

ENERGY MATTERS

Soundbite summaries of the energy news you need to know

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- The Power Read -

- **Oil:** Saudi Arabia is playing the long game.
- **Renewables:** During the eclipse on April 8, the loss of solar generated power will equal the percentage of the sun's coverage.
- **Climate:** the US has the [second highest](#) weather damage in the world.
- **Research:** "miassite" is a new superconductive material that can conduct electricity without energy loss

- Fossil Fuels -

- Oil -

- Saudi Arabia is betting on the long game — that **oil in the ground will be more valuable in 10 or 15 years** than oil extracted today.

- Gas -

- It appears that **the [Port of Rotterdam](#) and the [Texas Gulf Coast](#) will be the hydrogen capitals of the world.** (Shanghai, the largest port in the world, is a distant third and Nagoya, Japan, is fourth.)

- Coal and mining -

- The energy transition is desperate for rare and critical metals **but the US is losing the great power competition with China** because China dominates the processing of metals and minerals.

- Carbon capture and removal -

- **The ocean holds 60 times more carbon than the atmosphere** (almost [30%](#) of CO₂); the Earth's soils contain about 2,500 gigatons of carbon — three times the amount that's in the atmosphere — or, about [25%](#) (most is absorbed by permafrost and peat in the Arctic).

- No- / Low-Carbon and Renewable Energy -

- Invenergy is developing a [solar project](#) in Northeast Texas that covers 18,000 acres (for comparison, that's bigger than Manhattan).

- The 12-turbine [South Fork](#) offshore wind farm, the first commercial scale offshore wind farm in the US, is **officially online**. The 132 MW project, located 35 miles off NY's Long Island, is capable of powering the equivalent of 70,000 homes. (Note: AES Members have access to [Winds of Change](#), a report on the state of OSW on the US West Coast.)

- Geothermal Shot, part of DoE's Energy Earthshot Initiative, published a strategic [roadmap](#) for next-gen geothermal.

- On April 8, Americans in a broad stretch of the country will experience a total solar eclipse. In general, **the loss of solar generated power will equal 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.



- Energy Policy & Geopolitics -

- Beltway buzz -



-The US Senate completed its hearings to consider President Biden's FERC commissioner nominations of David Rosner and Judy Chang (both Democrats) and Lindsay See (Republican). It appears that all will be approved, which will round out the five-member commission that has been shorthanded since early last year and is currently down to three members.

- The DoE finalized [new EV mileage rules](#) that allow EV manufacturers to reach the federally mandated **72% mileage improvement target by 2030 instead of 2027**. Under the old rule, General Motors would have faced \$6.5 billion in fines, Chrysler with \$3 billion, and Ford with \$1 billion — all were prepared to reduce EV manufacturing in order to avoid the fines.

- *Thought exercise*: the US is the largest producer of oil and gas in the world, but it is *not* a petrostate.

- The DoE's "pause" on liquefied natural gas exports will *not* continue past 2024.

- *Spotlight on energy geopolitics*: When OPEC agreed to include Russia into its cartel, it essentially became an **export trade association** that protects market share but has less geopolitical influence.

- Wilson Sonsini updated its **Clean Energy and Climate Solutions Federal Funding [database](#)** of funding for, among other categories: clean ports, advanced manufacturing for industry and also for small businesses, and clean energy development on tribal lands.

- Climate, Sustainability, and Resiliency -

- **The 5 biggest climate projects**:



1. Launch a solar power station into space.
2. Energy islands like Vindø in Denmark. ([AES Members](#) have access to the *Energy Today* issue, "Denmark: Tracking True North," including an article about energy islands.)
3. Stabilize the "doomsday" glacier, Thwaites, in Antarctica, which has lost more than 1 trillion tons of ice (*insert*).
4. Re-green the Sinai peninsula; the combination of nature and humans have turned this subtropical region into a desert.
5. Remove 80 megatons of CO2 from the air by increasing the total number of direct air capture plants from 18 (current) to 4,000+.

- **Ten countries have consistently healthy air**: Finland, Estonia, Puerto Rico, Australia, New Zealand, Bermuda, Grenada, Iceland, Mauritius and French Polynesia. (Note: Bangladesh has the worst.)

- All else being equal, **the US has the [second highest](#) weather damage in the world** and the Philippines has the most. Both are surrounded by two oceans and large gulfs.

- **2023 was the [hottest](#) year ever.**

- Research and Markets -



- "**superconductivity**" noun, def: a material can conduct electricity without energy loss. The main superconductivity test is called the "London penetration depth." It determines how far a weak magnetic field can penetrate the superconductor bulk from the surface. This test showed that [miassite](#) (*insert*) is an "unconventional" superconductor.

- **Spotlight on AI in energy:** on the one hand, industries like aviation, agriculture and energy suppliers use AI to improve efficiencies and find climate solutions; on the other hand, AI's thirst for power and water is growing. For instance, in 2022, data centers used 460 terawatt hours, or 2% of electricity worldwide, but the IEA estimates that total will [double](#) by 2026.

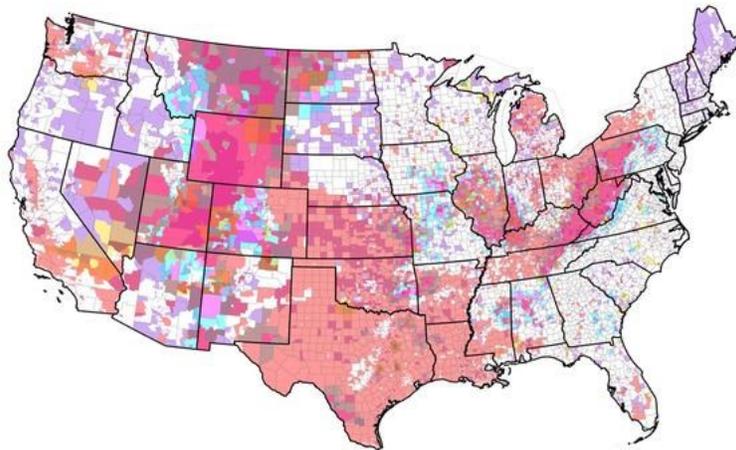
- Two years ago, EVs cost about \$17,000 more than a gas-powered ICE car (all things being equal); **in 2024 the price difference between an EV and an ICE is \$5,000.**

- **Many states (especially Florida, Texas, New York, and California) are one major extreme weather event [away from](#) a total insurance industry collapse;** the private insurance industry is incapable of keeping up with the effects of climate change.

- [Heatcube](#) is a new thermal energy storage technology; in other words, a mini-CSP, concentrating solar power plant).

- AES recommends the [article](#) "Challenging Conventional Wisdom That Impacts the Midstream Industry."

- Editor's note, breaking news: the IRS added **446 more US counties that qualify for [energy community tax credits](#).**



- Electricity & Power -



- **Solar curtailments in southern California are setting records.** Total oversupply averaged 1.4 GW in January, 609 MW in February, and 3.7 GW for the first two weeks in March. Much of that oversupply would have gone to northern California except that two south-to-north transmission lines, Path 15 (Los Banos) and NOB (Nevada/Oregon border), are not reliable (*source: EnergyGPS*).

- About 46% of all projects in the ISO New England interconnection queue that are waiting for permitting and connection to the grid are battery projects; most probably [won't get approval](#) because **ISO New England has determined that most batteries don't reliably recharge during cold winter months.**

- About 1/3 of PJM's 196 GW of installed power capacity is **at risk of being retired** due to high emissions (coal) or old and faulty equipment. However, PJM has approved only 7.2 GW in the interconnection queue (mainly renewables). PJM's market monitor ordered the ISO to speed up the permitting process to maintain reliability.

- The popular press is wrong: the global EV market is *not* flat. With more new electric cars on the market each year, **oil has a new competitor and it's not renewables but utilities.**

- Universities in the Spotlight -

- Students with the [Advanced Energy Institute](#) at **Southern Illinois University** are using algae to [increase](#) agriculture crop yields.

- The deadline for seed-stage startups to [apply](#) to the **Rice Alliance Clean Energy Accelerator** is March 29.

- Keep an eye on "Spindletop," an elite investment program for undergraduate students at **SMU** who learn through *practicum* how to [invest](#) in traditional and green energy companies.

- **UCSC** researchers have been able to create a gallium aluminum [alloy](#) (and clean hydrogen gas) at room temperature when it comes in contact with any water source.

The N.C. Clean Energy Technology Center (NCCETC) at **NC State** [published](#) "50 States of Power Decarbonization."

- Quotes -

When the difference between political theory and legislation become blurred...

The Freedom Caucus, the furthest right bloc of Republicans in the US House of Representatives, submitted at least six energy bills as part of their long-touted "Energy Week." These proposals include:

- [H.R. 1023](#), by Rep. Gary Palmer (R-Ala.), limits and in some cases prohibits legal challenges by environmentalists.
 - [H.R. 6009](#), by Rep. Lauren Boebert (R-Colo.): The "Restoring American Energy Dominance Act," reduces and in some cases eliminates royalty rates for oil companies that have leases with the federal government that allows them to drill on public lands.
 - [H.R. 1121](#), by Rep. Jeff Duncan (R-S.C.), prohibits any moratorium on hydraulic fracturing for oil and natural gas.
 - [H.R. 987](#) denounces "the harmful, anti-American energy policies of the Biden administration.
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- 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.
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- Gratitude -

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