

ENERGY MATTERS

Soundbite summaries of the energy news you need to know

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The Power Read

- **Fossil:** Global consumption of oil, natural gas, and coal are at all-time highs.
- **Low-carbon:** A comparison of hydrogen's best-case uses, WoodMac vs. Michael Liebreich. See also the AES report [H2 Influencers](#) and SEP [topic reports](#) on hydrogen.
- **Policy:** Congress has days to pass spending bills to avoid a shut down.
- **Markets:** The primary driver of inflation throughout the energy sector right now is, ironically, gasoline prices; the second force-multiplier is government spending through the IRA; the third is supply-chain constraints for commodities and manufacturing.

News from the Society

Student volunteers are needed for the Advanced Bioeconomy Leadership Conference on Next Gen Technologies ([ABLC NEXT 2023](#)), October 18-20, at the Hotel Nikko in San Francisco. Students interested in the bioeconomy (advanced nutrition, renewable materials, sustainable biofuels, etc.) and who want free admission should [sign up](#) to volunteer.

Open RFP: Submit a proposal to develop a National Green Hydrogen Roadmap for the Royal Government of Bhutan. Proposals are due October 20, 2023. (Note: this is a US DoE government-funded project, so the RFP follows all relevant federal procurement regulations and laws.) Submit proposals in soft copy (PDF) to [Derek Burke](#), Senior Program Coordinator, at dburke@usea.org. [Contact us](#) for help or with questions.

Fossil Fuels

- Oil -

- **Global oil consumption will set an [all-time high](#) in 2023 and then it will break that record in 2024.** The primary driver is the macroeconomic recovery of China, where manufacturing output and retail sales are now growing at 4.5% YOY and all-time high refinery output at 15.23 million b/d. OPEC has confirmed both the 2023 and 2024 expectations, led by global GDP growth at 2.6%.

- Natural gas -

- **US natural gas supply has set a [new record](#)** (3,978 trillion cubic feet), 3.6% more than the previous record set in 2020; meanwhile, the sector needs another 2-4 Bcf/d of pipeline capacity in order to meet demand – meaning, with more NG pipelines, more records will be broken in the future. (*Note: 40% of the total US natural gas supply comes from the Marcellus and Utica shale plays in the Atlantic region.*)

- Coal and Mining -

- AES editors recommend the **interactive [map](#) of global coal capacity**:



- Carbon/Carbon Capture -

- The EU, UK, California, and the Canadian province of Ontario have mandatory carbon markets that cover specific industry sectors and gases. However, **the price of carbon credits can [vary](#) depending on the market**, from a few cents per metric ton of CO2 emissions to \$20/mtCO2e, depending on whether there are mandatory or voluntary policy-drivers in place.

No- / Low- Carbon and Renewable Energy

- **The lithium deposit at Thacker Pass on the Oregon/Nevada border might be the largest in the world.** AES [Members](#) have access to the peer-reviewed research.

- **Solar panels in North Africa generate about [three times more](#) energy than in Europe**, all else being equal including the solar panels.

- On the one hand, **climate tech startups in Southeast Asia raised more than US \$1 billion**, an 80% [increase](#) compared to 2021. On the other hand, this total is less than 3% of global climate funding.

- *Special insights* - **hydrogen's best-case uses, a comparative view of WoodMac vs. Michael Liebreich** (note: AES Members have access to [H2 Influencers](#); AES editors recommend the SEP [topic reports](#) on hydrogen:

[WoodMac](#)

The most promising H2 technologies

- Transport
- Steel
- Aviation fuel
- Shipping
- Long-duration storage

[Michael Liebreich](#)

The clean H2 ladder (Includes ammonia, e-fuels, and synfuels)

- Fertilizer (essential)
- Hydrogenation (essential)
- Methanol (essential)
- Hydrocracking (essential)
- Desulphurization (essential)

And, one rung down ...

- Shipping (competitive)
- Steel (competitive)
- Chemical feedstock (competitive)
- Long-term storage (competitive)

Energy Policy & Geopolitics



- *In memoriam*: **Bill Richardson (November 15, 1947 – September 1, 2023)**. American politician, author, and diplomat who served as governor of New Mexico (2003 to 2011), US ambassador to the United Nations (1997- 1998), US Congressman (1983 - 1997), and Secretary of the Department of Energy (1998 - 2001).

- AES recommends the [final report](#), *Recommendations to Improve Mining on Public Lands*. (Editor's note: this PDF document is 169 pages.)

- Beltway Buzz -

- **Congress has only a few more days to pass spending bills to avoid a shut down.**

- **Meanwhile, there are a lot of upcoming Congressional hearings and briefings**, especially in the US House of Representatives:

- House Energy will look at PM 2.5, national air quality standards, and hydropower;
- House Resources will discuss onshore oil/gas drilling (especially the missing 5-year plan and the Administration's mixed signals);
- House Science looks at Council on Environmental Quality (CEQ) restrictions.

- Congress is considering the **Carbon Dioxide Removal Research and Development Act**, which will provide \$12B to support RD&D for carbon removal technologies. The program would complement other federal efforts to support this emerging sector, such as the [Carbon Negative Shot](#).

- The Biden administration will use executive power to launch a new federal program, the [American Climate Corps](#), which will train 20,000 young professionals in renewable energy and climate change.
- Congress is considering legislation that would block California from getting a waiver for its strict fuel economy rules and prohibit its ban of ICE cars.
- Wilson Sonsini has updated its Clean Energy and Climate Solutions Federal Funding [database](#), including new funding opportunity announcements (FOAs).

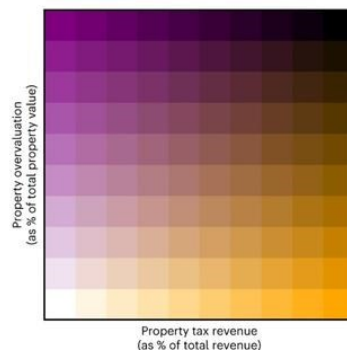
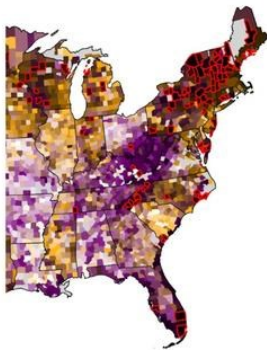
- Global Spotlight -

- [BRICS](#) is expanding from five to 11 nations, and most of the new members are major oil exporters (including Iran, Saudi Arabia, United Arab Emirates, Algeria, Egypt, etc.) representing about 33% of the world's GDP. (Note: the original BRICS bloc – Brazil, Russia, India, and China – was initiated by Russia in 2009 to counter the influence of the G7, G20, and the West in the contemporary world order.)

- Climate and Sustainability -

- Desalination facilities in Saudi Arabia [consume](#) 1.5 million barrels of oil per day.
- "[thermal runaway event](#)" noun; *def*: a phenomenon observed in batteries when the electro-thermal positive feedback in bipolar transistors has an excessive temperature rise; also sometimes used to describe a wildfire.
- More than half of all US groundwater sites are [depleted](#); related, lawn grass is the largest irrigated crop in the US (AES [Members](#) have access to the peer reviewed research).
- Florida is the [most vulnerable](#) region to the changing climate in the economically developed world. *Editor's note*: see the related story on overvalued homes and climate risk in the "Markets" section below.
- A severe drought in Panama has forced the Canal to [reduce](#) transits to 32 ships per day.

- Research, Development and Markets -



- 14.6 million homes in the US have "unpriced" climate risk and are therefore overvalued; most are along the Gulf and Atlantic coasts and especially Florida, where there is less popular concern about the changing climate and, consequently, no flood risk disclosure laws. On average, homes in these regions are about 8.5% overvalued, which increases foreclosure risk. AES [Members](#) have access to the peer-reviewed research.

- **Keep an eye on [galvorn](#)**; it is a material that might be stronger than steel, lighter than aluminum, and has the conductivity of copper.
 - **The [primary driver](#) of inflation in the US is gasoline prices**; a 10.6% month-on-month increase in the gasoline index accounted for half of the monthly gain in the CPI even though core inflation slowed to its lowest levels since 2021.
 - **Chevron has purchased a majority stake in ACES Delta, the world's largest storage facility for [green hydrogen](#)**, located in Delta, Utah.
 - **The chief executive officer of BP, Bernard Looney, will [resign](#)** due to his failure to disclose past relationships with colleagues.
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- Electricity, Power, and Efficiency -

- **This time of year is especially [difficult](#) for utilities in the US to meet electricity demand** because it is still hot and very dry in many parts of the country. Under normal circumstances, these summer conditions are especially difficult for the MISO region and Texas, except these regions are windier than usual, which has increased wind power output by 13%. That means utilities in the Northwest are at greatest risk because drought has reduced hydropower output. Hydropower plants in the Northwest will soon begin their annual "Chum" season, when fall rainy season begins, allowing operators to switch from minimal drawdown to extra releases. AES Members have access to [Water Works](#), a special report on hydropower.
 - Related, the **[top-10 peak demand events in the Texas ERCOT all took place this year](#)** (signaling, among other things, that demand in Texas is growing significantly year-over-year).
 - **Morocco [exports](#) solar-generated electricity to Spain** via two transmission lines; meanwhile, Morocco has agreed to the Xlinks megaproject with the EU, which will [transmit](#) 10,500 megawatts of electricity generated by energy farms in the Moroccan desert through 2,300 miles of high-voltage submarine transmission cables to utilities in Portugal, Spain, France, and SW England.
 - **AES recommends the report, [The Control Room of the Future](#), by the [Global PST consortium](#)** (Australian Energy Market Operator, CAISO, ERCOT, EirGrid, Energinet, National Grid Electricity System Operator, and Electric Power Research Institute).
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- University Spotlight -

- September 29th, marking the start of CWRU Climate Action Week and the end of Innovation Week, the Great Lakes Energy Institute at **CWRU** and our #ThinkEnergy Fellows will host a live X/Twitter chat from 9 AM ET- 11:30 AM ET via @thinkenergyCWRU; followed immediately by an InstagramLive event via @cwruthinkenergy from 11:30 AM ET to 1 PM ET.
 - The Electric Power Innovation for a Carbon-free Society ([EPICS](#)) Center in the Ralph O'Connor Sustainable Energy Institute (ROSEI) at **Johns Hopkins University** is developing computing, economic, engineering, and policy tools for utilities.
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- Quotes -

[Climate Week NYC 2023 ... The Buzz](#)

“Humanity has opened the gates to hell.”

- United Nations Secretary-General António Guterres, opening speech

“This climate crisis is a fossil fuel crisis.”

- California Gov. Gavin Newsom

Critics did not attend Climate Week NYC but still had something to say ...

Florida Governor Ron DeSantis vowed to "make America energy dominant."

“I ask for a more pragmatic and realistic approach to net zero.”

- Rishi Sunak, Prime Minister of the United Kingdom, calling it a "hope and hype" conference

- Bulletin Board -

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- AES applauds the new **WE2** (Women for Energy Efficiency) [program](#) of the IAC.

- **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.

- Gratitude -

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