductions has accelerated from a 2.23% per year cut to a 2.59% per year cut.

US emissions have slightly slowed their descent but still dropped 7% overall. New analysis from the Net Zero Tracker demonstrates that despite the second Trump administration's withdrawal from the Paris Agreement, 19 states representing about half of US GDP remain committed to net zero targets, as do most U.S. companies representing more than $12 trillion in global revenue.[3]

Meanwhile, India's emissions continue to rise, but the 10-year average growth rate began dropping in 2014, and has since fallen to less than half its pre-Paris peak.

[3] See Net Zero Stocktake 2025, https://zerotracker.net/analysis/net-zero-stocktake-2025

Table 2: 'Big Four' CO_2 (incl. LUC) emissions growth rates pre- and post-Paris

Country	2005 – 2014 CAGR %	2005 – 2014 overall growth %	2015 – 2023 CAGR %	2015 – 2023 overall growth %
EU	-2.23%	-18.34%	-2.59%	-18.94%
USA	-1.12%	-9.60%	-0.91%	-7.07%
China	5.27%	58.83%	2.10%	18.08%
India	6.82%	81.08%	3.17%	28.32%

As *Figure 2* illustrates, the most significant trend is seen in China, where 10-year average emissions growth has plunged from a high of over 8%, to relative stability below 2%. Accounting for 21.6% of total global CO_2 emissions in 2023 and 95% of net fossil fuel demand growth since 2018 (EMBER, 2025), China's trajectory is critical to global progress. Emerging data suggests that its emissions may in fact now have peaked, with Carbon Brief reporting a 1% drop in the first half of 2025 from the same period last year.[4]

[4] https://www.carbonbrief.org/analysis-record-solar-growth-keeps-chinas-co2-falling-in-first-half-of-2025/

Figure 2: Rolling 10-year growth rate of CO_2 gas emissions (incl. LUC)

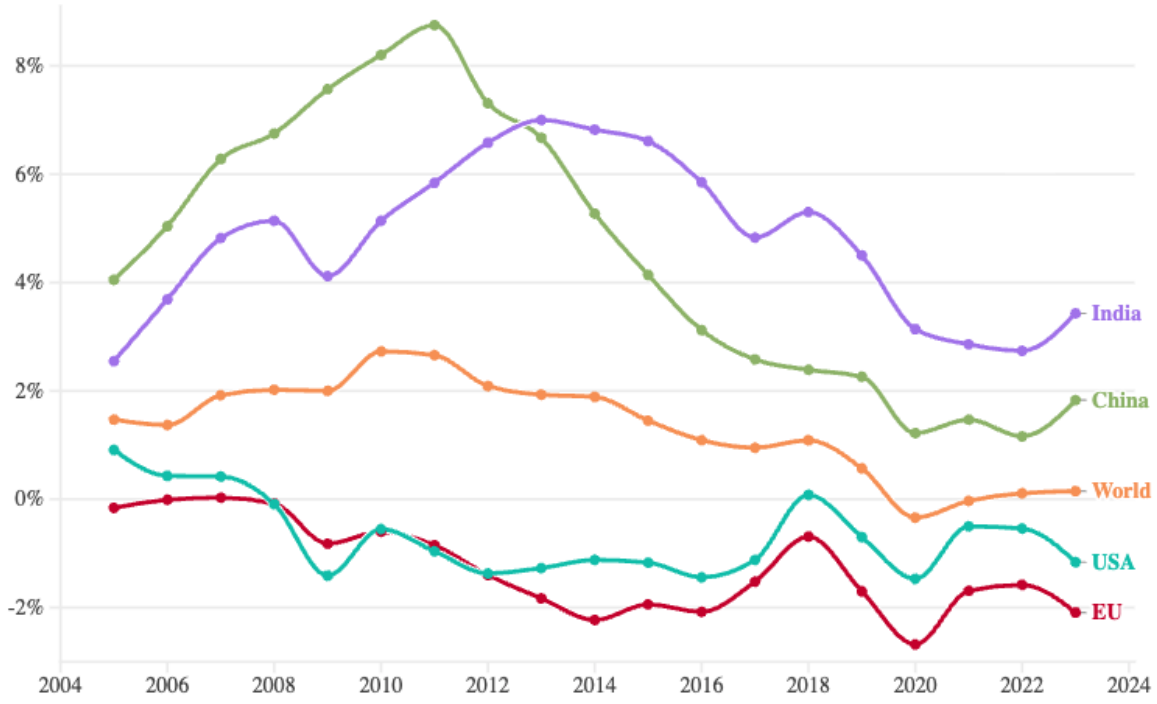

Figure 2: Rolling 10 year CO_2 emissions CAGR in selected geographies. Data: Global Carbon Budget, ECIU analysis

Conclusion

A decade on, the Paris Agreement has delivered measurable results: global emissions growth has slowed to a fraction of its pre-2015 pace, and clean energy momentum, led by solar deployment, is unstoppable. While national paths diverge, the collective direction is clear — Paris marked the beginning of a sustained shift away from high-carbon growth.

Sources

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