

ENERGY MATTERS

Soundbite summaries of the energy news you need to know

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AMERICAN ENERGY SOCIETY

March 11, 2024

- The Power Read -

- **Oil:** M&A activity is beginning to surge.
- **Mining:** Lithium prices are retreating.
- **Renewables:** Solar is surging.
- **Climate:** Use of PFAs in fast-food wrappers is receding.

And don't miss...

- **Policy:** The Beltway has been very active lately.
- **Electricity:** Spotlight on the Texas wildfire.

- It's conference season; calendar items of interest:

- **March 18-21:** Tribal Energy Equity Summit ([TEES](#)), River Spirit Resort, Tulsa, Oklahoma (*note: the event is open to tribal leadership and vetted service providers and developers; contact AES if you qualify and want to attend*).
 - **March 19:** Rice Alliance Pitch Preview at the Ion (free, though [registration](#) required).
 - **March 19-21:** Get ready for the Wilton Scott Institute for Energy Innovation's annual conference ([registration](#) is now open).
 - **March 29:** The deadline for seed-stage startups to [apply](#) for the Rice Alliance Clean Energy Accelerator.
 - **April 2:** [Webinar](#) on the Political Environment's Impact on Midstream Planning, hosted by the Center for the Midstream at Lamar University of Texas.
 - **April 16:** UC Davis Industrial Decarbonization Symposium ([registration](#) is open).
 - **April 21-27:** [San Francisco Climate Week](#).
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- Fossil Fuels -

- Oil -

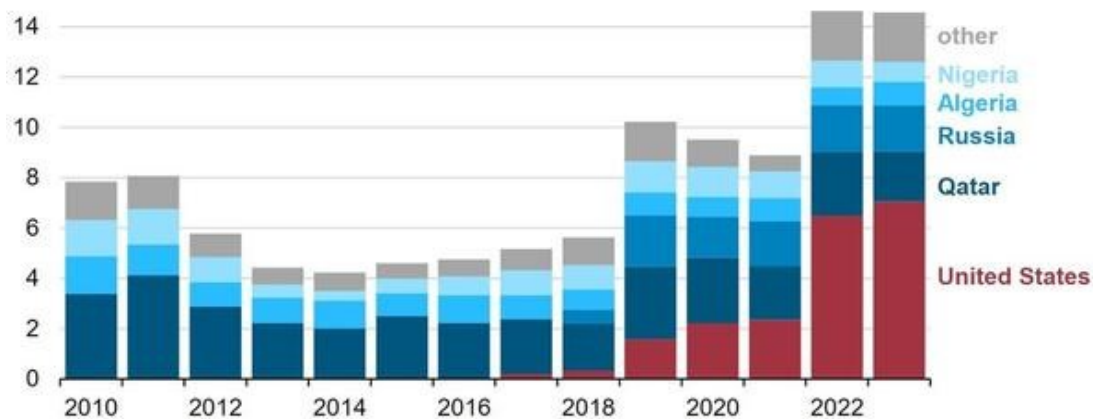
- It's been a while, but **the oil and gas industry is about to begin another phase of M&A activity**. Many deals have been announced, but the five most significant are, in order:

1. ExxonMobil-Pioneer Natural Resources
2. Chevron-Hess
3. Diamondback Energy-Endeavor Energy Resources
4. Chesapeake Energy-Southwestern Energy
5. Permian Resources-Earthstone Energy

Note: only the PR-Earthstone deal has been completed, while the other four are expected to close at various points in 2024. Of the five, the Chevron-Hess deal might be the [most uncertain](#). If Chevron acquires Hess, it would also get Hess' 30% stake in Guyana's massive Stabroek oil block, but it appears that Exxon Mobil is preparing to claim pre-emptive rights to Stabroek, which would disrupt the deal, allow Exxon to outbid Chevron, or force Chevron to also pay Exxon to acquire Hess.

- Natural gas -

- For the third year in a row, **the US is the [largest](#) supplier of liquefied natural gas (LNG) to Europe**, accounting for about half of the total LNG imports. Related, natural gas spot prices in the US have fallen to [record lows](#) last month.



- Coal and mining -

- **Mining companies are [cutting](#) lithium production** because demand is low (due to declining EV sales), whiplashing the market from shortages to oversupply, with prices dropping 80% from record highs in late 2022.

- Carbon capture and removal -

- The US National Science Foundation has issued a formal Request For Comments (aka the public can offer advice) about a new government program that supports ocean CO2 removal. The scale of the need speaks to the opportunity: oceans are the planet's biggest carbon sink, absorbing roughly 30% of human emissions. There are a wide range of unproven chemical, biological, and technological methods to help oceans remove CO2, from seaweed to antacids. But the existing solutions are not without risks. **The Biden administration hopes to create a government program that will oversee coordinated and safe ocean CO2 removal efforts.** AES Members and Friends can submit comments to the [Federal Registry](#) before the end of April.

- No- / Low-Carbon and Renewable Energy -



- The US is on pace to [add](#) 62.8 gigawatts more power capacity than it did in 2023, the most built in a single year since 2003. Of all new power plants, 96% of the added utility-scale generating capacity will be clean energy, and solar will contribute the most (+56%).

- Related, [Solar-For-All](#), \$7 billion federal funds from the IRA to help low-income families install solar power, is close to being finalized. The program will offer 60 total grants.

- There are fifteen Chinese offshore wind manufacturers that supply China domestically and four Western OSW firms (GE Renewable Energy, Nordex, Siemens Gamesa and Vestas) that cater to the rest of the world. However, the **Western companies are losing market share** because of higher input costs, supply chain disruptions, mounting overheads, and onerous contracts. [AES Members](#) have access to the offshore wind report, *Winds of Change*.

- Special report: As covered by AES (*Energy Today*, "[The Roaring 20s](#)," for AES Members only), **the single greatest obstacle slowing the energy transition for all sectors is a shortage of labor** that cannot be filled with AI or other technologies. For instance, truck/tractor-trailer transportation needs about 175,000 drivers, utilities need 10,000s of line- and field-workers, and there is a demand for 100,000s of electricians.

- Energy Policy & Geopolitics -

- Beltway buzz -



- Congress will [pass](#) FY24 spending bills for 6 agencies, including the DoE, which means the federal government will avoid a shutdown. Some agencies got more money, some less:

- **The biggest winner:** nuclear energy, including \$1.69 billion for research and development, about \$212 million more than current levels.
- **The biggest loser:** the EPA, which will have \$1 billion cut from its budget.

- **Scraps:** Many DoE clean energy programs will have small increases, like the Grid Deployment Office (created in the 2021 bipartisan infrastructure bill), which will get \$60M; the Office of Science will get \$8.2 billion in funding, a \$140 million increase.
- **Cuts:** On the other hand, ARPA-e will get \$460 million, a \$10 million cut from last year, and the Office of Fossil Energy and the Department of Interior offshore programs will both have \$25 million cut.

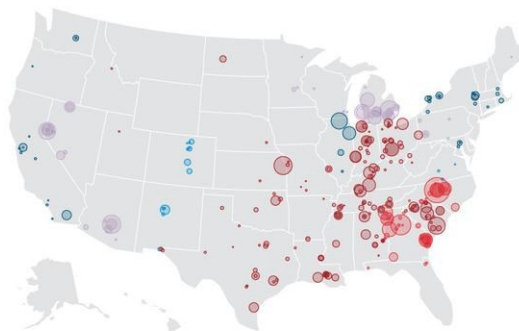
- The US Congress may be historically divided, but **the one issue that has overwhelming bipartisan support is nuclear energy**, especially small modular reactors. For instance, the Senate has already signaled that it would support [H.R. 6544](#) (Atomic Energy Advancement Act), legislation that would support the Nuclear Regulatory Commission and reduce license application fees and streamline some environmental reviews for new SMRs. However, by rule the House will have to consider the bill under "suspension," which means this bipartisan legislation will require a two-thirds majority for passage.

- **The Biden administration will [nominate](#) two Democrats and one Republican to be commissioners on the Federal Energy Regulatory Commission, which will fill all five seats.** The last time FERC had a full commission was in 2020, and before that it was 2016.

- The Department of the Interior will make **\$72 million available to [electrify](#) homes and expand clean energy access in 21 tribal communities.**

- The SEC reversed its plan to require public companies to publish their emission totals, including Scope 3. **The new SEC rule only holds companies accountable for their own emissions** and those caused by the electricity they consume. This reversal is also a strong signal that support for ESG is [eroding](#).

- **Most [federal money](#) that supports new manufacturing and mining (Infrastructure, IRA, CHiPs), etc) is coming from states that generally vote Democrat and given by a Democratic presidential administration, predominantly democratic state taxes, and Congress to states that generally vote Republican.** (Insert map below: where federal money is going; **red** = Republican, **blue** = Democrat; the size of the circle corresponds to funding amounts.) *Editor's note:* in Washington DC, this process of redistributed wealth is informally referred to as "ABC" ("all but California").



- Global energy politics -



- **Europe:** The Finnish capital, Helsinki, has a vast network of civil defense shelters built during the Cold War. The government is reviewing proposals to [convert](#) underground tunnels into a potential source of renewable energy; considerations range from district heating to geothermal.

- **Asia:** China announced that it did [not](#) achieve its main climate goal last year to **decouple emissions from economic growth**.

- **AC/S America:** To offset record low hydropower production (-40% Y/Y), Mexico [increased](#) its use of natural gas (+11% Y/Y).

- **Africa:** Climate Fund Manager is launching a \$1.3 billion energy fund to [finance](#) construction of cross-border energy transmission infrastructure in southern Africa aimed at strengthening the power grid in the region.

- Climate, Sustainability, and Resiliency -



- A voluntary effort led by manufacturers and industry has [phased out](#) **fast food wrappers and packaging that contain PFAs** ("forever" chemicals that do not degrade and harm human health).

- It appears that a **global coral [bleaching](#) event is about to begin**. (*Note: coral can survive a bleaching event, but it creates stress and increases the chances of mortality*).

- "**nonrevenue water**" *noun*, def: [water system leakage](#). The amount is unknowable (~ 1.5 trillion gallons) because it's not being billed, but often water used for firefighting, municipal swimming pools, failed meters, and most of all, deferred maintenance in municipal water systems in older or industrial towns (in order: New York City, Newark, Chicago, Detroit, Cleveland, Buffalo, and much of Alabama and Mississippi).

- The largest [wildfire](#) in Texas history, exacerbated by record heat, strong winds, and dry conditions, swept across the Panhandle, right up to Phillips 66's Borger refinery. Snow then blanketed the region (*insert below*).



- **Xcel Energy** — a major utility with operations in Texas and other states — acknowledged its power lines and equipment “appear to have been involved in an ignition of the Smokehouse Creek [Texas] [wildfire](#).”

- Research and Markets -

- The top 5 clean energy trends to watch in 2024:

1. ~\$800 billion invested in clean energy technologies, up 10%-20% from 2023 (with solar in the lead).
2. Oversupply is driving solar and storage manufacturers into a price war.
3. Higher than expected demand for low-carbon hydrogen as feedstock for ammonia and synthetic methane. ([AES Members](#) have access to the report, *H2 Influencers*; also, AES recommends the [H2 Global Newsfeed](#).)
4. CDR (CO2 removal) will set records.
5. Grid connection delays and grid congestion are major bottlenecks for renewable deployment around the world.



- In addition to dry electrodes (for [AES Members](#) only), **the other hottest energy technology right now is silicon anodes, which are leading much of the innovation in lithium-ion cells**, a more cost-effective, higher-performing alternative to pure graphite.

- *Time* magazine announced its [top 250](#) clean energy companies. **Notable about the full list is the range of subsectors represented**, including heavy industry, development companies, solar, fusion, and especially hydrogen. The top-5 are:

1. [ZeroAvia](#) (hydrogen jet fuel)
2. [Ohmium](#) (hydrogen for industry)
3. [Turntide Technologies](#) (fleet electrification components)
4. [Arcadia](#) (utility data)
5. [Brimstone](#) (carbon negative cement ... and the best website of the top-5)

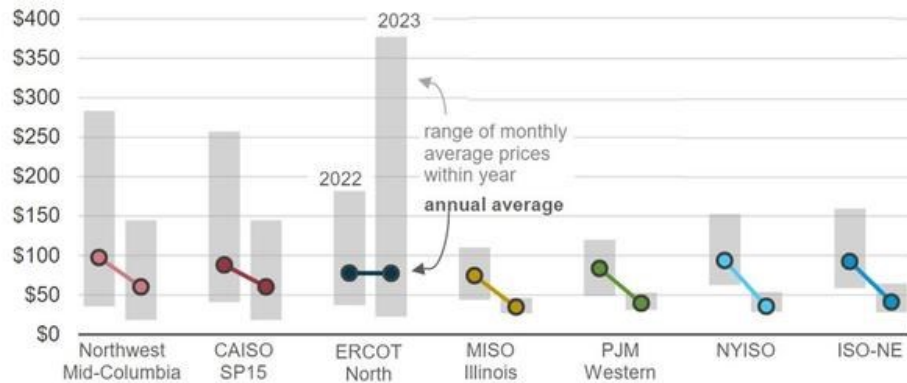
- Meanwhile, Korn Ferry / *Fortune* magazine identified **the 50 most admired companies in the world, and none of them are in or affiliated with any energy sector or sub-sector.**

- If you're interested in hydrogen, **AES recommends [SEP H2 practice areas](#)**, including:

- hydrogen data consortium
 - hydrogen market model
 - H2 newsfeed
 - hydrogen supply chain database
 - H2 innovation report
 - H2 events and conferences.
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- Electricity & Power -

- After a volatile 2022, **average electricity prices on most US grids generally declined in 2023**. Prices decreased primarily because of lower natural gas prices, mild temperatures, and improved hydroelectric conditions in California and the West. Only ERCOT (Texas) experienced wide price swings prices, but it too had relatively low prices.



- April 8, Americans in a broad stretch ACROSS the country will experience a total solar eclipse, the last visible eclipse from the US until 2044. This phenomenon, which is caused by the moon passing directly between the earth and the sun, **will reduce solar energy production in parts of the US for about three hours.** In general, the loss of solar generated power equals the percentage of the sun's coverage. Though solar energy will be interrupted in parts of the US during times of peak generation, electric grid operators are ready.



- *Special report:* For the last 25 years, total electricity consumed by Americans has stayed roughly the same. In 2000, the US used about 4 million gigawatt-hours of electricity; in 2022, it used about 4.5 million GWh, an increase of about 0.5%. However, in the last two years the "[electrification of everything](#)" (such as transportation, heating, and computational power for AI), has led to an **increase in electricity demand for the first time in decades**.

- Last year, the western US experienced historic rainfall, but the drought didn't end for [Trinity Lake](#) and its surrounding region. While much of California was flooding, the state's third largest lake remained essentially dry and the surrounding forest was on wildfire alert. **This year Trinity Lake is already back to its historical average and still rising**, (insert below left is Trinity today; right is Trinity last year). Because every other hydropower dam is already full, Trinity will not have to be used to generate power. Meanwhile, of all hydropower dams, Lake Mead is gaining the most water and was also the most in need (along with the 8 southwest states that depend on it).



- **Top-5 countries** [converting](#) to the electrification of everything (note the Nordic trend):

1. Sweden
2. Denmark
3. Norway
4. Finland
5. Iceland

Fastest rising: Estonia

- Universities in the Spotlight -

- Engineers at **UVa** may have found a way to improve [radar](#) and other sensing technologies.

- **WashU** has launch the Synthetic Biology Manufacturing of Advanced Materials Research Center (SMARC), a new program that will focus on [natural replacements](#) for plastic.

- **Iowa State University** researchers are testing machine learning tools to [warn](#) residents of heat-related emergencies.

- Quotes -

Maybe I shouldn't have said that?

"We've waited too long to open the aperture on the solution sets in terms of what we need to start reducing emissions.... People [consumers and not producers] who are generating the emissions need to be aware of it and pay the price."

(In other words ... "it's not me ... it's you.")

— Darren Woods, CEO of Exxon Mobil

"We have heard the calls for change and we are determined to take action."

(In other words ... delay, defer, deflect.)

— General Counsel and Chief Ethics and Compliance Officer at PG&E

"Carbon capture technology is a complete falsehood."

(In other words ... this is such an extreme statement that there are no other words.)

— Fortescue Metals Chairman Dino Otranto

- Bulletin Board -

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- **Orrick** has published its [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.

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

- **Honeywell's Sustainable Building Technologies** (SBT) is hiring for a global [Senior Director Solutions Architect](#).

- **Ubiquitous Energy**, a leader in transparent solar technology, is [developing](#) energy generating windows and door products.

- **Sunrun**, a residential solar and battery storage installer in the US, has partnered with Ford to launch a new [home electric vehicle \(EV\) charger](#) compatible with any EV model.

- Gratitude -

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