

ENERGY MATTERS

Soundbite summaries of the energy news you need to know

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The Power Read

- **Fossil and Renewables:** Both oil and solar are both surging *and* struggling.
- **Policy:** Two weeks away from 2 deadlines (COP28 and the federal budget).
- **Climate:** Pumpkins are good, but grass lawns and zombies are bad.
- **Low-carbon:** Need to build transmission infrastructure? Reconductor!

News from the Society



AES special reports: The seven winners of the H2Hubs competition have been announced and AES has an exclusive resource — a comprehensive directory of the H2 SMEs to watch. [Join](#) AES as a Member to receive the H2 Influencers report and other special publications. [Contact us](#) if you have questions.

Also, Members receive all end-of-year special publications, including:

- [Energy Writer of the Year](#) (the premier literary award for energy)
- Energy Awards (including person, company, innovation, and startup of the year)
- The Lighter Side of Energy
- The Energy Year in Review (a calendar of energy history)
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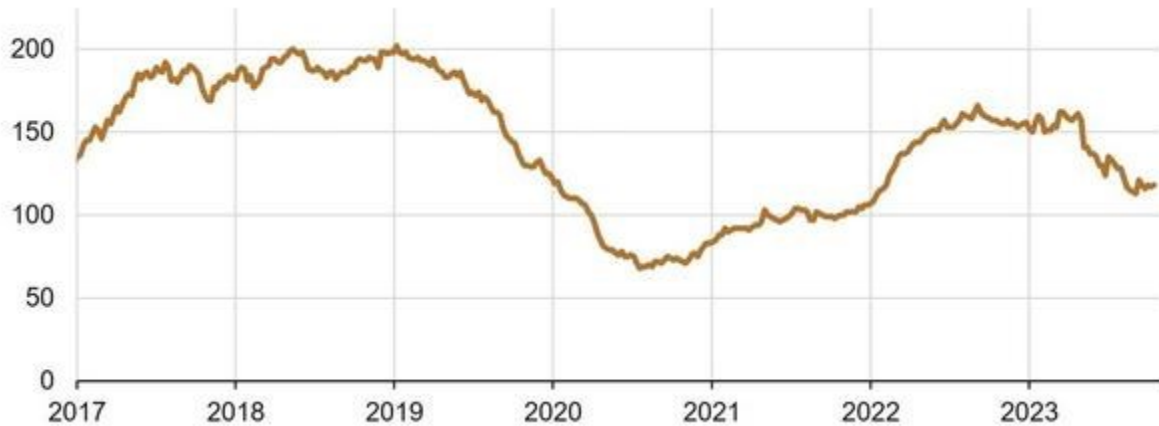
Fossil Fuels

- Oil -

- US supermajor Chevron [acquired](#) Hess for \$53 billion two weeks after Exxon Mobil purchased Pioneer Natural Resources for \$60 billion and while BP doubled its YOY profits (\$27B). *Note:* Many SMEs believe the sector's historic performance is far from over and that **the Permian Basin in Texas will likely remain the centerpiece of all activity** in the foreseeable future. Meanwhile, demand for gasoline is [down](#) and BP and Shell reported quarterly profit downturns of 60% and 38%, respectively, in part because the market is unsure that either company has a strategy during recent [leadership changes](#).

- Natural gas -

- There are currently **118 active natural gas rigs in the US**, a [decrease](#) of 38 rigs since the start of 2023, primarily because natural gas prices are lower. Meanwhile, [capacity additions](#) and [exports](#) are increasing.



- Coal and Mining -



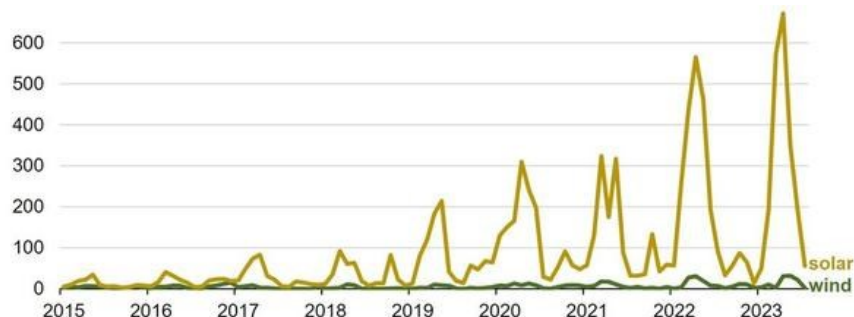
- More than half of the global supply of lithium comes from the "[Lithium Triangle](#)": Argentina, Bolivia, and Chile. [AES Members](#) have access to *Energy Today* article, "The Janus Face of Rare Earths." AES recommends the report, [Lithium Valley](#), by New Energy Nexus.

- Carbon/Carbon Capture -

- Decades of deforestation, degradation, and drought have turned tropical forests (like the Amazon) from carbon sinks to net carbon emitters — a terrible milestone. However, Earth's **forests still collectively draw down more carbon than they emit, mainly due to younger temperate and boreal forests**, especially in North America. [AES Members](#) have access to the peer reviewed research.

No- / Low- Carbon and Renewable Energy

- There is so much solar-generated power in California that **CAISO (the state's grid operator) is increasing "[curtailments](#)"** (aka, the deliberate reduction in output below what could have been produced in order to balance energy supply and demand). *Note:* CAISO is beginning to curtail wind-generated power in California too. *Insert below:* monthly solar and wind curtailments by CAISO, in thousand MWh.



- The Bureau of Ocean Energy Management (**BOEM**) finalized **four new Wind Energy Areas (WEAs) in the Gulf of Mexico**. This announcement follows the first-ever Gulf of Mexico offshore wind lease sale earlier this year, which only garnered one bid. [AES Members](#) have access to the only comprehensive report about OSW on the US west coast.

- The prices of ethanol (D6) and biomass-based diesel (D4) renewable identification number (RIN) credits have **declined** by more than one third to a spot price of \$.90 in just the last two months.

Policy

- Beltway Buzz -

- The US House of Representatives Rules Committee is trying to bring four appropriations bills to the floor: Legislative Branch, Transportation-HUD, Interior, and Financial Services. **The most recent House-passed budget will probably be rejected** by Congress because it proposes a 40% cut to EPA funding and \$677 million less for the Department of Interior budget (to \$14.3B). To keep the government open past the November 17 deadline, the new Speaker will probably have to guide another continuing resolution (CR) through the House. Meanwhile, the Senate will try to move Omnibus "minibuses" of funding legislation that have been stalled since mid-September.

- The [US House](#) Energy, Commerce and Resources committees are currently considering 25 individual pieces of energy-related legislation, while the [US Senate](#) Energy and Mining committees and subcommittees are reviewing another 19 pieces of energy-related legislation.

- The proposed Farm Bill under consideration by Congress includes the Advancing Research on Agricultural Climate Impacts Act, **which would provide financial support for regenerative farming**. AES Members have access to the [draft](#) ARACI Act.

- Global Policy Spotlight -

- **COP28 in Dubai (Nov. 30 - Dec. 12) is less than one month away**. It appears that resiliency will receive more attention than decarbonization (previous COPs, like Paris, focused on emission pledges.) Indeed, the Sharm El-Sheik Adaptation Agenda includes, among other programs:

- Enabling Private Finance for Adaptation (already at capacity);
- A featured Adaptation Implementation [Lab](#);
- The World Federation of Engineering Organizations (WFEO) will host an official COP28 "solutions" seminar that will focus on adaptation.

- Climate and Sustainability -



- *Special AES report: The current [drought](#) in Central America is limiting ship traffic through the Panama Canal and will be the cause of the next supply chain "crisis."* The crisis won't be on the same level experienced during the pandemic, but global trade will be [impacted](#), especially LNG shipments.

- Spotlight on [grass lawns](#) in the US:

- Americans use 800 million gallons of gas every year to cut grass lawns;
- Gas mowers account for up to 5% of the total emissions in the US;
- One hour of mowing a lawn with a gas-powered mower produces the same amount of air pollution as driving a Toyota Camry from Los Angeles to Denver;
- Americans spill 17 million gallons of gas every year while refueling their lawn mowers — more than was famously spilled by the Exxon Valdez in the Gulf of Alaska.

- "Zombie forests" *noun*, def: forest regions where trees are [no longer compatible](#) with the climate they live in.

- A few seasonal pumpkin facts:



- 85% of all canned pumpkin comes from Central Illinois.
- The company that supports the most advanced regenerative farming practices: [Nestlé](#)
- The US federal agency that provides the most support for regenerative farming: USDA.

- Research, Development and Markets -



- The market for electric transportation is increasing for passenger cars, big-rig trucks, school buses, delivery vans, ferries, and now ... [freight trains](#). [Wabtec](#), a railroad technology company, is prototyping a heavy-haul electric locomotive with a battery capacity of 7 megawatt-hours.

- Researchers have developed a super thin and lightweight (like a human hair) fabric-based [solar cell material](#) that can be used on any surface as a source of power.

- Researchers in Japan used a graphene filter to block large molecules that typically degrade fuel cells. [AES Members](#) have access to the peer reviewed research.

- **BP is purchasing \$100 million of Tesla ultrafast chargers** to build out its US "[bp pulse](#)" charging network. It will begin installing the self-branded chargers next year at its BP and Amoco gas stations, AM/PM and Thorntons convenience stores, and TravelCenters of America truck stops, as well as at large "Gigahub" charging sites in major US cities.

- The [top-10](#) issues facing the midstream industry:

1. Attracting new talent
 2. Political (partisan) environment
 3. New regulations (tie)
 4. Government energy policy (tie)
 5. Aging infrastructure
 6. Business outlook
 7. Emerging engineering issues
 8. Permitting
 9. Capital availability
 10. Supply chain
-

- Electricity, Power, and Efficiency -



- *Special report:* It appears that **electricity transmission capacity can be doubled if existing transmission lines are replaced with "reconductored" (aka upgraded) advanced composite-core conductors**, which are cost-effective and do not require additional regulatory permitting. [AES Members](#) have access to the peer reviewed research. *Insert:* old and existing transmission cable on the left; new reconductored composite-core

conductor on the right.

- The single greatest external force that impacts the grid is extreme weather. Of the nine Independent Systems Operators in the US, **the grids that had the mildest weather conditions this summer were California Independent System Operator (CAISO) and New York Independent System Operator (NYISO)**, while the Electric Reliability Council of Texas (ERCOT) had the most extreme conditions.

- State-grid spotlight:

- Washington has the [lowest](#) power sector CO2 emissions, followed by Idaho, California, and Oregon.
- Montana generates 52% of its power from renewable energy, 8th highest in the US.

- The top-5 states that use natural gas to produce electricity:

1. Texas: 9.25 Tcf; 25.4%
2. Pennsylvania: 7.41 Tcf; 20.4%
3. Louisiana: 4.04 Tcf; 11.1%
4. West Virginia: 2.69 Tcf; 7.4%
5. Oklahoma: 2.51 Tcf; 6.9%

- University Spotlight -

- The 2023 gold, silver, and bronze winners of the **Lamar University** [CMMS Midstream Essay Contest](#) are, in order: Aiden Manji, Colin Waquespack, Trevor Pierce.

- **University of Houston** offers 8-week, online executive education [courses](#) on topics related to energy, broadly conceived. For instance, a recent course examines the technology, economics, and challenges of Carbon Capture Utilization and Storage (CCUS).

- **Portland State University** offers a [Graduate Certificate](#) in Emergency Management and Community Resilience .

- AES recommends [Visualizing Energy](#), a project of IGS at **Boston University**.

- Bulletin Board -

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- [Nextcorps](#) received \$4.5 million from the National Science Foundation to support innovation in deep tech.
- Geoff Duncan at [Ubiquitous Energy](#) published "A Diversified Approach to Renewable Energy in Construction"
- [Centrus](#) is beginning first-of-a-kind production of High-Assay Low-Enriched Uranium (HALEU) two months ahead of schedule at the American Centrifuge Plant in Piketon, Ohio.
- *SPOTLIGHT*: **Schneider Electric** is hiring [Project Development Managers](#), [Senior Account Executives](#), [Automation Engineers II](#), and [Performance Assurance Consultants](#).
- #SolarAPP+, a free online [platform](#) developed in partnership between **Sunrun** and the US DoE, helps local governments navigate the solar permitting process.
- **Unearth** is a dynamic Mobile GIS that connects assets, data, and field teams for critical infrastructure providers. Start your [free](#) trial today.

- Quotes -

Is Russia picking a fight with Armenia?

"Until Armenia accepts Russian as its official language, Russia will no longer recognize a driver's license from Armenia."

Bill passed by Duma, the lower house of the Russian legislature

"Armenia will only import natural gas from Russia."

Alexander Novak, Energy Minister of Russia

"These are all warning shots."

Duma Speaker Vyacheslav Volodin, describing Moscow's policies toward Armenia.

"These are just gestures now, but could be followed by harsher measures."

A not-so veiled threat by Mikhail Mishustin, Prime Minister of Russia, toward Armenia


- Gratitude -

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