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Climate & Environment

Climate Update Report

Q1 – January–March 2026

Editorial Summary

> *"The conflict in the Middle East is having significant impacts on global oil and gas markets, with major implications for energy security, energy affordability and the global economy."*
>
> – Fatih Birol, Executive Director, International Energy Agency – March 11, 2026

Multiple agencies confirmed that 2025 was the 3rd hottest year on record, coming in just behind 2023 despite occurring under La Niña cooling conditions—a distinction that makes the result even more concerning—while 2024 retained the top spot. Three consecutive record-setting years now constitute a 'warming spike,' with the underlying trend persisting even as natural variability works against it. NOAA reported that January and February 2026 are the 5th warmest since records began, while March tied for 2nd, and forecasts place 2026 to be among the top 7 warmest years on record. Entering 2026, the remaining carbon budget consistent with limiting warming to 1.5°C has effectively been exhausted.

In February, Climate TRACE released full-year 2025 emissions data showing global greenhouse gas emissions increased 0.5%, reaching a new record of 60.63 billion tons CO_2e. Global methane also set a new annual record at 412.59 Mt CH_4. Oil and gas production saw the largest sectoral emissions jump at 4.1%. For the first time since at least 2015, China's power sector emissions decreased year-over-year, but this was also offset by an equivalent increase in U.S. power emissions. However, the rate of global emissions growth has been cut in half, from approximately 1% per year to 0.5% over the past two years, with China's annual increase slowing from a 2015-2023 average of 2.66% to just 0.28% in 2025. This is an encouraging signal toward peak emissions, though record global coal consumption and continued approvals of new coal capacity complicate the outlook.

Among the biggest news was that the U.S. again withdrew from the Paris Agreement, formalized on January 27. Then on February 28, a U.S.-Israeli military campaign against Iran triggered the worst energy supply shock since the 1970s. The near-total halt of shipping through the Strait of Hormuz removed roughly 1/5th of global oil and gas supply from the market, sending Brent crude well past $100 per barrel to $140+. The IEA projected an 8 million barrel per day drop in global oil supply for March and coordinated the largest emergency reserves release in its history at 400 million barrels. The crisis has exposed the structural vulnerability of the global energy system to fossil fuel supply disruptions, with cascading effects on fuel prices, food costs, fertilizer supply, and inflation. For the GCC as well as Asia, the implications are immediate and severe.

Despite political headwinds in the U.S., the renewable energy transition continues to accelerate. Solar and wind surpassed coal as a global electricity source for the first time in 2025, meeting 109% of new electricity demand worldwide. More than 600 GW of solar was added globally, led by China, which installed a record 315 GW. U.S. EIA data projects solar, wind, and battery storage will add 62% more capacity in 2026 than in 2025. China's solar capacity alone is on track to surpass its coal this year.

In climate diplomacy, COP31 will be held in Antalya, Turkey, in November 2026 under a dual-presidency arrangement with Australia leading negotiations. Key issues include operationalizing the $300 billion per year climate finance commitment and advancing the next round of nationally determined contributions. The Climate Change Performance Index 2026 ranked the U.S. 65th out of 67 countries, alongside Saudi Arabia and Iran, while Denmark, the UK, and Morocco led. Climate finance markets have held broadly steady, with Moody's forecasting $900 billion in sustainable bond issuance for 2026 and global sustainable fund assets rising 15% to $3.9 trillion.

Q1 2026 has reinforced that energy security and climate action are not competing priorities but convergent ones. Structural progress in clean energy is accelerating while the global economy remains exposed to fossil fuel disruptions. Whether the current crisis translates into accelerated policy or temporary alarm will shape the trajectory for the rest of the year and the road to COP31.

Key Events

- World Future Energy Summit & 16th IRENA Assembly — Abu Dhabi, UAE. 11-15 January
- World Economic Forum — Davos, Switzerland. 19-23 January
- North Sea Summit — Hamburg, Germany. 26 January
- Chatham House Climate & Energy Summit — London, U.K. 10-11 March

Key Reports

- Ember — *European Electricity Review 2026*, January
- UNU-INWEH — *Global Water Bankruptcy: Living Beyond Our Hydrological Means*, January
- International Energy Agency (IEA) — *Electricity 2026*, February
- World Meteorological Organization (WMO) — *State of the Global Climate 2025*, March

Reports Highlights

IEA — Electricity 2026

- Global electricity demand forecast to grow at 3.6% annually through 2030 — 50% faster than the previous decade — driven by industry, EVs, AI data centers, and cooling
- Renewables and nuclear combined on track to supply ~50% of global electricity by 2030; solar PV alone accounting for over 60% of new generation growth
- Power sector emissions stabilized in 2025 and forecast to plateau through 2030 — but grid investment must rise 50% by 2030 to keep pace with demand

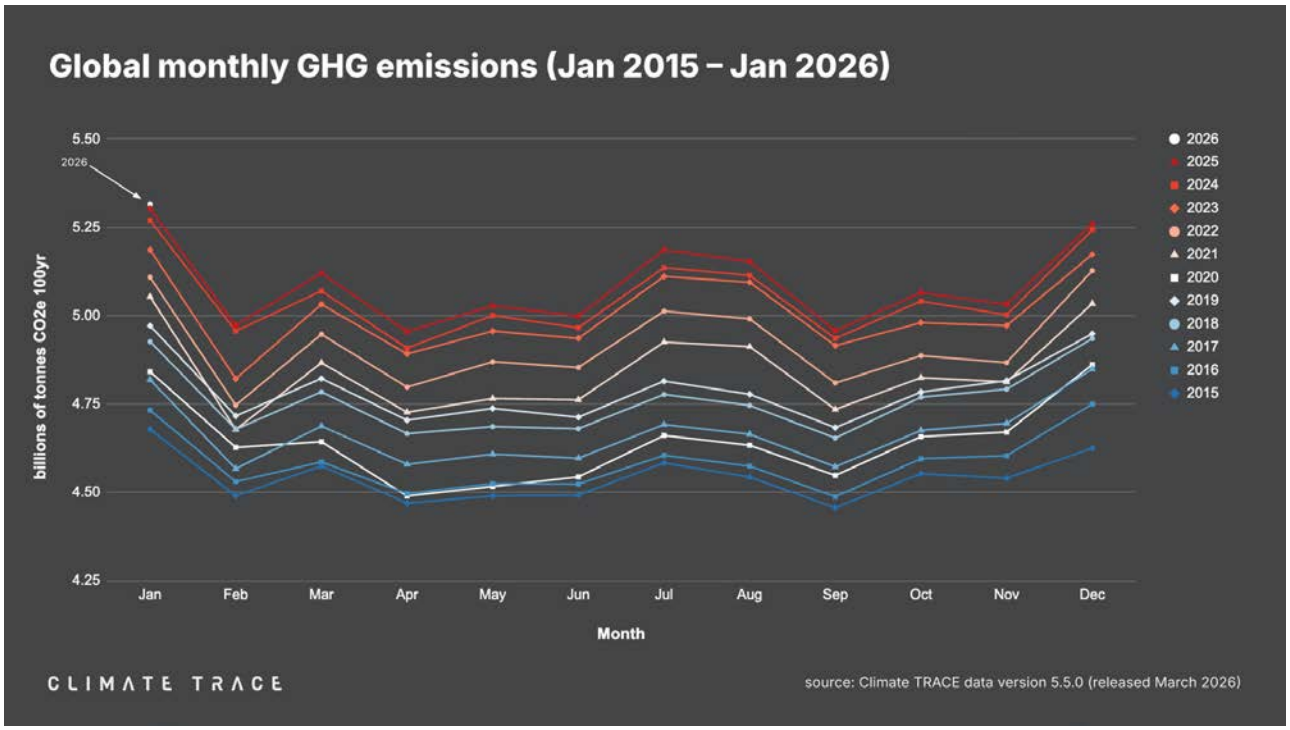
UNU-INWEH — Global Water Bankruptcy

- Coins a new threshold— “water bankruptcy" —a post-crisis, irreversible condition where water systems can no longer return to historical baselines, distinct from a temporary "water crisis"
- Nearly 75% of the global population lives in water-insecure or critically water-insecure countries; ~4 billion experience severe scarcity for at least 1 month per year
- Calls for a shift from crisis response to "bankruptcy management"—protecting remaining natural capital, restructuring unsustainable claims, and resetting the global water agenda at the 2026 and 2028 UN Water Conferences

WMO — State of the Global Climate 2025

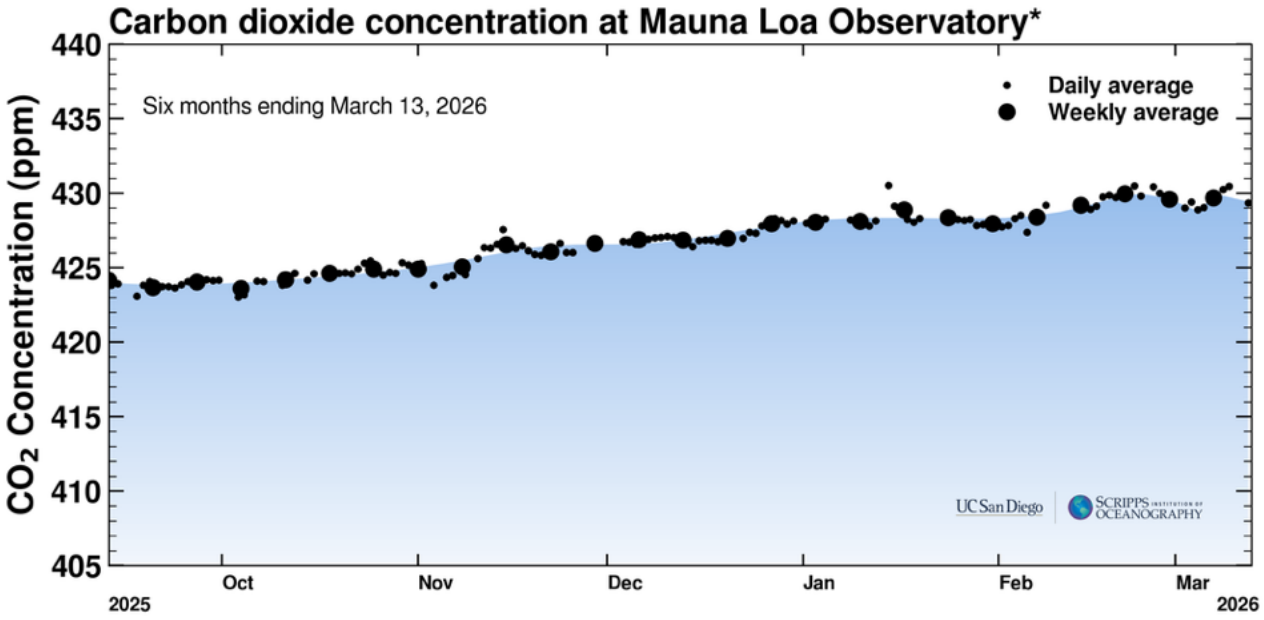
- 2015–2025 confirmed as the 11 hottest years on record; 2025 ranked second or third warmest at ~1.43°C above pre-industrial levels
- Earth's energy imbalance reached a record high—introduced for the first time as a formal climate indicator; oceans are absorbing 90%+ of excess heat
- Sea level is now ~11 cm above 1993 levels; Arctic sea ice is at or near record lows; glacier retreat continues unabated

Carbon Emissions Data



Total global full year emissions of **60.63 billion** tons of CO_2e—0.5% increase YoY.

The remaining carbon budget to meet the Paris Agreement temperature target of 1.5°C is effectively exhausted. According to independent researchers at Carbon Monitor and the Global Carbon Project, global carbon pollution increased by about 1% in 2025, while U.S. emissions reversed their long-term downward trend to again increase in 2025. Atmospheric CO_2 continues to climb:



Top 10 Countries by Total 2025 GHG Emissions

Country	Total GHG Emissions	Absolute Change vs. 2024	Percentage Change vs. 2024
1. China	17.4 Bt	48.8 Mt	0.28%
2. United States	7.0 Bt	16.2 Mt	0.23%
3. India	4.22 Bt	-27.5 Mt	-0.65%
4. Russia	3.2 Bt	51.6 Mt	1.64%
5. Indonesia	1.55 Bt	13.2 Mt	0.86%
6. Brazil	1.38 Bt	19.5 Mt	1.43%
7. Iran	1.28 Bt	-1.1 Mt	-0.09%
8. Japan	1.28 Bt	-5.3 Mt	-0.41%
9. Saudi Arabia	1.05 Bt	22 Mt	2.14%
10. Canada	0.95 Bt	0.34 Mt	0.04%

CLIMATE TRACE

source: Climate TRACE data version 5.4.0 (released February 2026)

Top 10 Countries with Largest Emissions Increase

Country	Absolute Change vs. 2024	Percentage Change vs. 2024
1. Russia	51.6 Mt	1.64%
2. China	48.8 Mt	0.28%
3. Kazakhstan	22.7 Mt	5.77%
4. Saudi Arabia	22 Mt	2.14%
5. Brazil	19.5 Mt	1.40%
6. United States	16.2 Mt	0.20%
7. Libya	15.4 Mt	10.79%
8. Iraq	15 Mt	3.01%
9. Indonesia	13.2 Mt	0.86%
10.Pakistan	12.5 Mt	2.08%

Top 10 Countries with Largest Emissions Decrease

Country	Absolute Change vs. 2024	Percentage Change vs. 2024
1. India	-27.5 Mt	-0.65%
2. Mexico	-7.2 Mt	-0.88%
3. Australia	-7 Mt	-0.86%
4. Japan	-5.3 Mt	-0.41%
5. Ukraine	-2.9 Mt	-1.02%
6. Greece	-2.7 Mt	-2.81%
7. France	-2.2 Mt	-0.50%
8. Poland	-2.2 Mt	-0.55%
9. Ecuador	-1.5 Mt	-1.67%
10. Germany	-1.5 Mt	-0.20%

CLIMATE TRACE

source: Climate TRACE data version 5.4.0 (released February 2026)

Global Temperature Records

NASA confirmed that 2025 was effectively tied with 2023 as the 3rd-warmest year on record (0.01°C cooler), with global temperatures averaging 1.19°C above the 1951–1980 baseline; 2024 remains the hottest year on record. February 2026 was the 5th-warmest February since records began in 1850, with temperatures 1.18°C above the 20th-century average. The January–February 2026 period was also the 5th-highest on record, and NOAA projects 2026 will likely rank among the 7 warmest years. March 2026 breaks into the top 3 table, tied for 2nd on record and just 0.01°C behind the 2025 mark.

Hottest on Record	1st		2nd		3rd	
January	**2025**	+1.31°C	**2024**	+1.29°C	**2020**	+1.17°C
February	**2024**	**+1.40°C**	**2016**	+1.31°C	**2025**	+1.22°C
March	**2025**	+1.32°C	**2026**	+1.31°C	**2024**	+1.31°C
April	**2024**	+1.26°C	**2025**	+1.20°C	**2020**	+1.13°C
May	**2024**	+1.15°C	**2025**	+1.06°C	**2020**	+1.00°C
June	**2024**	+1.17°C	**2023**	+1.06°C	**2025**	+0.95°C
July	**2024**	+1.18°C	**2023**	+1.16°C	**2025**	+0.96°C
August	**2024**	+1.24°C	**2023**	+1.24°C	**2025**	+1.06°C
September	**2023**	**+1.40°C**	**2024**	+1.22°C	**2025**	+1.15°C
October	**2023**	+1.37°C	**2024**	+1.34°C	**2025**	+1.23°C
November	**2023**	**+1.43°C**	**2024**	+1.33°C	**2025**	+1.18°C
December	**2023**	+1.39°C	**2024**	+1.30°C	**2019**	+1.13°C

December '25: +1.05°C (*#5*) | January '26: +1.12°C (*#5*) | February '26: +1.18°C (*#5*) | March '26: +1.31°C (*#2*)

NOAA gives less than 1% chance that 2026 will surpass 2024's overall record, but a 75% chance of ranking among the top 5 warmest years. La Niña conditions are expected to end in the January–March 2026 period. Berkeley Earth described the past 3 years' warming as a "warming spike" that may indicate acceleration in the rate of climate change, with all records persisting despite La Niña cooling.

Climate Security Nexus

Water Security

- The WEF *Global Risks Report 2026*, released at Davos in January, placed natural resource shortages sixth and extreme weather events third in the two-year risk outlook—but in the 10-year horizon, environmental risks dominate entirely, with extreme weather, biodiversity loss, and critical change to Earth systems occupying the top three positions. Flooding, heat stress, water scarcity and ecosystem degradation are already posing material risks to logistics networks, workforce safety and fiscal stability—while estimates suggest approximately 40% of intrastate conflicts over recent decades have been linked to natural resource pressures. The report's framing reinforces a pattern that water stress is consistently underweighted in near-term political risk calculus despite driving many of the risks that often rank above it.

Energy Security

- The U.S.–Israeli military campaign against Iran, beginning 28 February, triggered the most severe energy supply shock since the 1970s. The conflict in the Middle East has disrupted oil and fertilizer flows through the Strait of Hormuz, a key artery for global agrifood supply. Brent crude futures surged rapidly before then easing to around $92 per barrel. Compared to the pre-conflict price of $70 per barrel, the past month has sat between $97 and $112 per barrel. The IEA projected a drop of 8 million barrels per day in global oil supply for March and coordinated the largest emergency reserve release in its history. The crisis has exposed the structural vulnerability of the fossil fuel-dependent global energy system to single-point geopolitical disruption. For the GCC and Asia-Pacific, the implications are immediate, spanning fuel costs, food prices, fertilizer supply, and inflation. The episode has strengthened the energy security case for accelerated energy transition and greater energy independence—but the short-term demand shock is expected to complicate investment signals heading into Q2. In mid-January Ember reported that solar met 61% of new US electricity demand growth.

Food Security

- A staggering 318 million people were already facing crisis levels of hunger or worse in 2026, according to the WFP's 2026 Global Outlook, with two simultaneous famines confirmed in parts of Gaza and Sudan—a devastating first this century. The UN World Food Program estimates that the Hormuz conflict could push an additional 45 million people into acute hunger by mid-2026, while the FAO warns that energy price shocks and trade route disruptions are setting the stage for sharper food price increases in the months ahead. World Bank commodity data shows urea prices surging by nearly 46% month-on-month in February–March 2026, directly threatening agricultural input supplies in import-dependent regions across the Middle East, East Africa, and South Asia. Conflict remains the primary driver—but climate shocks and economic fragility are compounding already critical baselines.

Climate Diplomacy

- The United States formally completed its withdrawal from the Paris Agreement on 27 January 2026, one year after the depositary notification submitted under the January 2025 executive order. The withdrawal reduces the Agreement to 194 parties and leaves the United States alongside Iran, Libya, and Yemen as the only countries not party. In a separate action on 7 January 2026, President Trump signed a presidential memorandum directing US withdrawal from the UNFCCC, the IPCC, the Green Climate Fund, and 63 other international organizations, with the UNFCCC withdrawal taking effect one year from notification. The combined retreat represents the most significant institutional disengagement from multilateral climate governance since the Paris Agreement's adoption and has accelerated debate about the long-term viability of consensus-based climate architecture while creating a vacuum that China, the EU, and emerging-economy blocs are actively positioning to fill.
- COP30 in Belém, Brazil (10–22 November 2025) concluded with the Belém Political Package, 29 negotiated decisions adopted as the "Global Mutirão" (collective effort). Countries committed to triple adaptation finance by 2035 and double it by 2025, established the Belém Mechanism for a Just Global Transition, and confirmed operationalization and replenishment cycles for the Loss and Damage Fund. The summit reaffirmed the UAE Consensus on transitioning away from fossil fuels but did not deliver a binding fossil fuel phase-out timeline, with critics characterizing the finance framework as incremental given that the Baku-to-Belém Roadmap to mobilize $1.3 trillion annually by 2035 "remains aspirational rather than operational" against UNCTAD estimates of $900 billion needed from 2025 rising to $1.46 trillion by 2030. The $300 billion annual goal for developed-country climate finance to developing countries by 2035, agreed at COP29 in Baku, remains the headline figure heading into COP31.
- On 26 March 2026, India submitted its third Nationally Determined Contribution under the Paris Agreement, pledging to reduce emissions intensity of GDP by 47% by 2035 from 2005 levels, achieve a 60% share of non-fossil sources in installed electricity capacity by 2035, and create a carbon sink of 3.5–4 billion tons of CO_2 equivalent through forest and tree cover. India's submission, made shortly before the original NDC deadline lapsed, was widely framed as a signal of continued multilateral engagement from the Global South at a moment of Northern retreat. India's non-fossil installed capacity had already reached 52.57% by February 2026, surpassing the previous 50% target nearly five years ahead of the 2030 deadline. The new 60% target is projected to be achieved by 2028 at current trajectories.
- Climate governance is undergoing a structural shift towards Global South host countries, with COP31 to be co-hosted by Türkiye and Australia in 2026 and COP32 by Ethiopia in 2027 representing the African Group. Selection of the COP33 (2028) host has been complicated by India's withdrawal of its bid on 2 April 2026, with the country citing "a review of its commitments

for 2028" and South Korea now the only known contender within the Asia-Pacific Group. Climate finance remains the defining fault line in negotiations, with the operationalization of the Baku $300 billion goal, the broader $1.3 trillion mobilization target, and access barriers to the Green Climate Fund all unresolved heading into COP31.

- The IPCC's seventh assessment cycle (AR7), more than two and a half years into its workplan, faces compounding pressures on both timeline and financing. For a fifth consecutive meeting, countries failed at IPCC-64 in Bangkok (24–27 March 2026) to agree on whether the three Working Group reports and Synthesis Report should be completed before or after the second UNFCCC Global Stocktake in 2028. The disagreement falls largely along familiar lines: Saudi Arabia, China, India, and Russia have opposed pre-stocktake delivery, while the EU, France, the Netherlands, and small-island states have argued that publication after the stocktake would render the reports policy-irrelevant. The IPCC trust fund is simultaneously approaching exhaustion, with 2025 contributions reaching only 1.2 million Swiss francs, a sharp decline from previous annual totals. The IPCC secretariat has presented nine funding scenarios for 2026–29, with Chair Jim Skea warning that without substantial new contributions or expenditure cuts, completion of AR7 would be jeopardized. The next session, IPCC-65, is scheduled for Addis Ababa in October 2026.

Climate Resilience

- The first months of 2026 were marked by extreme weather across both hemispheres. In southern Africa, weeks of torrential rainfall through late December 2025 and January 2026 caused catastrophic flooding in Mozambique, affecting more than 650,000 people, displacing nearly 400,000, and damaging or destroying over 30,000 homes across seven provinces. South Africa declared a national disaster on 18 January after rains killed at least 30 people in Limpopo and Mpumalanga, and a World Weather Attribution study found heavy downpour intensity across Mozambique, South Africa, Zimbabwe, and Eswatini has increased by roughly 40% since pre-industrial times. Across the Northern Hemisphere, a weakened polar vortex drove severe cold across North America, Europe, and parts of Asia. Europe recorded its coldest January since 2010 at 1.63°C below the 1991–2020 average, with back-to-back storms causing flooding from Ireland and the United Kingdom to the Iberian Peninsula and the Mediterranean. In northern Japan, snow depth in Aomori Prefecture reached 1.7 meters on 3 February, the deepest in 40 years according to the Japan Meteorological Agency. A severe cold wave gripped North America from late January through early February, with temperatures as low as −41.6°C (−43°F) in parts of the central United States, and a historic blizzard struck the U.S. Northeast on 22–24 February, dropping up to three feet of snow from Philadelphia to Boston.

- In the Southern Hemisphere, record-breaking heat fueled devastating wildfires. From 5–10 January, south-eastern Australia experienced its most severe heatwave since the 2019–20 Black Summer, with maximum temperatures consistently above 40°C. A second heatwave in late January saw Andamooka and Port Augusta in South Australia reach 50.0°C on 29 and 30 January, and 12 weather stations across New South Wales and South Australia exceeded 49°C in a single week. Victorian bushfires destroyed more than 700 structures and burned over 400,000 hectares. In Chile, deadly wildfires across the Biobío and Ñuble regions killed at least 21 people and triggered a state of catastrophe, while fires also burned through Patagonian native forests. World Weather Attribution found climate change made the early January Australian heat approximately 1.6°C hotter and five times more likely. In late February, extreme rainfall triggered severe flooding and landslides in Brazil's Minas Gerais state, killing 73 people, with February 2026 becoming the wettest month ever recorded in Juiz de Fora.

- In late March, a record-shattering heatwave gripped the south-western United States and northern Mexico, with temperatures rising 11–17°C above average across parts of California,

Nevada, and Arizona. A new U.S. national March temperature record of 112°F (44.4°C) was set, and 10 states recorded their warmest March on record. The average contiguous U.S. temperature for March was 9.4°F above the 20th-century average, the first monthly anomaly on record to exceed +9°F. World Weather Attribution concluded the event would have been "virtually impossible" without human-induced climate change, finding it had added 2.6–4°C to observed temperatures, while Climate Central's Climate Shift Index reached its highest possible value (CSI 5) over approximately 29% of the continental U.S. on 20 March, the largest extent on record. Yale Climate Connections ranked the event among the 6 most meteorologically astonishing extreme events of the 21st century.

- Arctic winter sea ice reached its annual maximum on 15 March at 14.29 million km^2 (5.52 million square miles), effectively tying with 2025 for the lowest winter peak in the satellite record. NASA and the NSIDC reported the maximum was roughly half a million square miles below the 1981–2010 average, an area twice the size of Texas. ICESat-2 satellite data showed much of the ice pack is thinner than in previous years, particularly in the Barents Sea. Total Arctic sea ice volume in March 2026 was the lowest on record, approximately 15% lower than mid-March 2024.

Decarbonization

- On 7 January 2026, the United States announced its withdrawal from the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC), as part of a broader executive order suspending US support for 66 international organizations. The UNFCCC, ratified by the US Senate in 1992 and signed by 197 countries, is the foundation treaty for international climate cooperation including the Paris Agreement. Once the withdrawal takes effect one year from signing, the United States will be the only country in the world not party to the UNFCCC. On 12 February 2026, the EPA finalized the rescission of the 2009 Endangerment Finding, removing the legal basis for federal greenhouse gas regulation under the Clean Air Act and repealing all federal GHG emission standards for motor vehicles. The same week, President Trump accepted the inaugural "Undisputed Champion of Beautiful Clean Coal" award from the Washington Coal Club at a White House event, where he signed an executive order directing the Department of Defense to procure electricity from coal-fired plants. The administration has used DOE Section 202(c) emergency orders to prevent the retirement of five aging coal-fired plants in Colorado, Indiana, Michigan, Pennsylvania and Washington state, with administration officials indicating the policy aim is "100% stay open, no more retirements".
- The EU's Carbon Border Adjustment Mechanism (CBAM) entered its definitive phase on 1 January 2026, becoming the first fully operational border carbon adjustment policy to impose financial costs based on the embedded emissions of imported goods. CBAM covers cement, iron and steel, aluminium, fertilizers, electricity, and hydrogen, capturing more than 50% of emissions in EU ETS-covered sectors when fully phased in. Importers exceeding the 50-tonne annual threshold must register as authorised CBAM declarants and surrender certificates corresponding to embedded emissions, with the first certificate sales beginning 1 February 2027. The European Commission also proposed a Temporary Decarbonization Fund using 25% of CBAM revenues for 2028–29 to support exposed energy-intensive EU industries. Major trading partners including China, India, and Russia have described the measure as protectionist and questioned its compatibility with WTO rules, while CBAM is already accelerating carbon pricing discussions in Canada, the UK, Australia, and Turkey.
- Global investment in the low-carbon energy transition reached a record $2.3 trillion in 2025, up 8% year-on-year, with electrified transport at $893 billion (+21%), renewable energy at $690 billion, and grid investment at $483 billion, according to BloombergNEF's Energy Transition

Investment Trends 2026. Clean energy supply investment exceeded fossil fuel supply investment for the second consecutive year, with the gap widening to $102 billion. Renewable energy investment fell 9.5% year-on-year, driven by regulatory uncertainty in China following June 2025 reforms that moved new wind and solar projects from guaranteed subsidized rates to competitive market pricing. China remained the largest market at $800 billion despite its first decline in renewable funding since 2013, while the EU grew 18% to $455 billion and India rose 15% to $68 billion. Global EV sales reached approximately 20.7 million units in 2025, accounting for roughly one in four new cars sold worldwide, with BloombergNEF projecting 40% of global car sales by 2030. Lithium-ion battery pack prices fell to an average of $108/kWh, an 8% decline year-on-year.

- China's 15th Five-Year Plan (2026–2030) was adopted by the National People's Congress on 13 March 2026, setting a target to reduce carbon intensity by 17% by 2030. The target is widely regarded as less ambitious than expected, falling below the 18% target in the 14th Five-Year Plan and requiring approximately 23% reductions to align with China's existing Paris Agreement commitments. The plan also revised the basis for calculating carbon intensity to include industrial emissions, making historical reductions appear larger. Language on coal was softened from previous commitments, with the plan now calling for "promoting the peaking" of coal and oil consumption rather than reduction, and explicitly leaving space for coal use in power and chemical sectors to grow beyond the targeted peak. The plan does, however, include strong support for clean technology buildout, with non-fossil energy targeted to reach 25% of the energy mix and offshore wind to reach 100 GW by 2030. Separately, Japan's GX-ETS became mandatory on 1 April 2026, requiring approximately 300–400 firms with annual emissions exceeding 100,000 tCO_2 to participate in a baseline-and-credit system, covering roughly 60% of national emissions.
- The Climate Change Performance Index 2026, published by Germanwatch, the NewClimate Institute and CAN International in November 2025, ranked Denmark (4th), the United Kingdom (5th), and Morocco (6th) at the top, with the first three positions left vacant as no country was assessed as fully aligned with the Paris Agreement's 1.5°C limit. Saudi Arabia (67th), Iran (66th), and the United States (65th) ranked at the bottom, with the United States falling eight places year-on-year. Eleven of the G20 countries received low or very low ratings, with only the United Kingdom achieving a high rating overall. Brazil and Chile were the highest-performing G20 countries on climate policy specifically. The CCPI methodology weights GHG Emissions (40%), Renewable Energy (20%), Energy Use (20%), and Climate Policy (20%), and assesses production-based per-capita emissions only.

Renewable Energy

- Global renewable power capacity reached a record 5,149 GW at the end of 2025, with 692 GW of new capacity added during the year, the highest annual increase ever recorded. Renewables accounted for 85.6% of all new power capacity and now represent 49.4% of total global installed electricity capacity, up from 46.3% the previous year, according to IRENA's Renewable Capacity Statistics 2026, published 1 April 2026. Solar led the expansion with 511 GW added (+27.2%), accounting for approximately 75% of all renewable additions and bringing cumulative global solar capacity to 2,392 GW. Wind capacity additions reached 159 GW (+14.0%), with solar and wind together accounting for 96.8% of net renewable additions in 2025.
- Ember reported on 20 March 2026 that combined wind and solar additions reached a record 814 GW in 2025, a 17% increase year-on-year, bringing total installed wind and solar capacity past 4 TW. Ember's data, which uses a slightly different accounting methodology than IRENA, recorded 647 GW of solar and 167 GW of wind additions, with wind installations rising 47% year-on-year. The capacity added in 2025 alone is sufficient to generate an estimated 1,046 TWh of

electricity annually, enough to displace more than one-seventh of global gas-fired generation, equivalent to roughly $138 billion in annual gas import costs at current market prices. Since the outbreak of conflict between Israel, the United States, and Iran, Ember estimates that all installed wind and solar capacity worldwide has avoided the equivalent of approximately 330 TWh of gas generation, representing potential savings of more than $40 billion.

- Asia continued to lead deployment, contributing 74.2% of all new renewable capacity (513.3 GW added, +21.6%). China alone added approximately 378 GW of solar, with a record 111 GW connected in May 2025 ahead of pricing reforms for grid-connected renewables. India recorded its strongest year, adding 49 GW of solar, up from 32 GW in 2024. Brazil's grid is now 84.6% renewable, with wind and solar producing more than a third of national electricity in August 2025 for the first time on record, and Brazil remains the only G20 country currently on track to meet the COP28 goal of tripling renewable capacity by 2030. Africa posted record growth at 15.9% (+11.3 GW), driven by Ethiopia, South Africa, and Egypt.
- The Middle East recorded its strongest annual growth on record, with renewable capacity expanding 28.9% (+12.7 GW), led by Saudi Arabia. According to IRENA data, Saudi Arabia's installed renewable capacity rose 86.8% year-on-year to 12,332 MW, the largest absolute addition in the region, driven almost entirely by utility-scale solar PV. Saudi Arabia entered the global top ten renewable energy investors for the first time in 2025, with approximately $34 billion committed to clean power projects, a near 70% increase year-on-year. The UAE expanded capacity 15.4% to 7,907 MW. Oman recorded the fastest percentage growth in the GCC, with renewable capacity surging 138.5% to 1,722 MW following the commissioning of the Manah I and II solar projects, advancing the country's Vision 2040 target of nearly 40% of electricity from renewables by 2040. IRENA Director-General Francesco La Camera noted that countries that invested in the energy transition are weathering the Middle East crisis with less economic damage, citing improved energy security, resilience, and competitiveness.

Carbon Capture & Removal

- Northern Europe's first tranche of cross-border CCS projects entered operation in early 2026, anchored by Yara's flagship ammonia plant at Sluiskil in the Netherlands beginning to capture and liquefy 800,000 tons of CO_2 annually for transport by Northern Lights to permanent storage 2,600 meters beneath the Norwegian continental shelf. The binding cross-border agreement, signed in November 2023, commits to 12 million tons of storage over 15 years and represents the world's first commercial cross-border CCS arrangement in operation. Linde is constructing the world's largest CO_2 liquefaction facility on site, a €194 million investment. The development positions Europe's nascent CCS market as a functioning service infrastructure rather than a series of isolated demonstrations.
- The Gulf region continued its build-out of large-scale CCUS infrastructure aligned with national net-zero pathways and EU CBAM export pressures. ADNOC's Habshan CCUS facility in Abu Dhabi has been targeted for commissioning in 2026 with capacity to capture and permanently store 1.5 million tons of CO_2 per year, tripling ADNOC's total carbon capture capacity to 2.3 mtpa and contributing to the company's stated target of 10 mtpa by 2030. Saudi Aramco's Jubail CCS hub, developed with Linde and SLB, is advancing toward Phase 1 capacity of 9 million tons per year, within Aramco's broader target of capturing or storing 11 mtpa by 2035. The MENA region hosts 28 launched CCUS projects with combined operational capacity of approximately 4.5 mtpa, with projections of 35 mtpa by 2035. In Oman, 44.01 is operating a pilot project at Al Qabil that uses peridotite mineralization in native ophiolite formations, a technology with significant scaling potential given Oman's exceptional geological endowment.

- The world's largest direct air capture facility, Occidental's STRATOS in Ector County, Texas, secured EPA Class VI permits in April 2025 and is targeting Q2 2026 initial operations with a design capacity of 500,000 tons of CO_2 per year. Ramp-up to full capacity is expected through the rest of 2026 and 2027. Occidental is in talks with XRG, the Abu Dhabi-based investment arm of ADNOC, on a potential joint venture for a separate South Texas DAC hub. Industry analysts project that 2026 will see further CCS deals linked to natural gas power generation for data centers, alongside ethanol and fertilizer capture projects along the U.S. Gulf Coast.

- China has emerged as the largest single CCUS market by project count, with the LETA/CIAB report (January 2026) documenting over 100 projects in operation or development, focused predominantly on retrofitting coal-fired power and heavy industry. The world's largest coal-fired CCS demonstration plant began operation at the Huaneng Zhengning station in Gansu Province in late 2025, with over 90% capture efficiency and entirely domestic core equipment. Wood Mackenzie analysis published in late 2025 found Chinese state-owned developers building comparable CCUS facilities at $30-40/ton CO_2 captured against European costs above $300/ton, with completion times of approximately 18 months. The cost differential is reshaping CCS competitiveness in industries exposed to EU CBAM and is likely to accelerate Chinese export of CCUS engineering services to MENA, Southeast Asia, and beyond.

- The European Commission published the Industrial Accelerator Act (IAA) on 4 March 2026, establishing a framework targeting 20% manufacturing share of EU GDP by 2035 and capping permitting for energy-intensive industry and clean technology projects at 18 months. The Act introduces lead-market low-carbon procurement requirements applying from 1 January 2029, with EU-origin and low-carbon thresholds for steel and aluminum (25%) and concrete (5%) and creates Industrial Manufacturing Acceleration Areas to cluster decarbonization projects. CCS infrastructure at industrial sites qualifies for accelerated permitting under provisions extended from the Net-Zero Industry Act. Germany's €6 billion Carbon Contracts for Difference auction, to begin in mid-2026, will for the first time include CCS and CCU projects alongside hydrogen and electrification, offering 15-year reverse-auction contracts to firms in steel, cement, chemicals, glass and other energy-intensive sectors. The auction represents the largest single national CCS funding mechanism in Europe, with the proposed Industrial Decarbonization Bank expected as a follow-on instrument in Q2 2026. Globally, the Global CCS Institute's 2025 Status report recorded 27 new facilities online in the past 12 months—a 54% year-on-year increase—with 47 facilities in construction at a cumulative capture capacity of 44 mtpa.

Green Hydrogen

- In January 2026, China Baowu subsidiary Baowu Clean Energy launched the Baowu Qingneng Yangjiang Green Hydrogen Industrial Park in Guangdong, using a direct connection to offshore wind power to produce green hydrogen. The project is planned at 1.5 GW of renewable power input and 80,000 tons of hydrogen output per year, with hydrogen to support green ammonia production and supply Baosteel's Zhanjiang steel operations. The development reinforces China's growing lead in project execution, electrolyzer manufacturing, and hydrogen-linked industrial decarbonization.

- In Europe, the European Commission opened the next phase of its Hydrogen Mechanism on 20 January, inviting European off-takers to review more than 260 renewable and low-carbon hydrogen and derivatives supply offers submitted between November 2025 and January 2026. France Hydrogène and the German Hydrogen Association also signed a Memorandum of Understanding at Hyvolution Paris on 27 January to coordinate Franco-German market development, investment de-risking, and deployment. However, Europe's hydrogen-based industrial strategy remains constrained by demand uncertainty and financing risk, illustrated

by reports that Swedish green steel developer Stegra needs more than €2 billion in additional funding to complete its Boden plant.

- Germany continued to support hydrogen technology commercialization, with the Federal Ministry of Transport providing €54 million for the Hydrogen Innovation and Technology Centre in Pfeffenhausen, Bavaria. The center will include hydrogen infrastructure, a liquefier, and test facilities, with a focus on moving hydrogen and fuel-cell technologies from research toward industrial and mobility applications.
- In India, Q1 progress was concentrated in green ammonia. On 30 March, the government announced the exchange of Green Ammonia Purchase Agreements and Green Ammonia Supply Agreements under the National Green Hydrogen Mission, intended to build demand in the fertilizer sector and reduce exposure to imported fossil-based ammonia. ACME separately signed a 10-year agreement with SECI for 370,000 tons per year of green ammonia, indicating that India's hydrogen strategy is moving from policy design toward bankable offtake structures.

Biodiversity

- Corporate biodiversity disclosure entered a new phase at the start of 2026 as GRI 101: Biodiversity 2024 became effective for reports and other materials published from 1 January, replacing GRI 304 and requiring companies using the GRI Standards to disclose biodiversity impacts across operations, value chains, affected ecosystems, and locations of high biodiversity value.
- The IPBES Plenary in Manchester approved the Business and Biodiversity Assessment in February, formally placing business dependencies on nature, biodiversity-related risks, and corporate impacts on ecosystems into the intergovernmental science-policy process. The assessment identifies more than 100 actions for businesses, governments, financial institutions, and civil society, reinforcing the shift from voluntary biodiversity commitments toward measurable risk management and disclosure.
- Parties to the Convention on Biological Diversity faced a 28 February deadline for their Seventh National Reports under the Kunming-Montreal Global Biodiversity Framework, the first reporting cycle designed to support a collective progress review against 2030 biodiversity targets. By early March, 125 countries had submitted reports, creating the evidence base for COP17 in Yerevan, where governments will assess progress on implementation.
- The State of Finance for Nature 2026 report underscored the scale of the financing imbalance facing biodiversity policy, estimating that US$7.3 trillion flowed into nature-negative activities in 2023 while only US$220 billion supported nature-based solutions. The report identifies fossil fuel subsidies, agriculture, water, transport, construction, utilities, energy, and basic materials as major channels of nature-negative finance.
- Biodiversity finance expanded late in the quarter as the Global Environment Facility's Global Biodiversity Framework Fund approved US$73.4 million in new project preparation grants across 25 countries, including 16 countries accessing the fund for the first time. The round broadened GBFF coverage across Latin America and the Caribbean, Africa, Asia-Pacific, Eastern Europe, and Central Asia.

Climate Finance

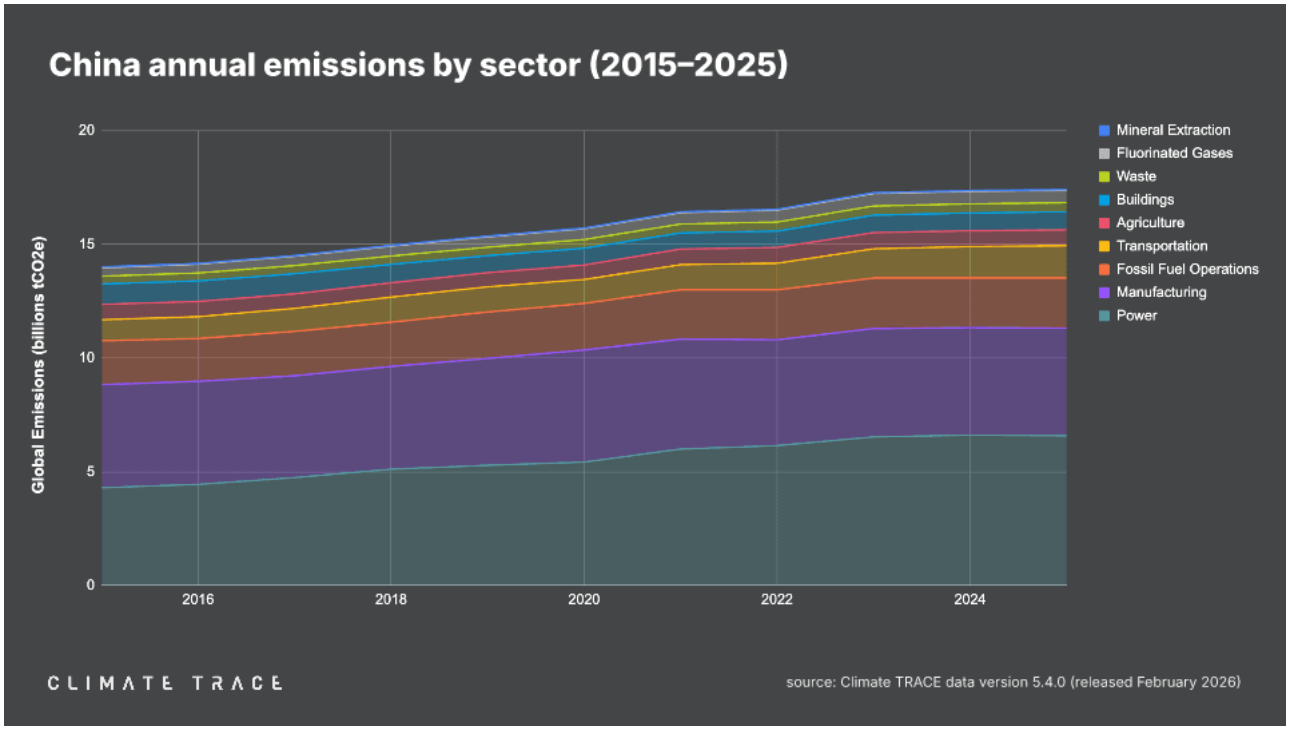
- Sustainable debt markets entered 2026 in consolidation rather than contraction, with Moody's Global Sustainable Finance 2026 outlook forecasting US$900 billion in sustainable bond

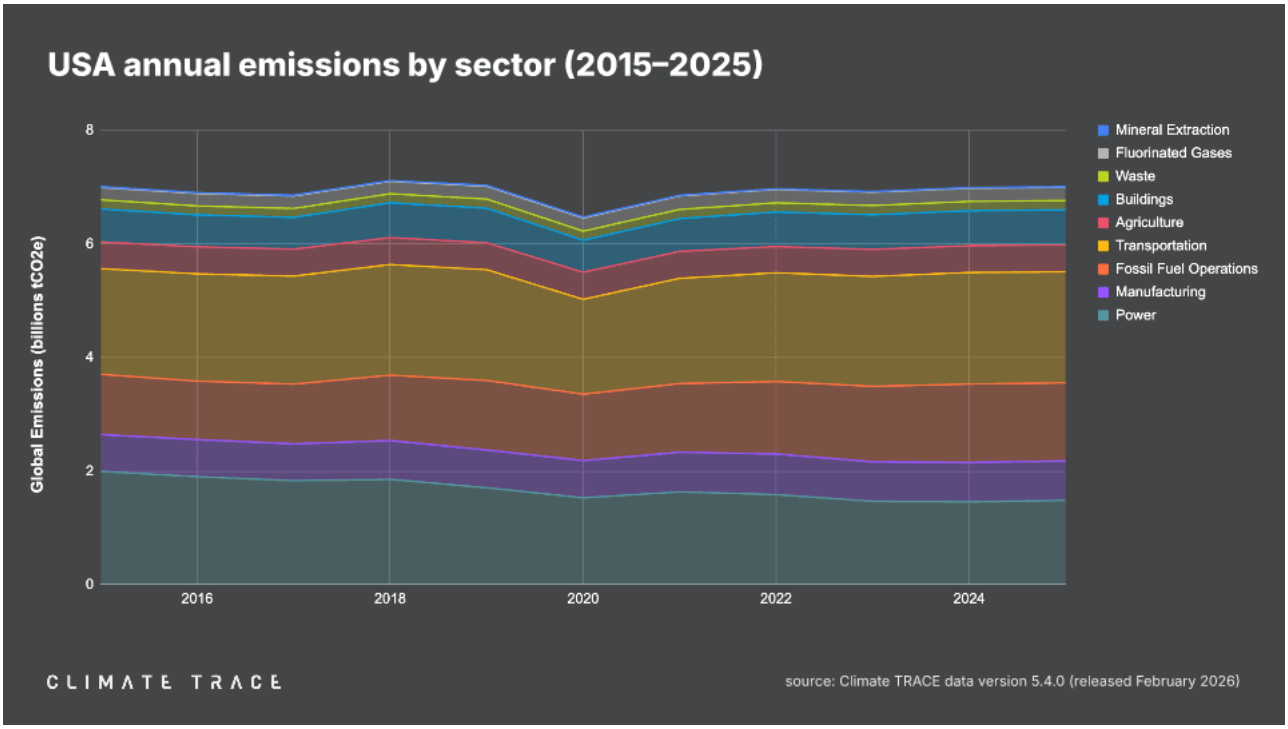
issuance for the year. Green bonds are expected to remain the largest segment, while transition, adaptation, and digital infrastructure needs are forecast to support issuance despite political headwinds and uneven regional demand.

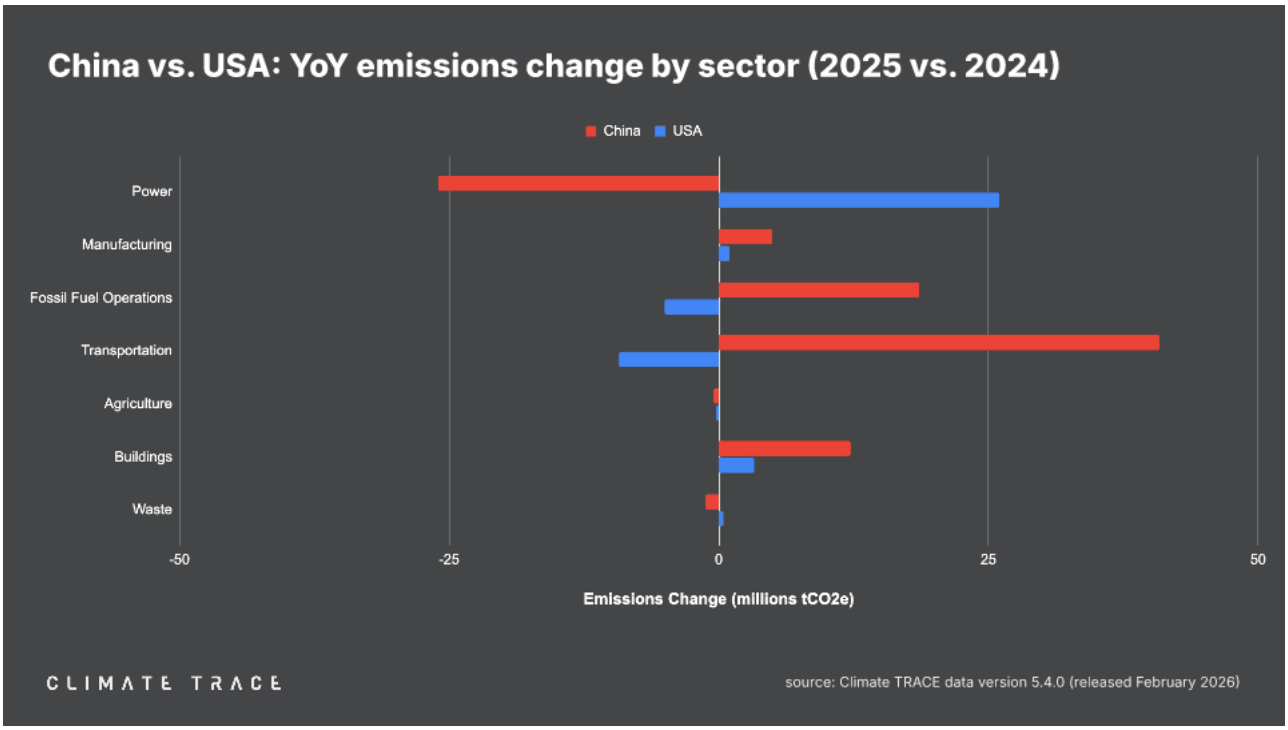
- S&P Global's February sustainable bond outlook pointed to a maturing market, with global sustainable bond debt expected to reach a record US$5.5 trillion in 2026 even after issuance fell 19% year-on-year to US$866 billion in 2025. The outlook reinforces that sustainable finance is becoming a standing part of debt markets but no longer expanding at the pace seen during the 2021–24 issuance cycle.
- Climate Bonds Initiative reported in March that cumulative aligned GSS+ debt issuance reached US$6.8 trillion by the end of 2025, with annual aligned issuance exceeding US$1 trillion for the third consecutive year. Green bonds accounted for roughly two thirds of cumulative aligned volume, while adaptation and resilience finance emerged as a growing priority for labeled debt markets.
- The Green Climate Fund expanded multilateral climate finance at its 44th Board meeting, approving US$960.3 million for 18 new projects in developing countries and lifting its total portfolio above US$20 billion across 354 projects and programs. The Board also selected host cities for new regional offices in Panama City, Amman, Nairobi, Abidjan, and Suva, aimed at improving access, oversight, and delivery in developing regions.

Climate Charts & Data Visualizations

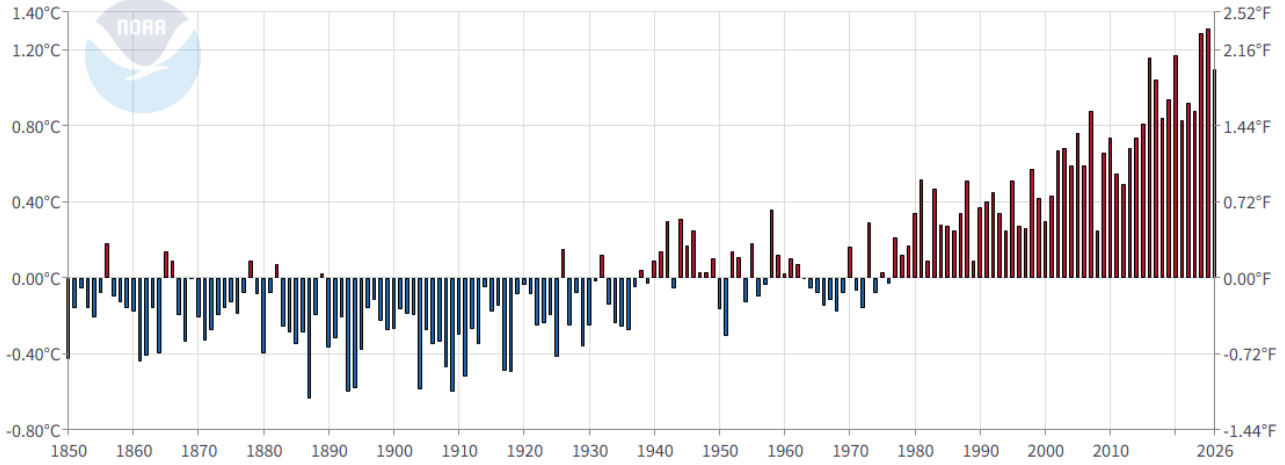
Climate TRACE – Spotlight on the US and China



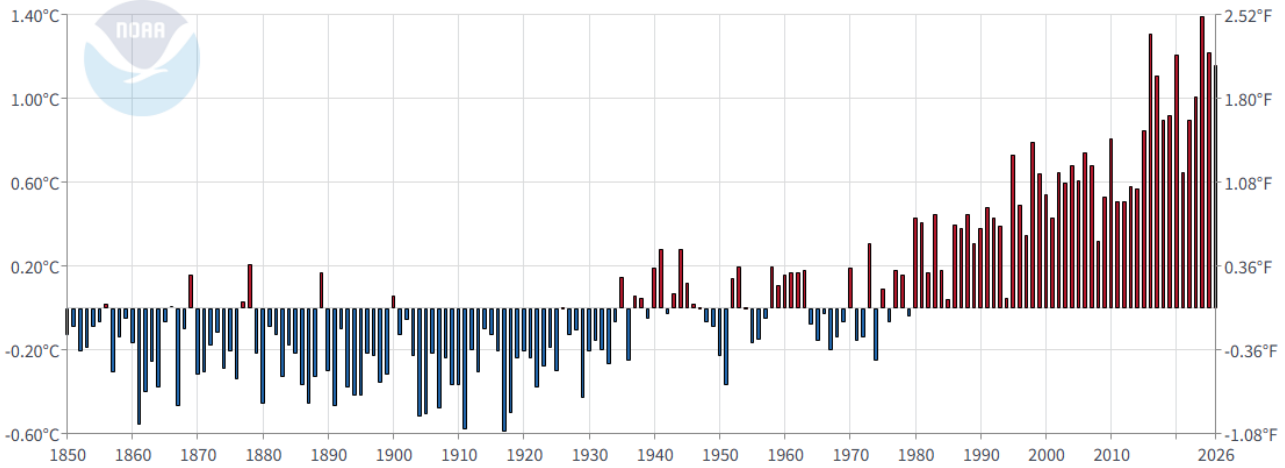

USA annual emissions by sector (2015–2025)
Global Emissions (billions tCO2e)
8
6
4
2
0
2016
2018
2020
2022
2024
Mineral Extraction
Fluorinated Gases
Waste
Buildings
Agriculture
Transportation
Fossil Fuel Operations
Manufacturing
Power
CLIMATE TRACE
source: Climate TRACE data version 5.4.0 (released February 2026)


China vs. USA: YoY emissions change by sector (2025 vs. 2024)
China
USA
Power
Manufacturing
Fossil Fuel Operations
Transportation
Agriculture
Buildings
Waste
-50
-25
0
25
50
Emissions Change (millions tCO2e)
CLIMATE TRACE
source: Climate TRACE data version 5.4.0 (released February 2026)

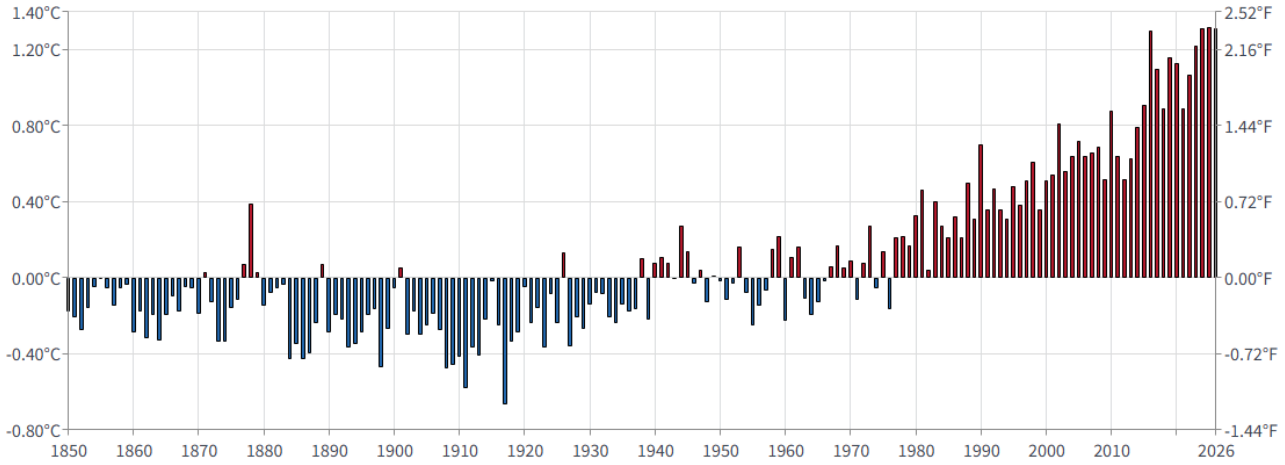
Global Land and Ocean Average Temperature Anomalies
January



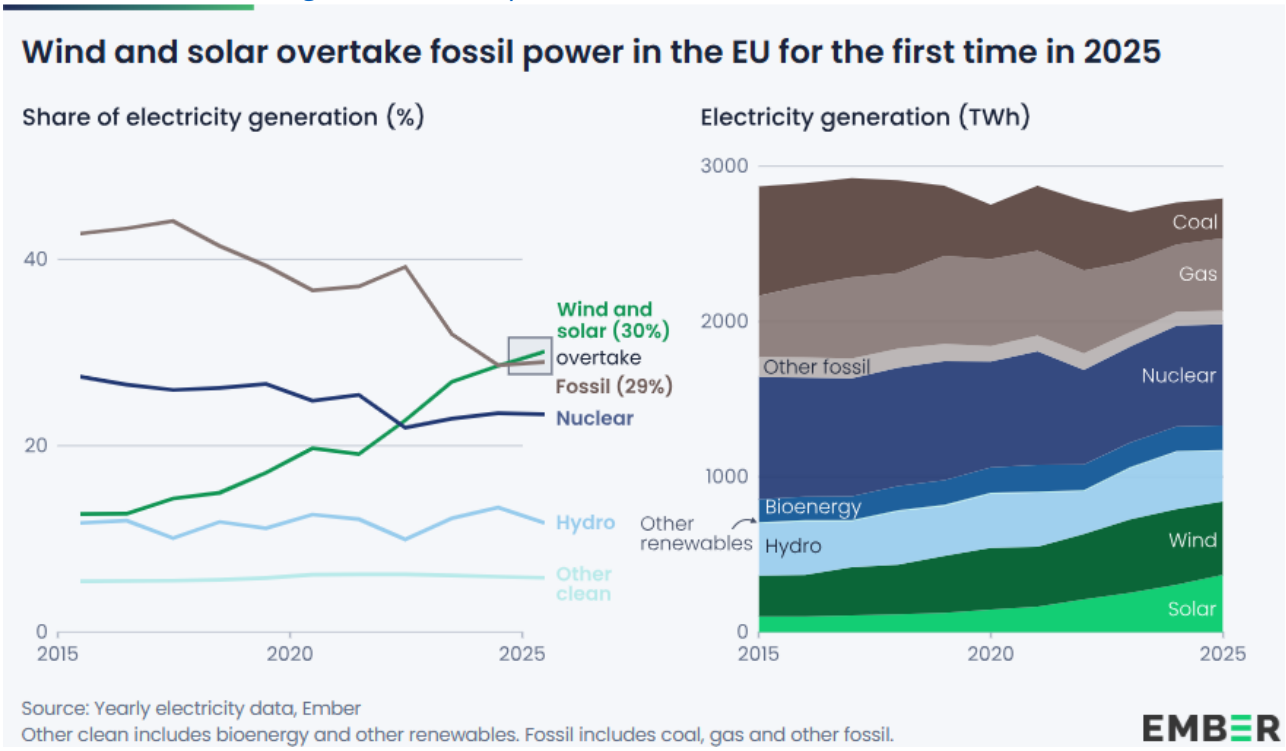
Global Land and Ocean Average Temperature Anomalies
February



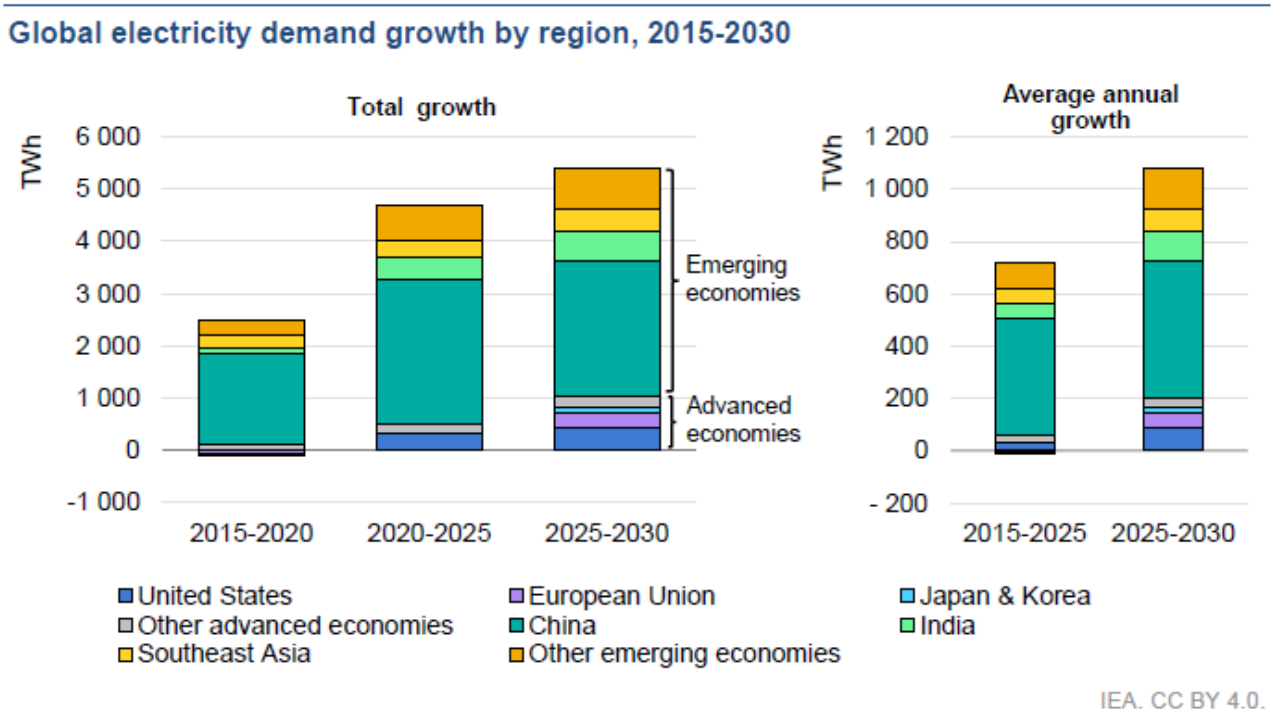
Global Land and Ocean Average Temperature Anomalies
March



Ember - [Wind and solar generated more power than fossil fuels in the EU for the first time in 2025]



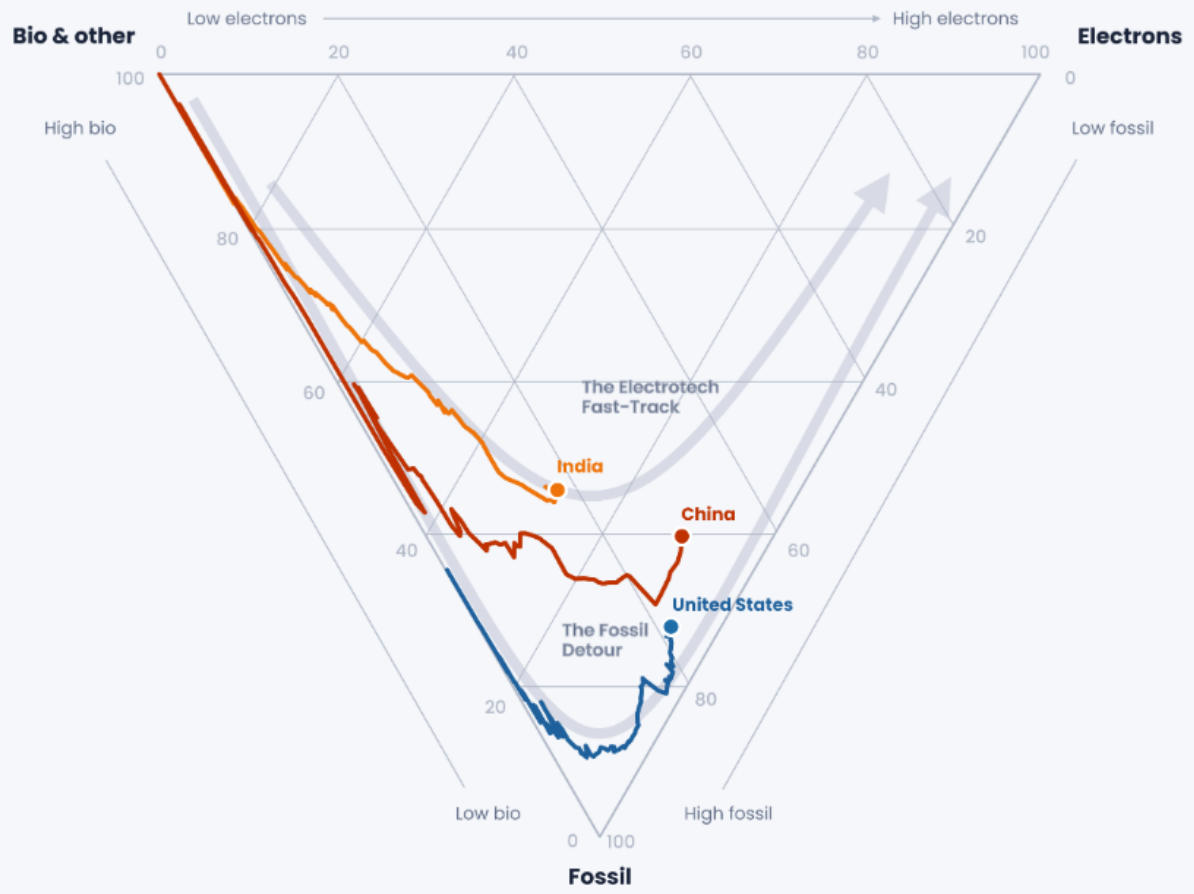
IEA – [Electricity 2026]



Ember – *India's electrotech fast-track: where China built on coal, India is building on sun*

India is taking the electrotech fast-track, bypassing the fossil detour taken by the West and China

Share of final energy demand, 1900-2023 (%)



Source: IEA, IIASA, Ember analysis • This is a ternary chart showing the relative contribution of three aggregated energy carriers – fossil, bio & other, and electrons – that sum to total final energy. 'Bio & other' refers to biomass and other energy such as heat.

EMBER

WMO – State of the Global Climate 2025 – Ocean Hea Content

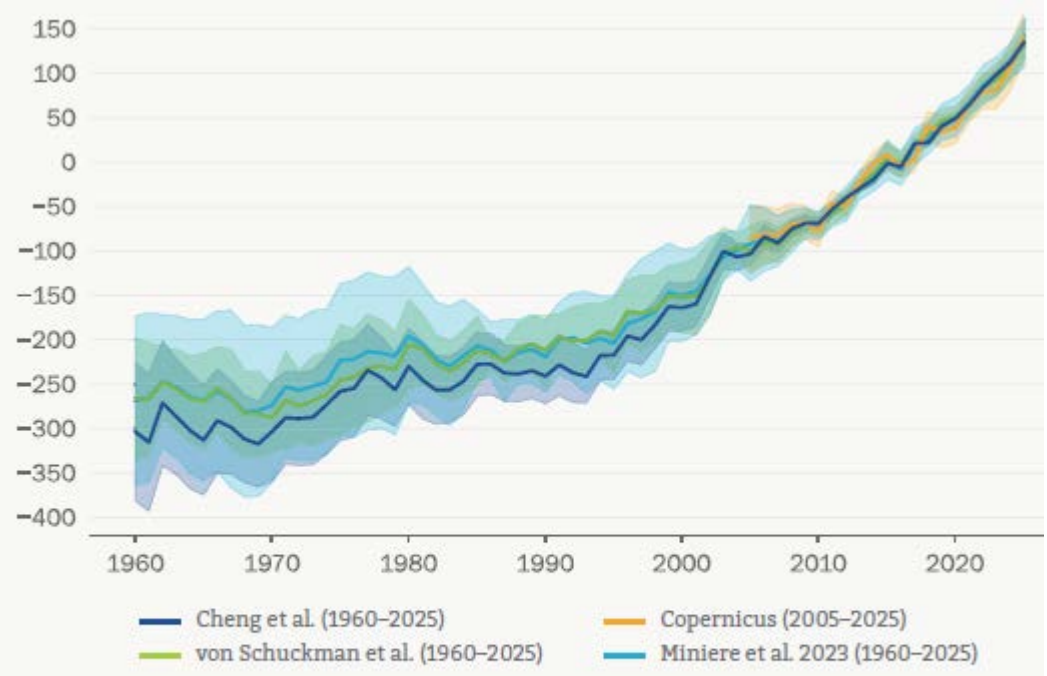


Figure 3. Annual global ocean heat content down to 2 000 m depth for the period 1960–2025, in zettajoules (ZJ). One zettajoule is 10^{21} joules. The shaded area indicates the 2-sigma uncertainty range on each estimate. For details see Datasets and methods.

WMO – State of the Global Climate 2025 – Global mean near-surface temperature

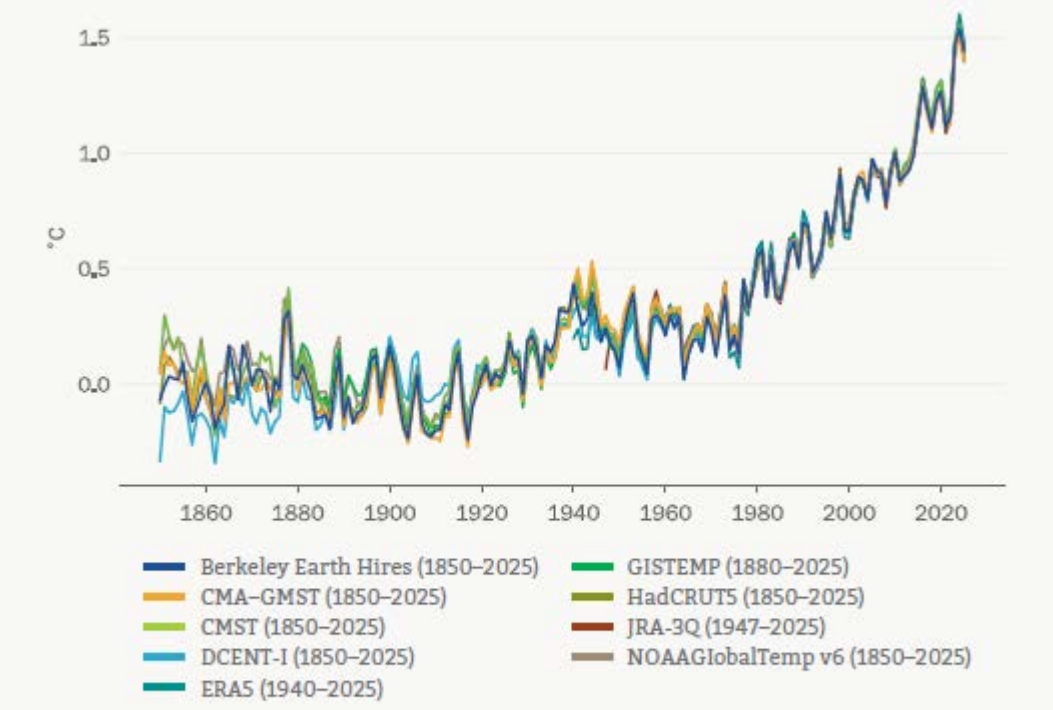


Figure 2. Annual global mean temperature anomalies relative to a pre-industrial (1850–1900) baseline shown from 1850 to 2025

Source: Data are from the datasets indicated in the legend. For details see Datasets and methods.