

# ENERGY MATTERS

Soundbite summaries of the energy news you need to know

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## The Power Read

- **Fossil fuels:** For the first time in 50 years, increased oil prices did not lead to a recession.
- **Low-carbon:** California is essentially the only state that uses renewable diesel.
- **Policy:** The US House is planning big cuts to pure research funding.
- **Climate:** July was the hottest month ... ever.
- **Electricity:** For the first time in twenty years, FERC passes major transmission interconnection reform.

## News from the Society

- There are thousands of unfilled jobs in energy. [Contact us](#) if you're curious about new professional opportunities, or [join the SE talent community](#) to find more job opportunities.

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## Fossil Fuels

- Oil -



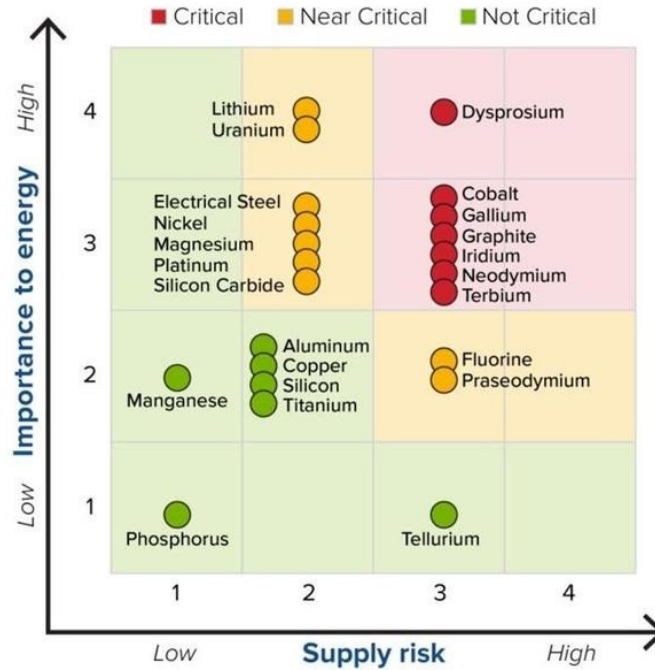
- **For the first time in 50 years, an increase in oil prices did not lead to a recession.** Some SME's believe that [Janet Yellen](#) deserves most of the credit for this historic accomplishment. The US and the world avoided recession in part because Yellen spearheaded the large strategic reserve oil release announced in March 2022 (more than 200 million barrels). The release was widely derided by pundits; however, it worked because it defused the "hoarding" response that accompanied earlier disruptions.

- Natural Gas -

- **The only economically developed country in the world that has declining natural gas consumption is Japan.** The country is restarting its nuclear power plants.

- Coal and Mining -

- The **most critical** rare earth metals, minerals, and materials based on immediate need and importance to energy:

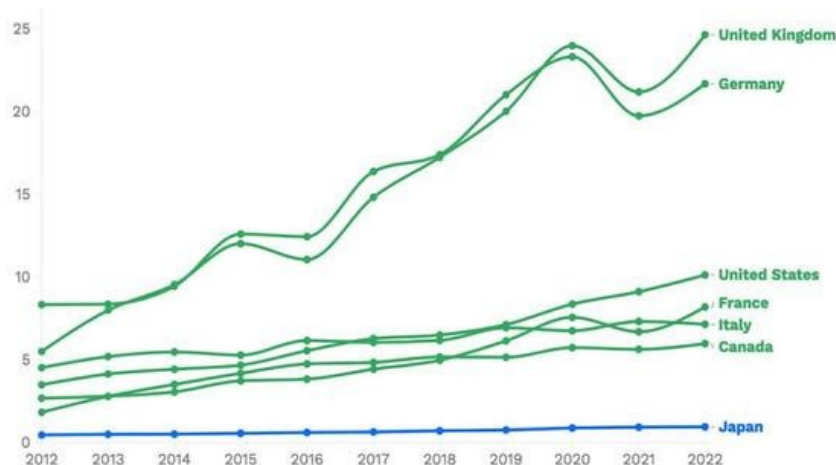


### - Carbon/Carbon Capture -

- **Trend spotting: Biochar is booming**, accounting for more than 85% of delivered carbon removal on the voluntary market. (Note: [biochar](#) is a carbon-rich, charcoal-like substance produced by heating organic plant material, known as biomass, that can be used in carbon storage and for improved soil health.)

## No- / Low- Carbon and Renewable Energy

- **Share of on- and off-shore wind power in electricity generation among G-7 countries**, as a percentage of the total.



- Related, **the largest wind turbine in the world is 344 feet tall** (including blades) and will begin operating in Skara, Sweden later this year. The tower is built with [laminated wood](#) that is stronger and lighter than steel.

- **Costs associated with US offshore wind projects have risen by 57% since 2021** due to inflation in components and labor costs, as well as rising interest rates. As a result, Spanish utility Iberdrola SA agreed to pay \$48.9m in fines to cancel a wind power contract off the coast of Massachusetts.

- **Almost all US renewable diesel is consumed in California**, but almost [none](#) is made there. Renewable diesel is made in Louisiana (46% of the total), North Dakota, Wyoming, Washington, Kansas, and also a bit in California. (Oregon is the only other state that consumes renewable diesel, but it is 1% of the total consumed by California.)



- **Unit 3 at the Vogtle Nuclear Power Plant is now in commercial operation.**

On the one hand, the plant is seven years late and \$17 billion over budget; on the other hand:

- At capacity, Vogtle can produce 1,100 megawatts of electricity (enough power for 500,000 homes and businesses);
- Other utilities in Georgia, Florida, and Alabama, in addition to Georgia Power's 2.7 million customers, are receiving Vogtle's electricity.
- This is the first new nuclear power plant to open in the US in 30-plus years.

- *Save the date:* October 16 and 17, 2023, Richmond, VA. [The Virginia Clean Energy Summit](#) will host a conference on clean energy technologies, policies, and business practices that are transforming Virginia's energy sector.

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## Energy Policy & Geopolitics

### - Beltway Buzz -

*Congress has resumed its District work period, which lasts until about Labor Day.*

- The below table is a comparison of the [R&D funding budgets for basic and applied research that passed the House Appropriations Committee, as well as a comparison with last year's budget](#). Funding for all R&D is lower because the final debt-ceiling compromise (Fiscal Responsibility Act) that was signed into law reduced totals to below FY 2023 levels; basic research funding is significantly lower because it has a lower priority within the Republican party platform. (*Note Civics 101:* the US House, which is currently controlled by the Republican party, is responsible for the federal budget, but there are still opportunities to make adjustments.)

#### Basic Research

Previous budget: \$48B  
**FY2024 House: \$23B**  
Difference 2023 v 2024: -\$24B

#### Applied Research

Previous budget: \$50B  
**FY2024 House: \$40B**  
Difference 2023 v 2024: -\$9B

- **The US has officially banned incandescent light bulbs.**

- **The Statement of Intent developed at the 2023 Tribal Energy Equity Summit** will guide future engagement and dialogue between Tribal and Federal governments: "*We demand to be met where we are in energy development and regulation.*"

- **Wilson Sonsini has updated its Clean Energy and Climate Solutions Federal Funding database**, including new funding opportunity announcements (FOAs).

## - State Spotlights -

- **New Mexico, Alabama, and South Carolina** banned the direct sale of Tesla cars; the same 3 states plus 7 more—Connecticut, Louisiana, Nebraska, Oklahoma, Texas, Wisconsin, West Virginia—[prohibit](#) Tesla service centers. (Note: Tesla is beginning to sell their vehicles on tribal lands to bypass these restrictive state laws.)

- **Virginia:** Governor Youngkin pulled the Commonwealth [out](#) of the Regional Greenhouse Gas Initiative ([RGGI](#)), a cooperative cap-and-invest effort among twelve Eastern states to reduce carbon dioxide (CO2) emissions from power plants within each participating state.

- **California:** [Assembly Bill 205](#) proposes a tiered fixed charge for electricity based on income (lower-income ratepayers receive higher savings); the CPUC has already approved the new Rate Principle.

## - Global Spotlights -



- **Asia:** *Ninja miners*: the slang term for illegal miners in [Mongolia](#). The green bowls they carry on their backs to transport mined minerals resemble the shells of Teenage Mutant Ninja Turtles. Note: located between China and Russia, Mongolia is fast becoming a primary supplier of critical minerals for US clean energy, including copper, silver, uranium, and molybdenum.

- **Africa:** Electric bikes are [more popular](#) than EV automobiles by a very wide margin.

- **C/S America:** Sigma Lithium produced the world's [first](#) green lithium (triple zero: zero carbon, zero waste and zero harmful chemicals) in the Jequitinhonha Valley, Brazil.

- **Europe:** Europe has generated so much solar power this summer that it has occasionally [shut off](#) some solar plants.

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## Climate and Sustainability



- **Along the California coast, average winter wave heights have increased one foot in the last 50 years;** and, the number of extreme wave events — when waves are more than double-overhead — has doubled in the last 25 years. *Insert:* a Maverick big wave in [Half Moon Bay](#), California. [AES Members](#) have access to the peer-reviewed research.

- **Do not put polyethylene-based plastic in the microwave.** [AES Members](#) have access to the peer reviewed research.

- **The US does not have nearly enough seeds to plant one trillion trees.** [AES Members](#) have access to the peer-reviewed research.

- **The Antarctic set an all-time record for its [lowest](#) amount of ice.**

- **The 6 countries [most vulnerable](#) to future climate changes** (e.g. "warming" and/or "extreme weather"), in order:

1. Chad
2. Central African Republic

3. Democratic Republic of the Congo
4. Sudan
5. Afghanistan
6. Somalia

- Related, the **4 river regions that had sufficient freshwater but now face crisis:**

- Fertile Crescent — Iraq, Israel, Lebanon, Syria, Turkey, Iran, the West Bank and Gaza
- Mekong in Southeast Asia
- Nile in northern Africa
- Colorado River in the United States
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- The US Fish and Wildlife Service estimates that it will cost **\$2,783,591,500 to save the threatened Oregon spotted frog.**

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## Research, Development and Market Deployment

- The latest in geoengineering: **A massive, reflective sunshade built between Earth and the sun that helps cool the planet** by blocking out some incoming solar radiation. (Engineer James Early first proposed a version of the plan in 1989.) [AES Members](#) have access to the peer reviewed research.

- The latest in gravity: once completed, **the 25 MW EVx Gravity Energy Storage system in Shanghai will be one of the largest long duration energy storage systems in the world.**

- Startups in the "**Built Environment**" **space closed more than \$1.8 billion in VC deals** in H1 2023, the strongest H1 ever and on pace to **double** Y/Y funding raised in 2021.

- On the one hand, EV's spend **twice as long** on new car sales lots as ICE gasoline-powered cars. On the other hand, **EVs overall sales are projected to surpass 1 million this year** — more than twice the number sold in 2021.

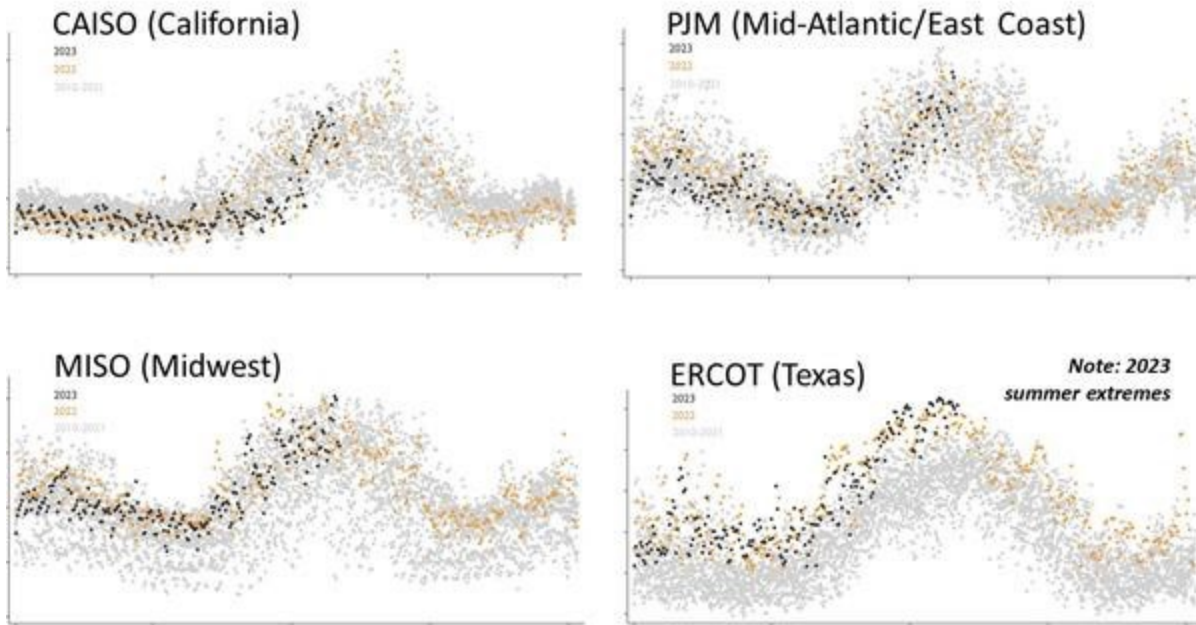
- **The first 5 significant events in oil history:**

1. 1846 - The first major oil production site was dug (not drilled) in Baku, Azerbaijan.
2. 1859 - Edwin Drake drilled (70 feet) the first-ever oil well, in Titusville, Pennsylvania.
3. 1861 - Lyne Taliaferro Barret drilled the first oil well in Texas.
4. 1901 - A geyser of crude oil erupted on Spindletop Hill, Texas.
5. 1903 - William Knox D'Arcy and George Reynolds discovered oil in Masjed Soleiman, Persia (Iran).

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## Electricity, Power, and Efficiency

- **The four graphs below chart 14 years of daily peak electricity consumption**, in gigawatts by regional independent system operators from January (left) thru December (right), where the middle of the x-axis of each scatter chart is summer. *Note: black dots represent 2023.*



- The Federal Energy Regulatory Commission (**FERC**) approved a rule to speed up clogged interconnection processes. The rule, called [Order 2023](#), is the first major change to FERC's interconnection requirements in two decades.

- US commercial buildings in hot climates — primarily in the southernmost parts of the country — are **six times more energy-intensive for cooling than buildings in colder climates** (as measured in British thermal units per square foot, or MBtu/sf).

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## University Spotlight

- AES recommends the **Notre Dame**-Global Adaptation Initiative [Index](#).
- AES applauds the launch of the [Center for Energy Studies](#) at the **University of Tulsa**.
- AES is impressed that **Oregon State University** has begun construction of a wave energy testing [facility](#) off the Oregon Coast.
- **University of Houston** researchers have found that certain small molecular [crystals](#) can help manage nuclear waste.
- **Rice University** engineers created hydrogen from sunlight with [record-breaking](#) efficiency.
- The Center for Global Sustainability at **University of Maryland** is modeling Maryland's Climate [Goals](#).

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## Quotes

Celebrating the Federal Energy Regulatory Commission's (FERC) new "**Order 2023**" that will speed up clogged interconnection processes

- "Permitting is something that had to be tackled. There definitely needed to be some expediting."
- US House of Representatives Member Ro Khanna

“If we’re looking to meet ambitious clean energy goals and mandates starting as soon as 2030, we could not take 16 years to get a project from conception to groundbreaking” (the average length of time to get a permit).

- Larry Gasteiger, executive director of transmission owner trade group [WIRES](#)

“Reform had to happen. All transmission lines, especially in the West, almost always cross lands managed by different agencies, with different permits and standards.”

- Transmission SME [Rob Gramlich](#)

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## - Bulletin Board -

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- 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.

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