

ENERGY MATTERS

Soundbite summaries of the energy news you need to know

AN OFFICIAL PUBLICATION OF



AMERICAN ENERGY SOCIETY

October 28, 2024

- The Power Read -

- **Oil:** OPEC got "wrong-footed" on its demand projections by China.
- **Mining:** The industrial metals market is in a long rally.
- **Renewables:** Big Tech is leading a nuclear renaissance.
- **Renewables II:** Only 3 of the 7 hydrogen hubs have advanced to the 1st stage.
- **Renewables III:** No region is installing solar faster than C/S America.
- **Renewables IV:** There is a "broken EV" pandemic.
- **Policy:** The IRA creates \$1.84 of value per \$1 spent in the EV sector, but only \$1.02 in all other sectors.
- **ResTech:** The USDA has awarded \$1.5B to support conservation.

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- AASHE Sustainability Conference and Expo on October 27-29 in [Anaheim](#).
- NAESCO & ESC host [R3](#) in Anaheim, November 4-6.
- [Energy Transition North America](#) is being held in Houston on December 4-5.

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- Fossil Fuels -

- Oil -

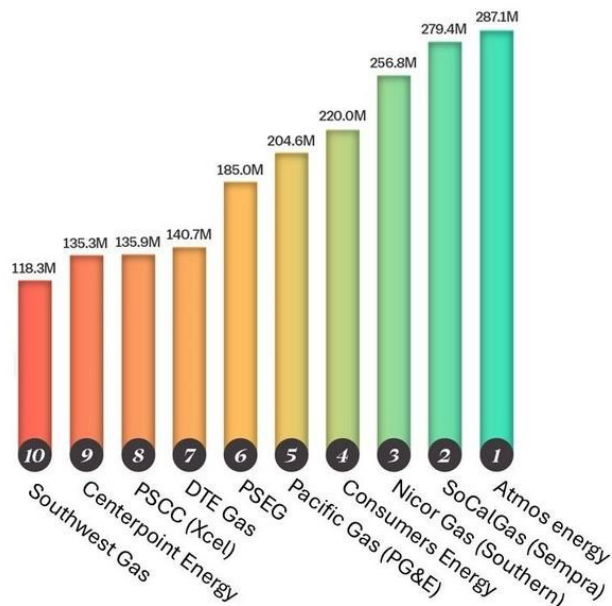
- Usually, OPEC oil demand forecasts are accurate. However, for the first time ever, **OPEC has had to revise and reduce its global oil demand forecast** for a third consecutive report. They were "wrong-footed" by China, which has ~3% lower crude imports YoY because:



- Recovery of the national economy is taking longer than expected.
- The National Party is injecting small amounts of stimulus money in targeted sectors.
- EV sales are rising and replacing sales of ICE vehicles.
- The trucking industry is shifting over to LNG.

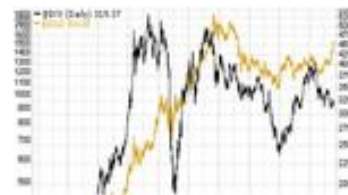
- Natural gas -

- **The US consumes about 32.3 trillion cubic feet of natural gas each year, or about 1/3 of US total primary energy consumption.** *Insert:* the [top-10 investor-owned natural gas utilities](#), in residential and commercial sales volume (in thousands of cubic feet, or Mcf). *Note:* these same 10 utilities account for 254 million metric tons of annual CO2e emissions.



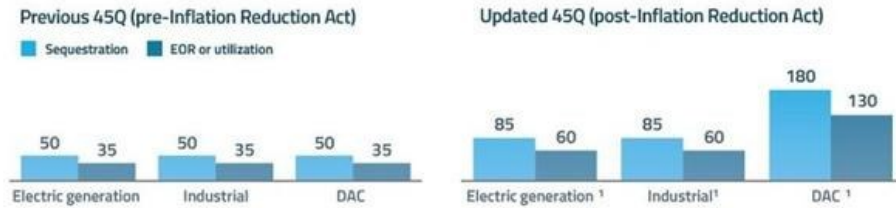
- Coal and mining -

- **The industrial metals market is in a long rally.** [Iron ore](#) (a steelmaking staple), copper, zinc, and uranium continue to add to their price gains; meanwhile, China passed a very large economic stimulus package that will increase demand for industrial and critical metals.



- Carbon capture and removal -

- The 45Q carbon capture, utilization, and storage (CCUS) tax credit provides a revenue source that can be used by renewable energy project developers. As amended by the IRA, the 45Q tax credit pays \$85/ton and allows the taxpayer to claim the credit for 12 years once the project is placed in service. (*Editor's note: if a developer can capture and store carbon for under \$85/ton over the 12 year period, then the project is financially feasible. [AES Members](#) have access to DevCo DNA.*)



- No- / Low-Carbon and Renewable Energy -

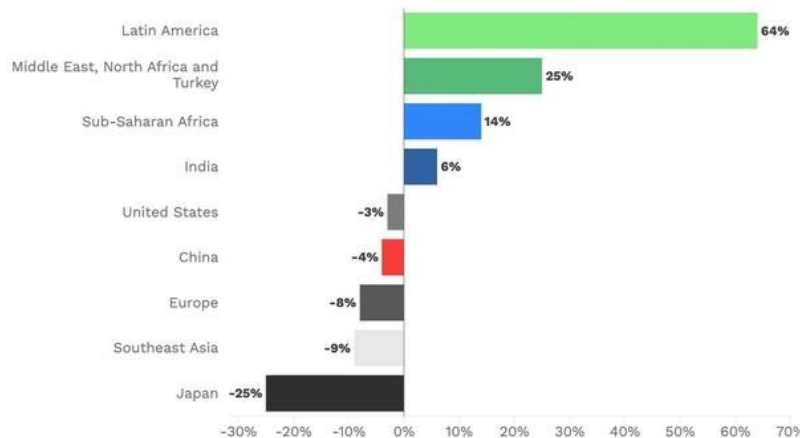
- **Big Tech is leading the nuclear renaissance.** Amazon announced it will invest in small nuclear reactors (*insert*), just days after Google made a similar announcement, and just weeks after the owner of the shuttered Three Mile Island nuclear power plant said it will restart its reactor so that Microsoft can buy the power to supply its data centers.



- **Based on the investment activity of 500 hedge funds, most are "shorting" green-tech sectors like batteries, solar, electric vehicles, and hydrogen, and "net-long" on oil, gas, and coal.**

- About one year ago, the DoE awarded \$7 billion in federal aide to [7 hydrogen consortiums](#). However, **only three of those hydrogen hubs have met their first-phase planning targets** and have received \$30 million each: the ARCHES hub (in California); the Pacific Northwest Hydrogen Association (in Oregon, Washington, and Montana); and the Appalachian Regional Clean Hydrogen Hub (in Ohio, Pennsylvania, and West Virginia). The remaining 4 are still in the process of [trying to meet](#) their first-phase funding targets.

- *Insert: A [comparison of global investments in solar power](#). (Summary of the PDF report: Latin America, MENA, and Sub-Saharan Africa are increasing investments in solar while Japan is reducing.) Note: the data compares the change in spending by region from 2023 to 2024, not overall spending amounts.*



- There is an "broken EV charger" epidemic:

- To qualify as "active" (aka recognized by map searches), an EV station must have 97% "uptime" (working), but [average uptime rates](#) in the US are closer to 75%.
- The most common breakdown of public EV chargers is [software](#) related; second most is the lack of people qualified to fix or repair broken chargers.
- Enel X Way is [shutting down](#) all of its ~125,000 JuiceBox EV chargers.

- Energy Policy & Geopolitics -

- It seems that **the IRA creates \$1.87 per \$1 spent for the EV sector, but only \$1.02 of benefits per dollar of government spending for all other sectors.** [AES Members](#) have access to the research paper (PDF).

- SCOTUS has agreed to hear appeals in Tenth and Fifth Circuit rulings that reached different conclusions about **whether legal challenges to EPA air pollution rules belong in the Supreme Court or regional circuit courts when the rules are "local" in scope.** ([AES Members](#) have access to the *Energy Today* archives, including all "The Most Important Energy and Environmental SCOTUS Cases.")

- California governor Gavin Newsom signed [AB X2-1 into law](#), authorizing the state's energy regulator to require refiners to maintain minimum gasoline inventories. The Governor says the new law will mitigate gasoline price spikes but the industry says it is essentially a tax. Either way, a minimum fuel inventory requirement is unprecedented in the US but has been implemented in Australia, New Zealand, the Philippines and Mexico.

- Perhaps related, US independent refiner **Phillips 66 announced that it will [shut its 139,000 b/d Los Angeles, California, refinery in the fourth quarter of 2025.](#)** Phillips 66 will supply California gasoline markets with fuels from its own refining network while supplying renewable diesel (RD) and sustainable aviation fuel (SAF) from its Rodeo renewables refinery near San Francisco.

- Global Energy Geopolitics -

- **MENA:** [Geopolitical conflict](#) around Bab el-Mandeb, the southern chokepoint at the mouth of the Red Sea, has slowed all trade in the region, especially crude oil and oil products, which has decreased by more than 50%. When Yemen-based Houthi militia began attacking commercial ships in the Red Sea, many shipping companies immediately rerouted their vessels to avoid the Bab el-Mandeb chokepoint and take a longer, more costly route around the Cape of Good Hope at the southern tip of Africa.



Note: An overwhelming majority of goods in the world (about 80%) are [transported by ships](#).

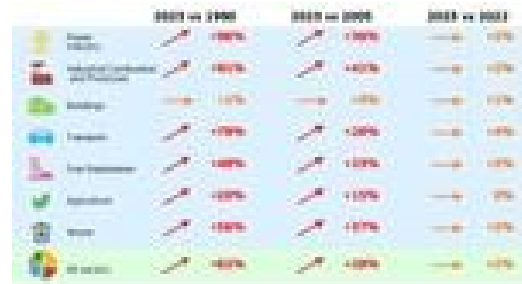
- **Asia.** To revive the world's second largest economy, Chinese authorities are releasing [smaller targeted investments](#), which allows them to gauge the market's reactions, rather than one large stimulus measure that overshoots or underwhelms.

- **Canada:** In 2008, British Columbia introduced North America's first [carbon tax](#). At the time, it was hailed as a cost-effective and fiscally responsible way to cut greenhouse gas (GHG) emissions. In many respects, it's working: polluters are paying more. The tax started out at \$10 per ton of CO2 in 2008, but has risen steadily, hitting \$80 per ton this year. However this year, [neither](#) the left-leaning tax-supporting National Democratic Party nor the right-wing Conservative Party actively supports the BC carbon tax.

- Climate, Sustainability, and Resiliency -

- The 21st Century [global emissions](#) report card:

- In order, China, the US, India, the EU27, Russia, and Brazil were the world's largest GHG emitters in 2023. (Note: together these countries account for 49.8% of global population, 63.2% of global gross domestic product, 64.2% of global fossil fuel consumption and 62.7% of global GHG emissions.
- Among the top emitters, in 2023 China, India, Russia and Brazil increased their emissions compared to 2022, with India having the largest increase in relative terms (+ 6.1%) and China the largest absolute increase by 784 Mt CO2eq.
- Of all GHG emissions, 73.7% is CO2, while CH4 contributes 18.9% to the total, N2O consists of 4.7% of the total, and F-gases for 2.7%.
- With only two exceptions, 2009 (global financial crisis) and 2020 (COVID-19), global GHG emissions have grown steadily since the beginning of the 21st century.
- Insert: Global GHG emission trends by sector and key years



- **An underground carbon capture and storage reservoir in Decatur, Illinois — owned and operated by agribusiness giant Archer-Daniels-Midland — [leaked](#) nearly 8,000 metric tons of liquid carbon** into the rock formation above. The liquid remains roughly 5,000 feet below the surface and has not affected local drinking water. Nevertheless, the company halted all injections after a second leak was detected and more than 150 environmental groups are urging the Biden administration to pause all other carbon sequestration projects that it has funded.

- According to United Nations human rights experts and Global Witness, **at least 196 environmental activists were [murdered](#) last year.**

- **The federal government issued two disaster declarations for floods in 2000. It has issued 66 this year.**

- Research and Markets -

- What are the [world's top 2% scientists](#) studying? (Note: the medical sciences receive about 2X more attention than energy related topics.)

<u>Research Discipline</u>	<u>Scientists</u>	<u>Institutes</u>
1. AI (includes Image Processing)	8,433	2,341
2. Neurology & Neurosurgery	7,146	1,721
3. Oncology & Carcinogenesis	6,950	1,793
4. General & Internal Medicine	6,922	2,307
5. Energy	6,672	2,042
6. Applied Physics	6,542	1,907
7. Materials	6,383	1,815
8. Cardio Systems & Hematology	4,663	1,466

- **Century Aluminum, the biggest producer of primary aluminum in the US, will receive \$500 million in IRA funding from the DoE to build a new low-emissions plant in northeast Kentucky — the nation's first new smelter in 45 years. The green-smelter facility will [double](#) the amount of primary aluminum manufactured in the US.**

- **KKR is [acquiring](#) a 25% stake in Enilive, a biofuel production facility run by Eni, at a €11.75 billion valuation (about \$12.7 billion USD).**

- **Wilson Sonsini published [updates](#) on its sustainability and ESG advisory practice.**

- **Spotlight on [ResTech](#) -**

- **The USDA has awarded a historic \$1.5 billion for 92 conservation projects that support, protect, and preserve natural resources on agricultural land. Examples of funded projects include:**

- Pennsylvania Department of Agriculture (limit the effects of pollution on water quality).
 - InterTribal Buffalo Council (restore and manage grassland ecosystems using buffalo).
 - Blue Ridge Resource Conservation and Development (restore streambanks and riparian buffers in North Carolina).
-

- Electricity & Power -

- On October 22, overnight lows in Alberta, Canada, dropped well below freezing. Naturally, almost all of Alberta collectively turned on their heat in their homes when they woke up that morning. But it was a cloudy morning, which meant the region's growing solar resources had only 150 MW to offer to the grid. Worse still, the wind wasn't blowing; on average, wind provides Alberta's grid with 1.6 GW, but that day it dropped to less than 0.4 GW. **The market responded: Alberta's pool price immediately hit its \$1000/MWh cap and its AESO grid operator declared an Energy Emergency Alert.** *Note: Alberta's grid was tested again the next day when the region was hit with an unseasonal heat wave and another Energy Emergency Alert.*



- **The DoI's Bureau of Land Management (BLM) approved the Fervo Cape Geothermal Power Project in Utah.** This project will use an enhanced geothermal system to generate up to 2 gigawatts (GW) of baseload power, enough to supply over 2 million homes. *Note: [AES Members](#) have access to *Digging In, A Starter's Guide to Geothermal*.*

- Chinese researchers have unveiled a method using D-Wave's quantum annealing systems to crack classic RSA encryption, which accelerates the timeline for when **quantum computers pose a real threat to utilities that use cryptographic RSA systems.** [AES Members](#) have access to the peer-reviewed research in *The Chinese Journal of Computers* (PDF, Mandarin).

- Universities in the Spotlight -

- Researchers at the **Polytechnic University of Catalonia** have developed a new [hybrid device](#) that combines silicon-based photovoltaics with molecular solar thermal energy storage — the first time these have been paired together.

- Researchers at **Kansas State University** have found that soil treated with manure or compost fertilizer stores more carbon than soil treated with chemical fertilizers or no fertilizer. [AES Members](#) have access to the peer-reviewed research abstract.

- The Luskin Center for Innovation at **UCLA** tracks the ten US states that allow cities and counties to purchase electricity on behalf of their communities — a procurement model called community choice aggregation (CCAs). AES editors recommend a [2019 publication about CCAs](#) by the Luskin Center.

- AES editor's recommend the writing course, "[Writing Quantum Steampunk: Science-Fiction Workshop](#)," taught by Edward Daschle and Nicole Yunger Halpern at the **University of Maryland**, offered during spring 2025. Enrollment opens on October 24 and there will be a maximum 15 seats available.

- Quotes -

- Greenwashing on the rise -

"Many corporations talked about climate somewhere before, but today it's much more pervasive."

- Overheard at ClimateWeek NYC

"Huge brands are rewiring their communications strategy to weave in a climate story that advances broader market leadership."

- [Tim McDonnell, Semafor](#)

"When we were working with companies on this five years ago, the key question they had was, should we act? Now the big question is a much harder one, which is how?"

- Deb Greenspan, Partner at FGS Global

"If you're saying something that you think is unique, the reality is, you're not the only one saying that."

- Peter DeVaux, Young & Rubicam

- Bulletin Board -

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- **Orrick** published [2024 Offshore Wind Report](#). The report is an update on the current OSW market and trends in 20+ key jurisdictions with some forward looking analysis. AES Members have access to [Winds of Change](#).

- **Clearpath** has [primer resources](#) on Ag-Tech, CCUS, Water-Tech, Industrial Fuel.

- **Title Leader** launched a Title Commitments [platform](#) to support title searches by parcel.

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