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Climate & Environment

Climate Update Report

Q3 – July-September 2025

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The **MEDRC Climate Update** is a quarterly review of the latest news, trends, data, events and reports on the state of the climate and environment, covering decarbonization, climate security, diplomacy, technology, finance, and biodiversity. This update covers the period between July to September 2025.

Editorial Summary

"By 2035, the world needs to cut 31.2 gigatons of emissions to stay on track for 1.5°C, or 20.2 Gt for 2°C. The NDCs and announcements so far would reduce that by just 2 gigatons—only 6% of what's needed for 1.5°C and 10% for 2°C." – Ani Dasgupta, President & CEO, World Resources Institute

Global temperatures continue to reach record highs through Q3-2025, with July being the 3rd hottest on record (after 2023 and 2024), and the 2025 January–July period being the second-warmest year-to-date, despite La Niña conditions until March. While emissions are flattening—or rising at a decreasing rate—they are still higher year-over-year, and the world's 2nd largest emitter may be starting to reverse course after 18 years of declines. Meanwhile, governments worldwide are planning fossil fuel production levels through 2030 that exceed by 120% what is consistent with a 1.5°C pathway, and by 77% what is consistent with 2°C. Just 2 gigatons of reductions by 2035 are what's currently on offer. The distance between rhetoric and reality is growing wider year by year.

In the U.S., policy reversals have raised the risk profile for renewable energy investors. The administration's withdrawal of support for offshore wind projects caused several high-profile cancellations and delays, including an 80% complete project in Connecticut, while reviving discussions on a stalled natural gas pipeline signaled a renewed emphasis on oil & gas infrastructure. While a federal judge recently lifted a stop-work order on one major offshore project, the prevailing policy uncertainty has chilled investor confidence, jeopardizing future capacity and raising the risk of higher electricity prices near-term, which further complicates electrification.

Globally, climate diplomacy produced mixed signals. The UN High Seas Treaty crossed its threshold of ratifications ensuring it will enter into force in early 2026 and provide the first global framework to protect biodiversity in international waters from overfishing, climate change, and deep-sea mining. While negotiations on a long-sought plastics treaty collapsed amid opposition from a small group of producer states. Major players such as the U.S., China, Japan, and Russia remain absent from critical biodiversity and emissions commitments.

Multilateral cooperation remains essential but increasingly difficult, with negotiations often stalling over responsibility, financing, or the pace of transition. While new legal instruments and treaties are beginning to shape international governance on biodiversity, oceans, and climate finance, many of the largest emitters continue to resist deeper commitments or delay implementation, limiting the impact of these frameworks. Trust between developed and developing countries remains strained, as promises of financial support and technology transfer fall short of expectations. At the same time, calls for climate justice, loss and damage mechanisms, and equitable adaptation financing have grown louder, pushing these issues from the periphery of climate negotiations to the center of the agenda. The result is an uncertain diplomatic landscape heading into COP30.

Yet amid these setbacks, some financial and technological momentum persisted. Brazil committed $1 billion to a new Tropical Forests Forever Facility, the IADB launched a $500 billion climate-securitization initiative, and philanthropic investors pledged billions more during Climate Week in New York. In technology, carbon dioxide removal companies raised new rounds of capital, while renewables continued to demonstrate cost advantages in most markets despite political pushback.

Altogether, the third quarter of 2025 highlighted the contradictions of the global climate landscape. Structural changes in the energy sector suggest progress is possible, but emissions remain near all-time highs and fossil fuel expansion continues apace. Diplomacy yielded a major breakthrough at sea but failed to curb plastic production on land. Finance and innovation moved forward, while policy reversals in key economies dragged backward. Advances in some areas are being offset by slow walking in others, leaving the global trajectory short of its climate goals.

Key Events

- High-Level Political Forum on Sustainable Development 2025, New York, USA. 14-23 July
- Ramsar Convention on Wetlands COP15, Victoria Falls, Zimbabwe. 23-31 July
- UN-INC on Plastic Pollution, Geneva, Switzerland. 5-14 August
- Research Symposium on Loss & Damage in PSIDS, Savusavu, Fiji. 16-18 September
- Climate Week NYC, New York, USA. 21-28 September
    - UN Secretary-General's Special High-Level Event on Climate Action

Key Reports

- FAO – The State of Food Security and Nutrition in the World 2025, July
- UN DESA, UNFCCC – Climate & SDG Synergy Thematic Reports; Nature, Finance, Health, July
- UN Secretary-General – Seizing the Moment of Opportunity, July
- Ramsar – Global Wetland Outlook 2025, July
- IEA – Global Hydrogen Review 2025, September
- WHO – State of Global Water Resources 2024, September
- SEI, IISD & Climate Analytics – Production Gap Report 2025, September
- BP – Energy Outlook 2025, September

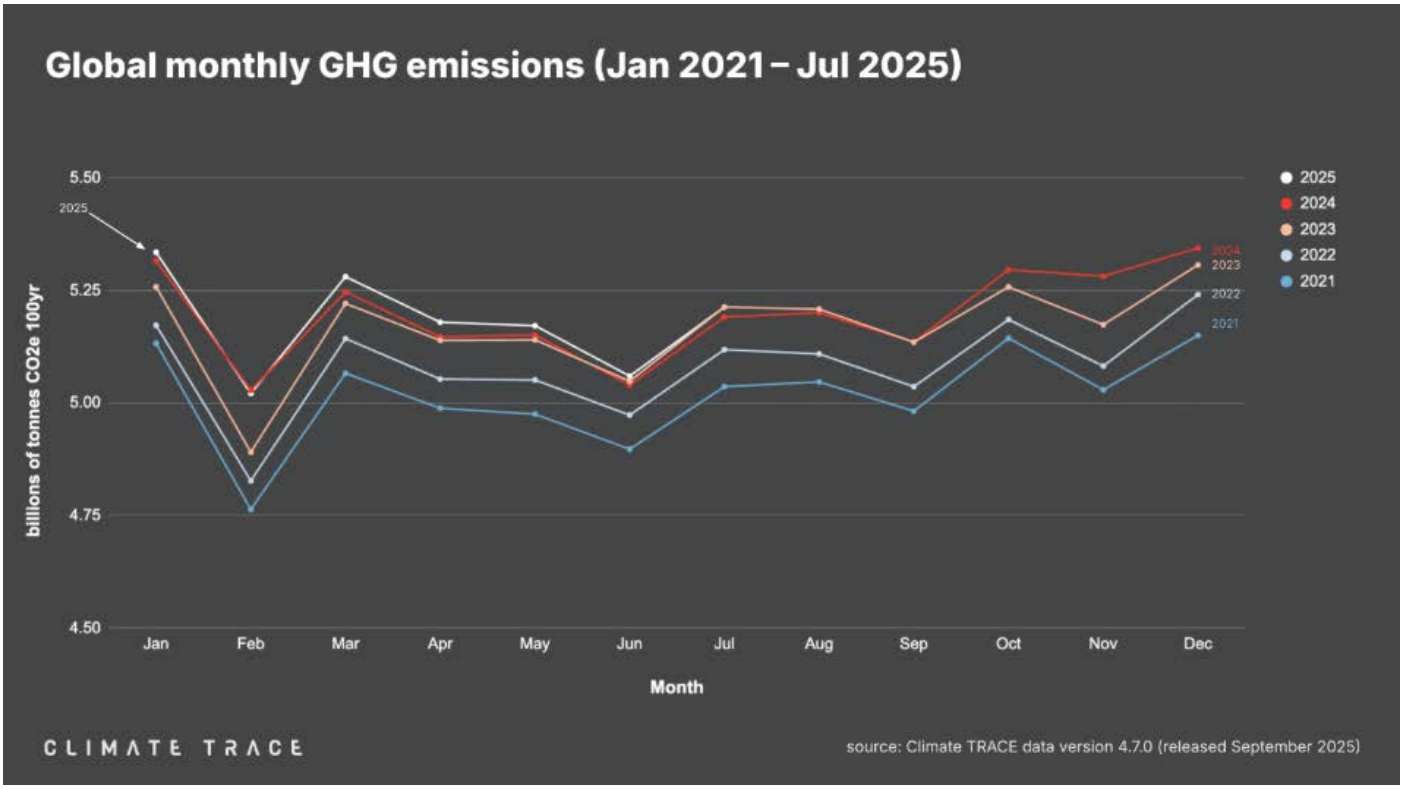
Carbon Emissions Data

- For the first half of 2025, January to June, emissions trended slightly higher than 2024 for a new record level of 30.99 billion tons by June, 36.26 bn by July, and remain on pace to reach over 62 billion tons CO_2e in 2025 for a new record high. While a year-to-date increase of +0.39% over 2024 shows a slowing increase, new records are still being reached. The final months of the year will be decisive with winter heating requirements and recent upticks in coal, oil, and gas requirements.

    - **2021** – 60.03 bn +2.79%
    - **2022** – 60.73 bn +1.17%
    - **2023** – 61.59 bn +1.42%
    - **2024** – 61.92 bn +0.54%
    - **2025** – *YTD*—**36.26** billion tons CO_2e >> *62.22 bn pace*
        - **January** – 5.28 bn **-**0.59%
        - **February** – 4.99 bn +0.20%
        - **March** – 5.29 bn +1.15%
        - **April** – 5.16 bn +0.78%
        - **May** – 5.17 bn +0.36%
        - **June** – 5.11 bn +0.29%
        - **July** – 5.21 bn +0.43%
        - **August** – *TBD*

- **Record Monthly Highs (tCO_2e)**
    - October 2024, 5.31 bn
    - October 2023, 5.29 bn
    - ***March 2025, 5.29 bn***
    - March 2024, 5.28 bn
    - January 2024, 5.28 bn

- Four of the top 5 emitting countries increased their emissions year-over-year—**China** +1.45mn (+0.09%), **U.S.** +7.95mn (+1.34%), **India** +1.63mn (+0.46%), **Brazil** +1.33mn (+1.10%), **EU** +0.86mn (+0.28%), while **Russia** declined by -0.38mn (-0.15%), a net total of +12.84mn, with ***61.9%*** coming from U.S. increases.



Total year-to-date emissions (July 2025) of **36.26 billion** tons of CO_2e, published September 25, 2025.

Global Monthly Temperature Records – NOAA NCEI

- All of the hottest months on record have occurred in the past 3 years, with new records persisting in spite of the onset of La Niña conditions up to March that would have a cooling effect on temperatures. While no single monthly data point is significant, the trend continues through this year and the past decade.

Hottest on Record	1st	2nd	3rd
January	**2025**	2024	2016
February	2024	2016	**2025**
March	2024	2016	**2025**
April	2024	**2025**	2020, 2016
May	2024	**2025**	2020
June	2024	2023	**2025**
July	2024	2023	**2025**
August	2024	2023	**2025**
*September**	2023	2024	2020
*October**	2023	2024	2015
*November**	2023	2024	2020
*December**	2023	2024	2019, 2015

**Data not yet available for 2025*

Decarbonization

- China's target of carbon neutrality by 2060 appears to be on track, with near-term peaking and movement towards full GHG neutrality possible, but currently neglected sectors, policy coverage gaps, and implementation gaps may ultimately lead to falling short, particularly with its coal policy.
- IEA's July release of the Electricity Mid-Year Update 2025 shows a strong growth in electricity demand (3.3-3.7%), while emissions growth is plateauing thanks to strong renewables rollout globally. Hotter months are chasing higher electricity demands, with greater emissions from carbon-based sources.

- Just a year on, BP's Energy Outlook forecast for peak oil demand by 2025 has been revised back by 5 years to 2030. Slowing efforts on energy efficiency improvements are expected to increase global oil demand from 102 to 103.4 million barrels per day, and up to 106 million bpd by 2035 if this trend continues.
- On 29 July 2025 the U.S. Environmental Protection Agency proposed rescinding the 2009 "endangerment finding"—the legal basis for regulating greenhouse gases under the Clean Air Act—a policy action that, if finalized, would directly constrain U.S. regulatory tools for cutting emissions and change investment signals for power and transport sectors.

Climate Security Nexus

- Water Security – Study on the Ganga River has found it is experiencing the worst drying in 1,300 years, a hydrological crisis impacting 600 million people across India, Nepal, and Bangladesh. Some projections of increased rainfall under changing climatic conditions could help to reverse the drying, but excessive groundwater exploitation may nullify this, impacting drinking water, agriculture, electricity, and GDP.
- Energy Security – IEA releases its Global Energy Policies Hub, a catalogue of 5,000 policies across 85 countries to track energy security policy over time.
- Food Security – FAO flagship publication the State of Food Security and Nutrition in the World 2025 details how food insecurity is still above pre-COVID-19 levels and not on track to SDG 2.2, thanks in large part to persistent food price inflation, increasing the cost of a healthy diet around the world. While commodity prices increased with fuel shocks, food prices raised faster, while fertilizer prices remain elevated since the invasion of Ukraine.

Climate Diplomacy

- Nearly 100 nations, including most of the top emitters as well as Small Island states, used the UN Secretary-General's Climate Summit to unveil or reaffirm updated NDCs and emissions commitments, signaling broad engagement even while many pledges fall short of what's needed.
- The U.S. Department of Energy released its own report evaluating the peer-reviewed literature on climate impacts of GHGs, seeking to provide a critical assessment of the conventional narrative.
- The Pacific Loss & Damage inaugural symposium in Fiji brough together the SIDS to discuss the permanent costs of climate change to their nations, funded by Denmark, New Zealand, and PACT.
- A major summit for a legally binding treaty on plastic pollution failed to reach consensus over 10 days of talks in Geneva. A small number of oil-producing states are accused of blocking progress, despite genuine efforts by many, resulting in no tangible results. Major issues include production caps, chemicals of concern, and financing to help developing countries implement the treaty.
- Five Democrat U.S. governors of east coast states issued a joint statement calling on the Trump administration to uphold their previously granted offshore wind permits to allow the projects to go forward, with some already near completion. The states include New York, New Jersey, Massachusetts, Connecticut, and Rhode Island. For offshore wind in federal waters, the Department of the Interior has unique authority, with the previous Biden administration approving 11 projects.
- China announced its first ever pledge on an emissions reduction target of 7-10% over the next 10 years, meaning peak emissions will occur within this time frame. However, the Asia Society Policy Institute says China needs a 30% reduction by 2035 to make its 2060 Net Zero target achievable. The U.S. pivot away from renewables with China's ramp-up are casting contrasting signals on the global climate stage.
- The landmark UN High Seas Treaty—a global agreement to protect marine biodiversity beyond national waters, require environmental impact assessments, and ensure benefit-sharing—surpassed 60 ratifications in September 2025 and will enter into force in early 2026, marking a major climate diplomacy breakthrough that strengthens multilateral cooperation, ocean carbon sink protection, and equity ahead of COP30.

Climate Resilience

- One third of the USGS' Climate Adaptation Science Centers are expected to close after September 30th due to funding cuts, impacting projects aimed to help people, wildlife, land and water adapt locally to a changing climate. Nine centers exist based at universities, with the three set to close covering Texas, Oklahoma, Louisiana, New Mexico, Kentucky, West Virginia, Pennsylvania, New York, Massachusetts, and Hawaii. The U.S. Department of Interior must sign off on any new funding release.
- Wind energy projects are being severely impacted, stopped, or made uncertain for future investors by changes in U.S. policy on renewable energy, as well as stop-work orders and the pulling of permits. Empire Wind and Revolution Wind are two such examples, which also include international investors with investments of billions of dollars already made. Increasing electricity and grid demands have states seeking to secure energy supplies ahead of potential shortfalls that weaken grid resilience.
- The U.S. is cutting climate satellite observations of Earth that monitor water contamination, air pollution, and GHGs, for going beyond essential weather predicting tasks in a reshaping of government research.
- Fiji announced that up to 676 communities may need relocation as rising seas, extreme rainfall, and landslides worsen under climate impacts, with ~40-50 villages considered of "major concern" and 17 already on an urgent "red list" for engagement.
- Oman and the UNDRR agreed to deepen cooperation to integrate disaster risk reduction into national planning, including through new emergency centers, a digital platform for coordinated response, and joint capacity-building efforts to strengthen climate resilience.

Renewable Energy

- China is on track to deploy 380 GW of PV solar in 2025. Brazil hit a 4-year low in hydro power, but solar and wind made up more than a third of the country's energy profile for the first time ever.
- Renewables costs continue to trend lower with over 90% of new renewables being cheaper than natural gas, as gas prices rose and volatility increased. While outliers are moving away from solar, citing costs.
- The Federal Energy Regulatory Commission (FERC) issued orders reforming interconnection processes for PJM—the regional mid-Atlantic and Midwest grid operator—to speed grid connections and better account for storage and grid-enhancing technologies. A near-term structural change that will affect timelines for new wind and solar projects. The impact should be helpful to renewable energy projects.
- Improved drilling methods inspired by nuclear fusion research are poised to make geothermal power widely accessible beyond today's volcanic hotspots, with U.S.-based Quaise using gyrotron-generated millimeter waves and plasma processes to rapidly melt and vaporize hard rock for ultra-deep boreholes that can reach turbine-grade temperatures virtually anywhere. New assessment tools are making geothermal projects in traditional settings easier to find, with success at an unproductive New Mexico well "Lightning Dock" being turned into one of the most productive.
- The U.S. Department of Transportation (USDOT) has withdrawn or terminated $679 million in funding for 12 offshore win projects across the country, looking to reallocate funds where feasible towards port improvements and the domestic ship building industry instead. Secretary Duffy stated, "we are prioritizing real infrastructure improvements over fantasy wind projects that cost much and offer little."

Carbon Capture & Removal

- Carbon Direct and Microsoft announced the release of the 2025 edition of their criteria for high-quality carbon dioxide removal (CDR). This updated guidance provides rigorous standards across nine distinct CDR pathways, including new comprehensive standards for abiotic marine CDR, such as Ocean Alkalinity Enhancement (OAE) and Direct Ocean Removal (DOR).
- Climeworks secured $162 million from private investors to apply towards technological development, in a vote of confidence to one of the first DAC companies operating in Iceland. This follows a 10% cut in workforce earlier in the year under uncertainty in the global CDR market going forward.

- The EU's Carbon Removal and Carbon Farming (CRCF) methodologies on "permanent" removals (DACCS, BioCCS, biochar), have been analyzed and found wanting by Carbon Market Watch in its report, Faulty to the Core.

Green Hydrogen

- IEA's Global Hydrogen Review 2025 shows low-emissions hydrogen capacity growing but flags a smaller 2030 pipeline than previous projections amid cost and policy uncertainty—cautioning that policy support and finance remain decisive for scale-up. Concerningly, nearly 25% of projects have been cut, with 2030 output cut from 49mn tons per year down to 37mn tons.
- The EU reallocates hydrogen bank subsidies after nearly 1.3 GW across 3 major projects, accounting for 1/3rd of all awarded capacity from its auctions, have been withdrawn citing regulatory delays, insufficient incentives and unrealistic timelines given bottlenecks. The projects are Deutsche ReGas 210MW H2-Hub Lubmin in Germany, the 560MW Zeevonk electrolyzer in the Netherlands (by Vattenfall and CIP) and the 500MW Catalina project in Spain (by CIP and Enagás Renovable). A key issue is the subsidy price versus the expected cost of production, with a €0.48 bid against an €8.42 estimated cost per kg
- China leads global production levels of green hydrogen with 50% of global capacity, primarily in its Inner Mongolia region, supported by a policy push to develop the sector and close cost gaps to grey hydrogen.
- A powder-based hydrogen solution from Australia presents new opportunities in the shipping of green hydrogen, using sodium borohydride (NaBH4), a stable powder to transport H_2 at room temperature. This solution could immediately scale using current shipping transport infrastructure.
- Woodside announced an MoU with Japan Suiso Energy and Kansai Electric to build a liquid hydrogen supply chain from Australia to Japan—a commercial shipping and offtake arrangement that illustrates near-term private sector progress on exported hydrogen supply chains.
- The Green Hydrogen Summit Oman (GHSO) will take place in December and looks to continue catalyzing the rollout of the gH_2 sector in Oman and the GCC region.

Biodiversity

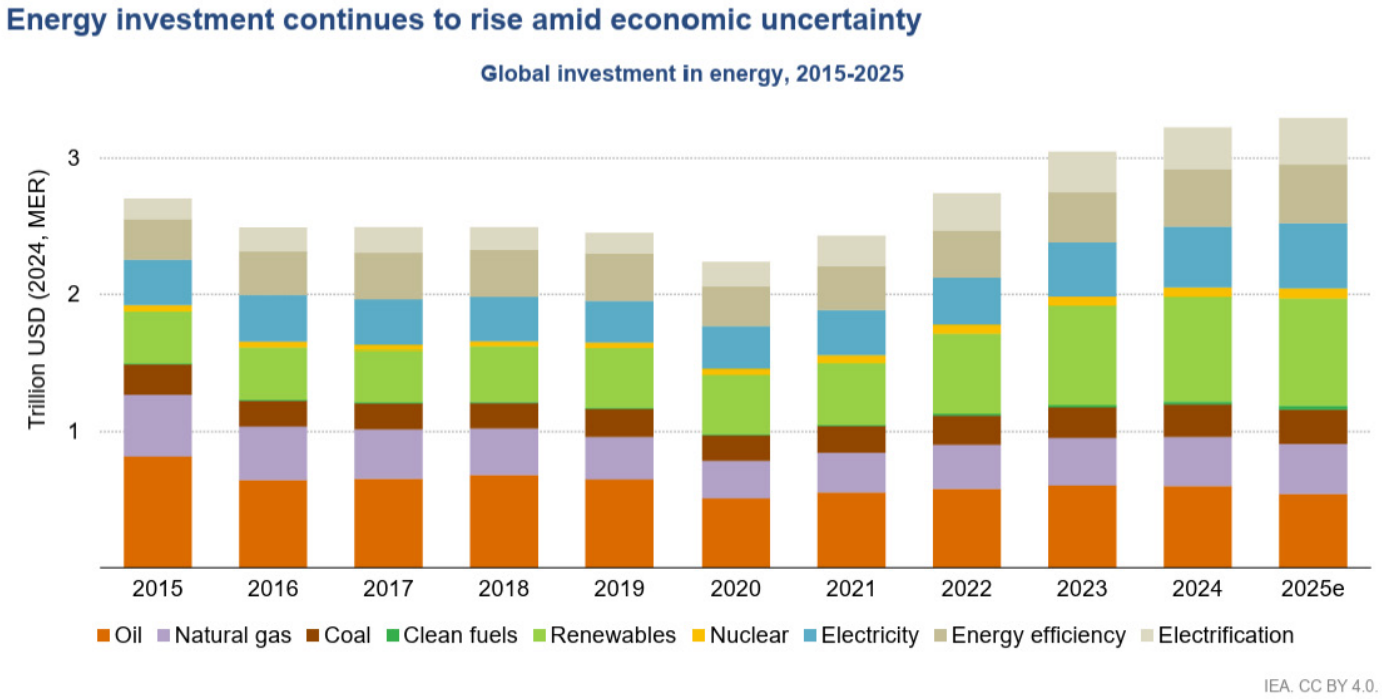
- Ramsar released the Global Wetland Outlook 2025 (July), warning rapid wetland loss and quantifying the economic value at risk—an urgent call for wetland-focused finance and restoration plans.
- The UN High Seas Treaty surpassed the 60-ratification threshold in mid-September 2025, triggering the countdown to its entry into force—a key step for marine biodiversity protection beyond national jurisdictions. As the first global legal framework designed to safeguard biodiversity in international waters, the treaty addresses mounting threats from overfishing, climate change, and deep-sea mining. It establishes a formal process for designating marine protected areas and a framework for technology transfer and capacity building, though key nations—including the U.S., China, Russia, and Japan—are yet to ratify.
- NOAA's Coral Reef Watch continues to document widespread heat stress and ongoing global bleaching impacts through 2025, reinforcing the need for rapid emission cuts plus local reef resilience measures.
- Oman3165 will begin a 70-day coastal kayak journey celebrating biodiversity while taking water samples.

Climate Finance

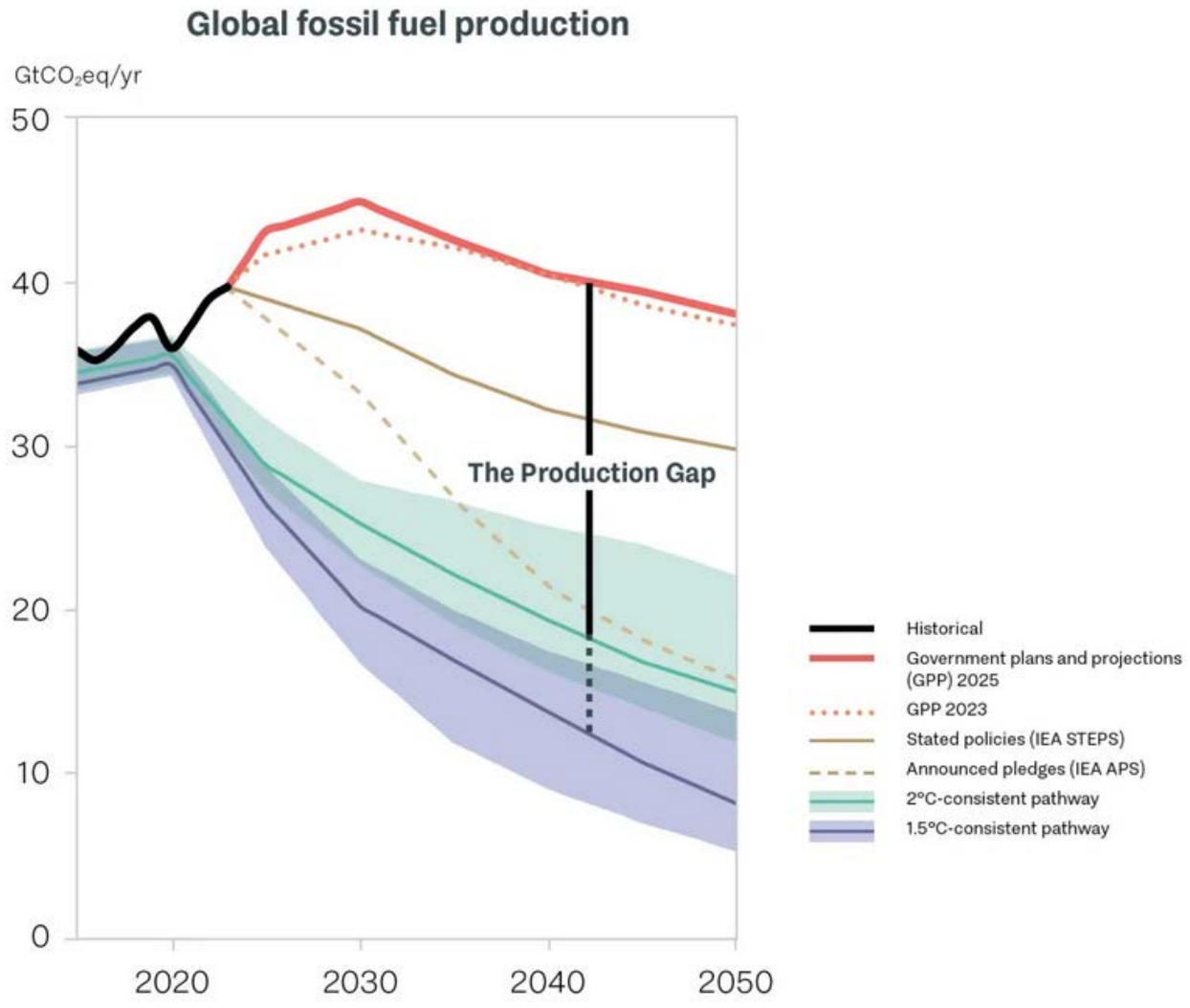
- Brazil pledges $1 billion toward the new Tropical Forests Forever Facility, a fund designed to conserve tropical forests via results-based payments, aiming for a $125 billion endowment to leverage $100 billion in private investment.
- The Inter-American Development Bank launched ReInvest+, targeting up to $500 billion of Latin American local loans to be transformed into investment-grade, hard-currency securities to attract global institutional capital to climate-related projects in the region.
- The Jeff Bezos-backed Global Energy Alliance for People & Planet (GEAPP) announced plans to mobilize roughly $7.5 billion for developing-country renewable energy projects using blended finance.

Interesting Climate Charts

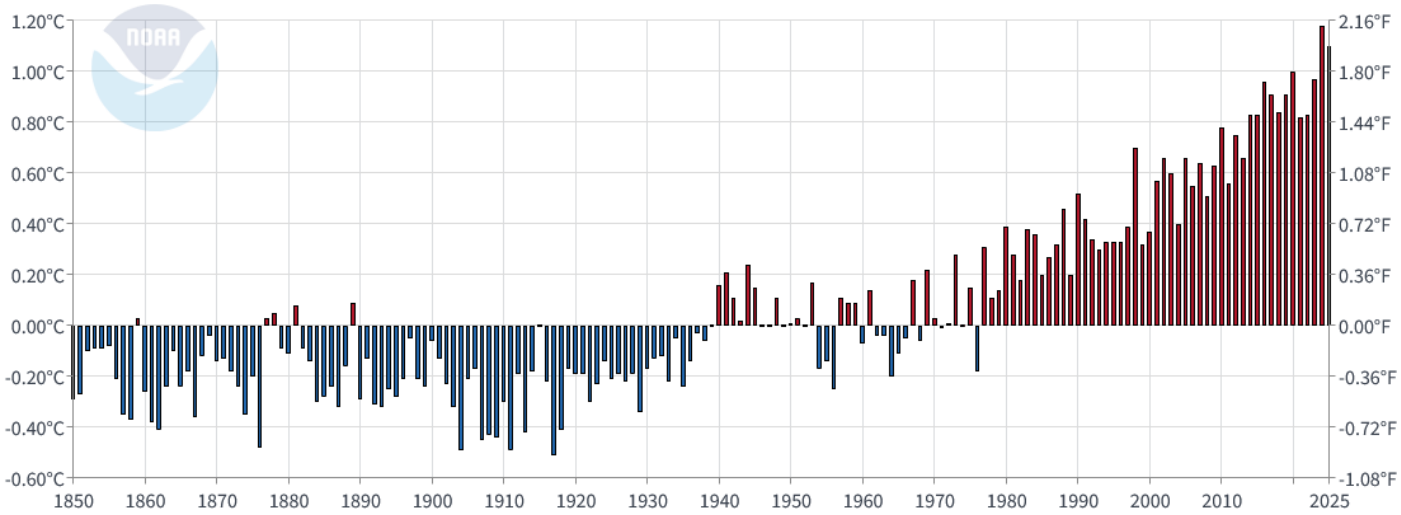
IEA World Energy Investment 2025



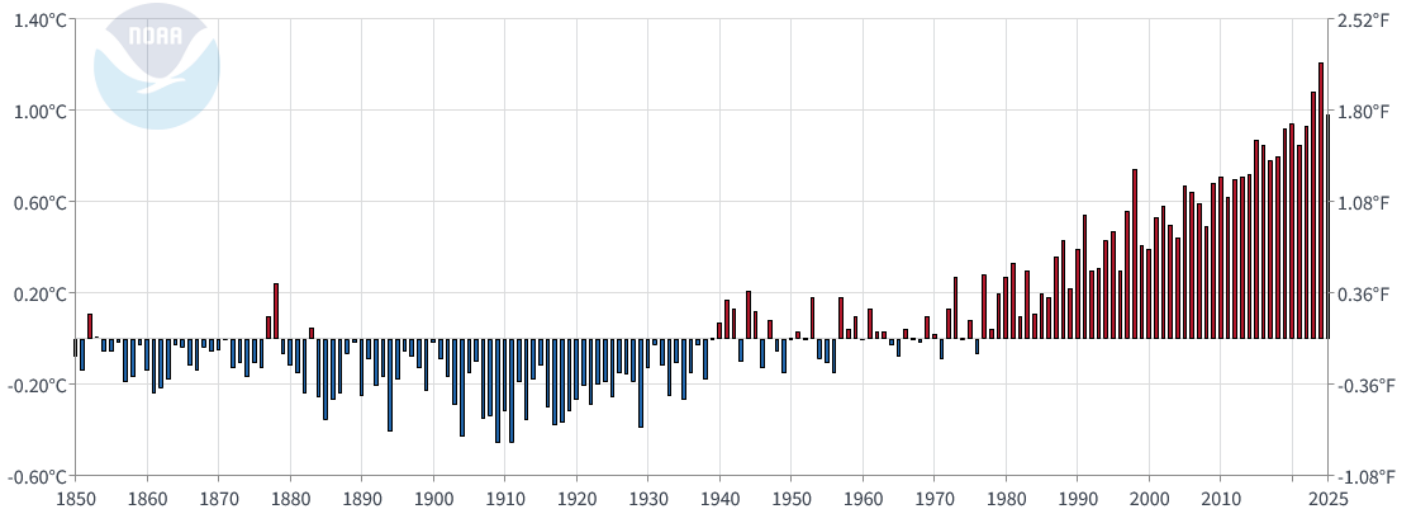
Production Gap Report 2025



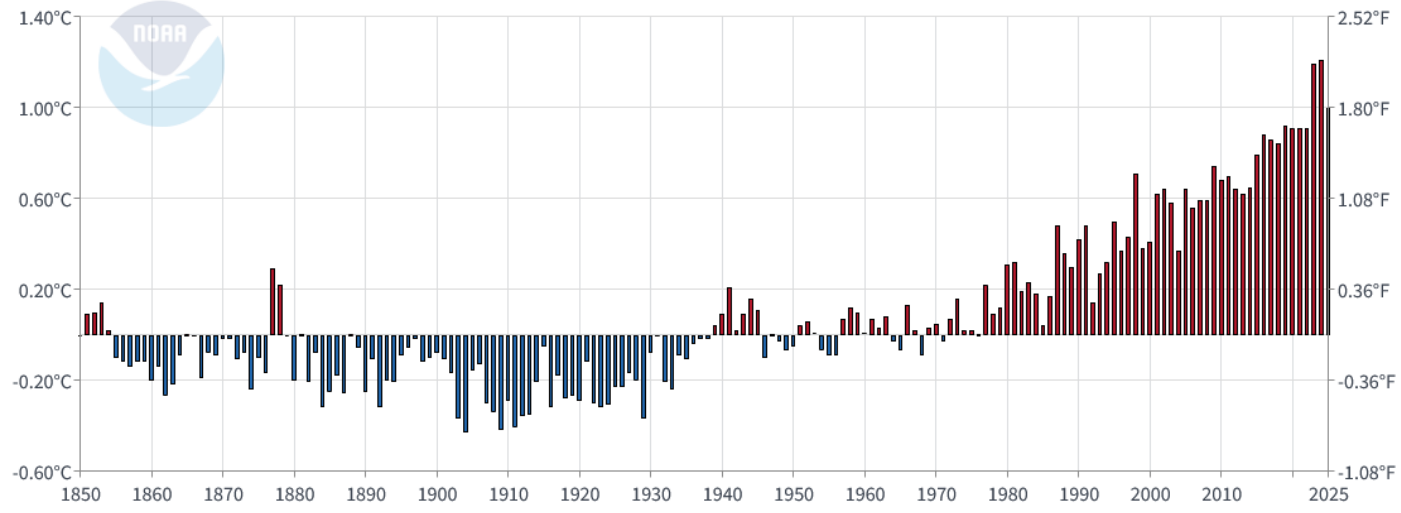
Global Land and Ocean Average Temperature Anomalies
May

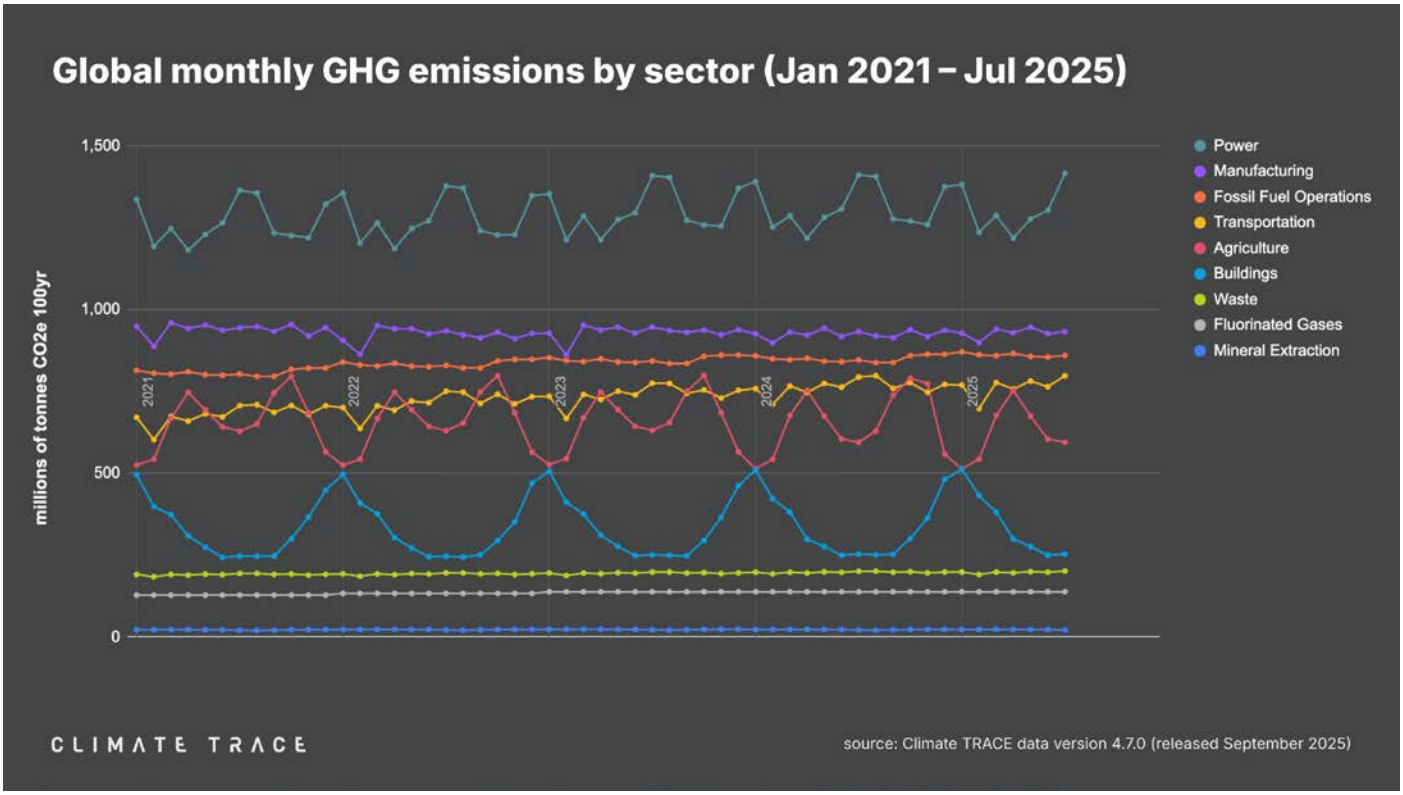


Global Land and Ocean Average Temperature Anomalies
June

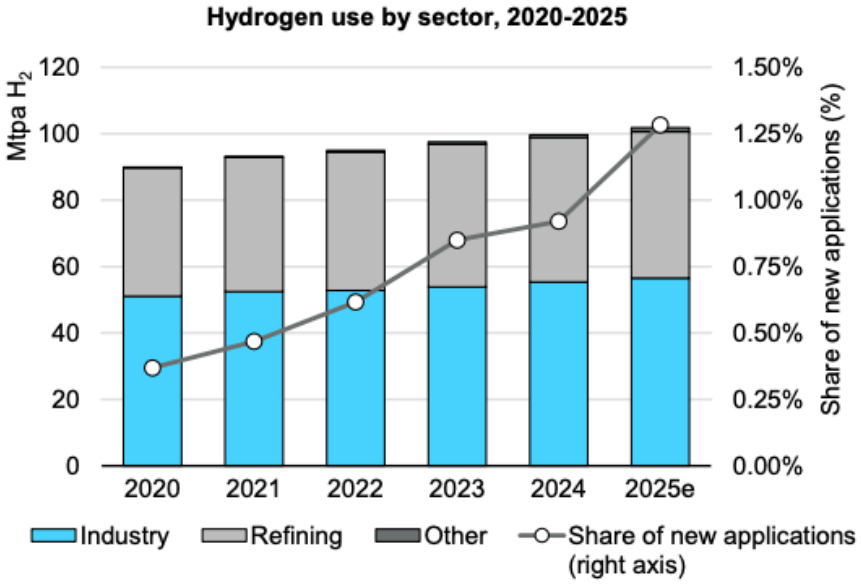


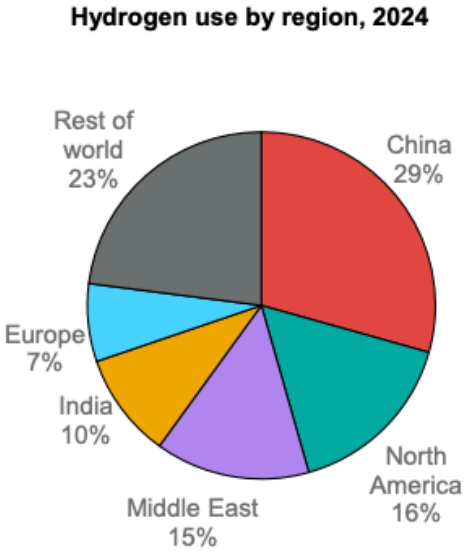
Global Land and Ocean Average Temperature Anomalies
July



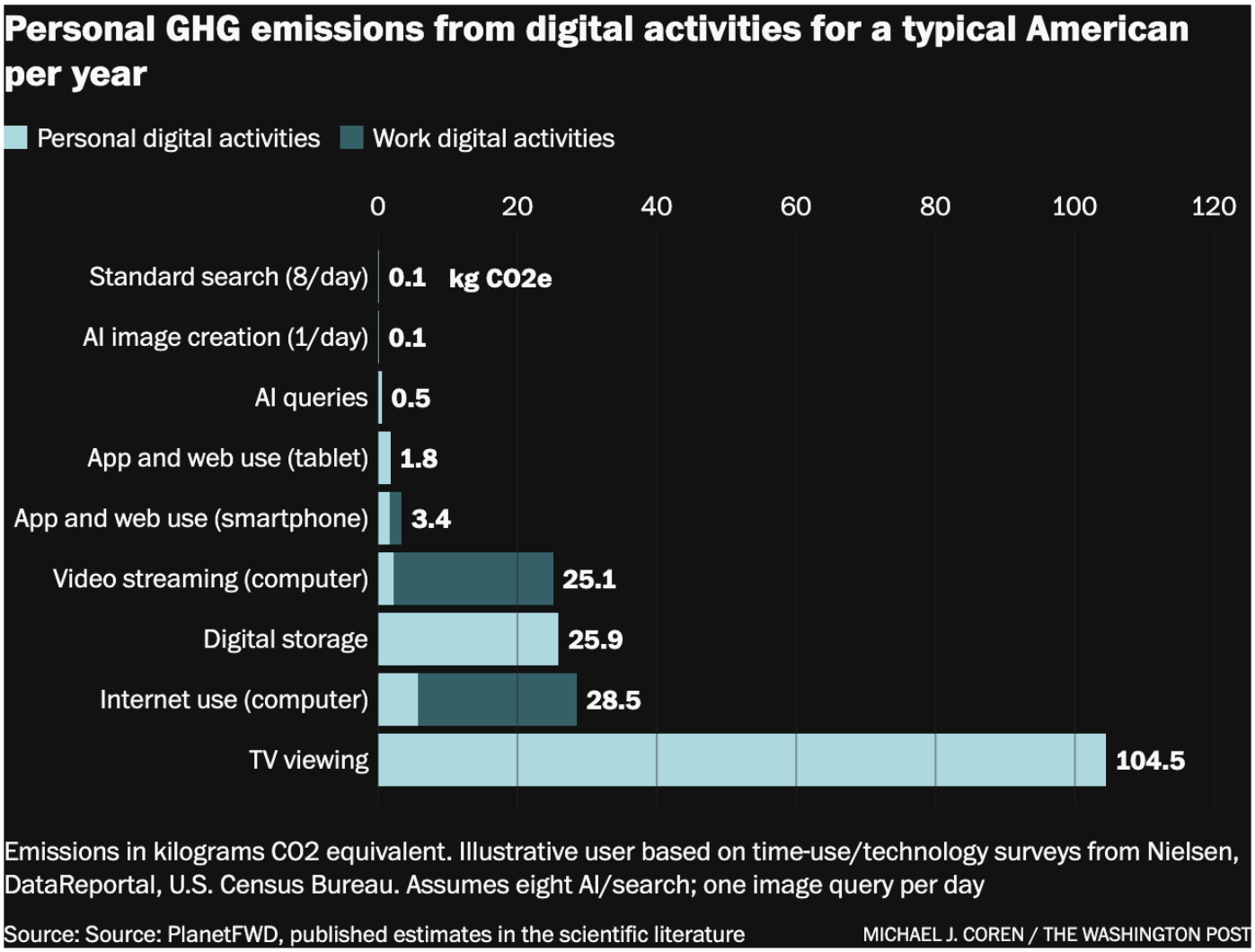


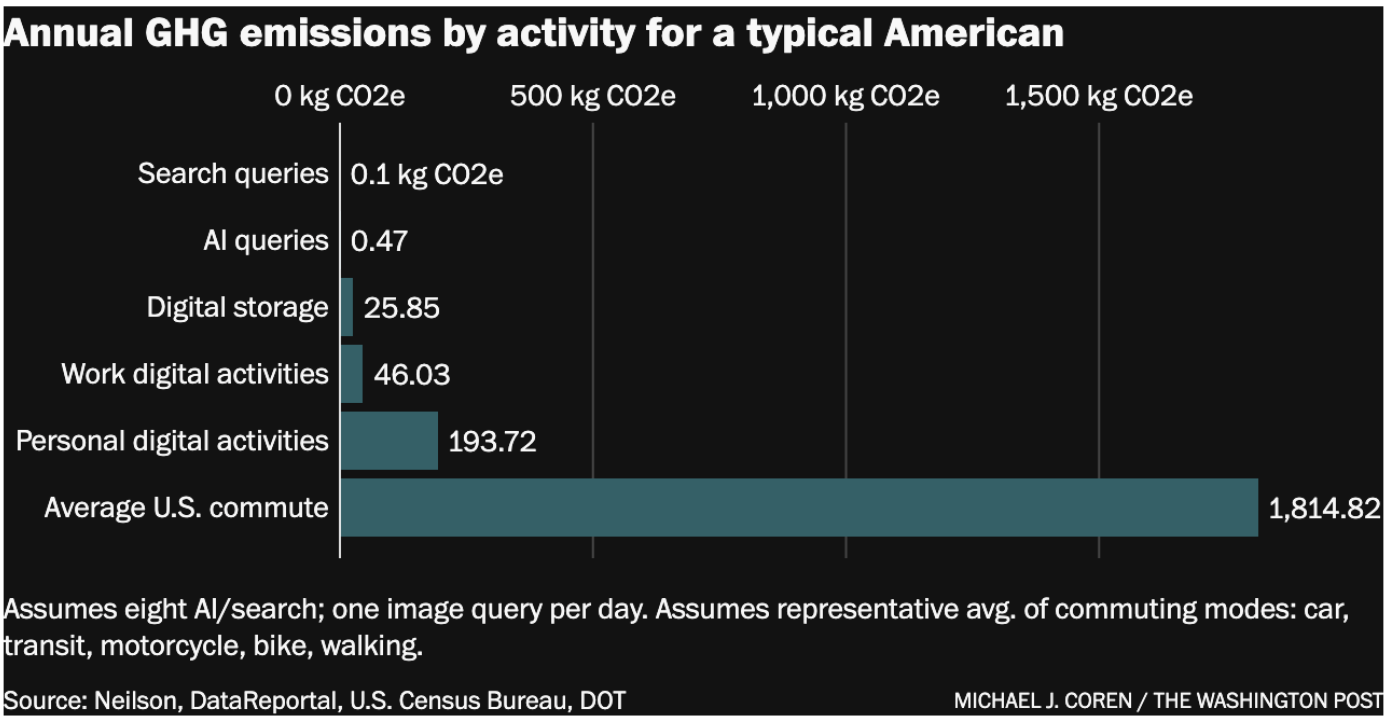
IEA Global Hydrogen Review 2025





Washington Post—*ChatGPT is an energy guzzler. These things you're doing are worse.*





BP Energy Outlook 2025

Decomposition of differences in emissions by region (Below 2° vs Current Trajectory)