

ENERGY MATTERS

Soundbite summaries of the energy news you need to know

AN OFFICIAL PUBLICATION OF



AMERICAN ENERGY SOCIETY

Week of October 25, 2021

- The Power Read -

- **Climate:** What you need to know for COP26 next week.
- **Policy:** Three national security agencies released reports on climate change.
- **Oil:** Innovation in the oil patch.
- **Renewables:** Senseless tension between advocates of lithium vs. hydrogen.

- News from the Society -

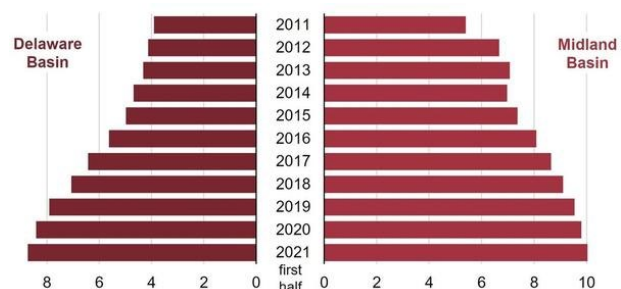
Next week American Energy Society releases its newest [report](#), *500 Sustainability Thought Leaders*. This report is based on our dataset of the sustainability thought leaders that experts follow.

- Tell your colleagues to [join](#) the Society today, or become a Friend for [free](#).
- Organization subscribers have access to the full dataset. [Contact us](#) to learn more about all-access privileges for universities, companies, non-profits, etc.

- Fossil Fuels -

- Oil -

- **The oil and gas industry is experiencing an innovation cycle**, especially in the Permian Basin (Texas and New Mexico), where the average [lateral length per well](#) has almost doubled in just ten years, reducing costs and increasing productivity. (*Insert: average lateral length of wells, in 1,000 feet.*)



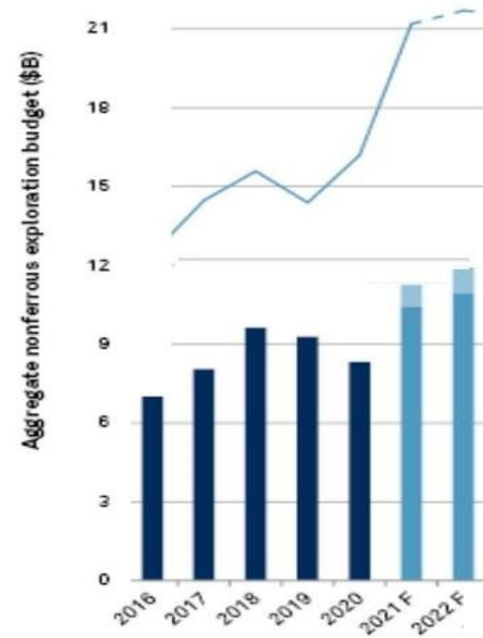
- Gas -

- The Yamal-Europe gas route (*insert*) is the primary pipeline from Russia into western Europe. **Despite very high demand, Russia's state gas giant Gazprom is transporting only 30 million cubic meters of 86.5 million cubic meters capacity per day.**



- Mining, Minerals and Coal -

- Higher than expected metal prices (+25% to +35%) are driving **up** exploration budgets. *Insert:* original vs projected estimated exploration budgets, in billions USD.

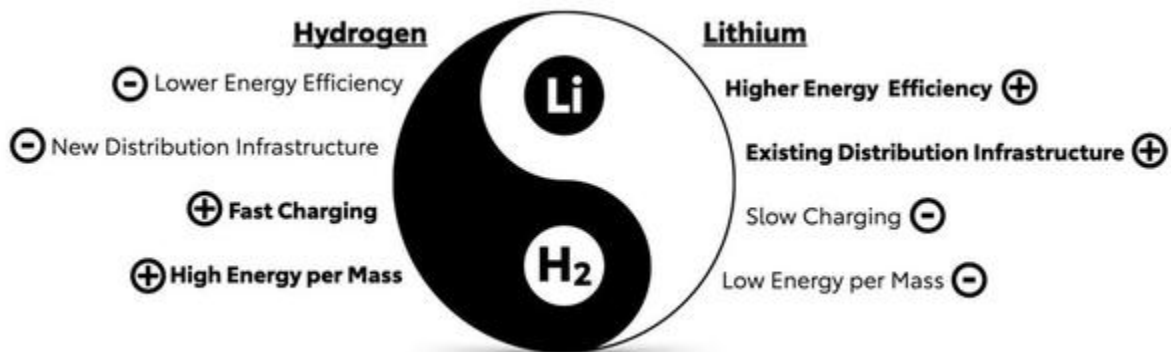


- Carbon Capture -

- There are now 135 commercial carbon capture and storage facilities in the "project pipeline." Of those, 27 **are in operation** today. (Thank you AES expert Member [Julio Friedmann](#).)

- Low-Carbon Energy -

- A [comparison](#) of hydrogen (as used in fuel cells and engines) and lithium (as used in lithium-ion batteries):



- US nuclear [outages](#) are usually planned and happen least often during summer and winter when electricity demand is high — plant operators try to ensure plants are operational to meet the increased electricity demand associated with air conditioning and electric heating. Planned nuclear outages are usually scheduled to coincide with a plant's refueling cycle every 18 to 24 months, mostly in fall and spring when electricity demand is lower. AES recommends an [interactive map](#) of US nuclear outages.

- Solar is the fastest [growing](#) energy source in China. AES Members have access to the [peer-reviewed research](#).

- CalWave has successfully [commissioned](#) and deployed its [wave energy technology](#) (video) off the coast of San Diego.

- Recommended resource: SEP published "[2021 Cleantech Innovation Hubs Survey](#)." Spotlight: SEP researchers identified a robust and productive "Colorado Clean Range."

- Policy -

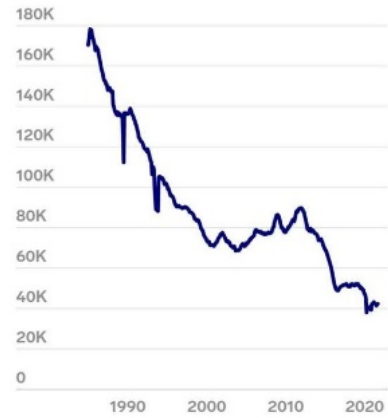
- *Beltway Buzz*: The most significant part of President Biden's climate agenda — a program to rapidly replace the nation's coal- and gas-fired power plants with wind, solar and nuclear energy — has been **dropped from the budget bill under consideration in Congress**.

Biden was elected on a promise to take action on climate change and create well-paid jobs in the process. Shortly after taking office, he submitted a pledge to the UN to cut US emissions 50-52% by 2030 from 2005 levels. COP26 delegates are questioning the credibility of the Biden administration to meet its targets. Senator Joe Manchin, the Democrat from coal-rich West Virginia, told the White House that he strongly opposes the program. ("The shift away from fossil fuels is happening too fast too soon.")



Context: coal mining jobs have fallen from a peak of 178,000 people in 1985 to roughly 42,000 today. In 2019 in West Virginia, there were 10,647 jobs in underground mines and 3,3341 surface mine jobs (unofficially, these totals fell during the pandemic).

Insert: coal mining jobs in the US.



- *Recommended resources:* The Biden Administration released three studies on national security and climate change (heat, drought, food shortages, rising sea levels, etc.).

1. **The DoD published "[Climate Adaptation Plan](#)."** *Summary:* the DoD strongly supports a commitment to microgrids and power storage.
2. **The National Intelligence Council [National Intelligence Estimate](#)** on Climate Change released its unclassified findings.
3. **Department of Homeland Security** published its [Strategic Framework](#) to Address Climate Change.

- Policy around the world -

- **China recently implemented a new consumption tax policy that affects imports of two fuels:** mixed aromatics (which is blended into gasoline) and light cycle oil (which is blended into diesel). These components were previously exempt from China's consumption tax. This new policy has [significantly reduced](#) China's imports of these products and its exports of petroleum products.

- Climate and Sustainability -

- Through June, in the ancient state of Tatarstan, Russia, there was an **underground pipeline leaking methane at [395 metric tons an hour](#)**.

- **The top-3 largest emitters of greenhouse gases in the world:**

1. China
2. United States
3. [Concrete](#)

- **Low gasoline prices correlate with obesity;** cheap fuel leads to people using cars and vehicles rather than walking or biking ... which results in obesity. The [research](#) uses data from 146 countries over the period 1998-2016.

- **The Itaipu Dam, which supplies around 10% of the energy consumed in Brazil and 86% in Paraguay, has essentially [no water](#).**

- In Mumbai, India, there is a "[mountain of garbage](#)" that is 18 stories high.



- COP26 Spotlight -

What to know and what to watch,
brought to you by the generous support of [Honeywell Building Technologies](#)

- COP26 is the United Nations Conference of Parties' (COP) 26th year of addressing global climate change. Originally, the 26th COP climate conference was scheduled to be held between Nov. 9 and Nov. 19, 2020, but rescheduled due to the COVID-19 pandemic. The new date for the conference is Nov. 1 - 12, 2021, in Glasgow, Scotland.
- The main goal of this year's conference is to secure a global emissions rate of net-zero by mid-century as proposed by the Paris Agreement.
- To meet the goal of net-zero emissions, the nations of the world must accelerate the phase-out of coal as a viable fuel source, curtail deforestation, improve the functionality and adoption rates of electric vehicles, and encourage capital investment in renewable resources (along with many other goals).
- COP26 early success: the most important achievement of COP26 is the phaseout of hydrofluorocarbons (HFCs), a potent greenhouse gas widely used in air-conditioning and refrigeration. The US has already announced that it will cut 85% of its HFCs in the next 15 years, while COP26 delegates will consider a global HFC phasedown.

- *Recommended resource:* The challenge of this, or any, climate accord is finding one common goal in everyone's self-interest. AES recommends a [peer-reviewed paper on climate accords](#).

- Attendance at COP26 is expected to be about 30,000 - the largest summit hosted in the U.K.; the guest list is long and includes, among others: global diplomats (Kerry/McCarthy), climate wonks (Gore/Thunberg) and celebrities (DiCaprio/Bezos).



- Research and Markets -

- RFP's available:

- Training session on Project and Portfolio Management for the [Senegal](#) utility, Senelec. Training is anticipated to be in-person in Dakar, Senegal and must be provided in French (deadline Nov. 19, 2021).
- A study of [Honduras'](#) General Law of the Electrical Industry, with suggested actions and best practices (deadline extended to Oct. 29, 2021).
- A proposal for a project on Flexible Alternating Current Transmission System (FACTS) for the [Kazakhstan](#) Electricity Grid Operating Company.
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- *Recommended resource:* **The [top-10](#) issues facing the midstream industry.** (Sneak peek the top-3: aging infrastructure; attracting young talent; the energy transition.)

- **Activate Berkeley, Boston and New York (new) is now accepting [applications](#) for Cohort 2022.** (Note: in Empowering Impact, a report on *all* US incubators and accelerators of energy- and climate-tech, American Energy Society named Activate an "elite influencer." [Members](#) have access to the report; [organization subscribers](#) have access to the dataset.)

Recommended resource: Coal is an industry in transition. Once America's primary fuel source, the industry has been in decline for decades. OEP offers a [webinar](#) that examines the industry's future in the energy transition.

- Electricity, Power, Efficiency, and the Grid -

- **Annual US coal-fired electricity generation will [increase](#) for the first time since 2014.**

- In 2012, LED bulbs were used in about 9% of all commercial buildings; **today, LED bulbs are used in about 44% of all commercial buildings.** (Note: about 68% still use fluorescent bulbs to meet some or all of their lighting needs.) In general, LEDs are about 50% more efficient than fluorescent lights, which are about 50% more efficient than incandescent bulbs. (AES Members have access to the EIA 2018 Commercial Buildings Energy Consumption Survey [datasets](#).)

- **[More than half](#) the population in Puerto Rico (1.5 million) experienced a rolling blackout in August or September of this year.**

- **The Illinois Power Agency ("IPA") is offering a one-year [paid Fellowship Program](#) - applications are due October 31, 2021.**

- Cybersecurity Spotlight -

- **49% of all energy companies are at [risk](#) of a cyberattack because of out-of-date computer operating systems.**

- Academia Spotlight -

- **The University of Georgia** has a number of new programs, including: the [New Materials Institute](#), the [Marine Institute](#), and the [Georgia Initiative for Climate & Society](#)
- **Texas Tech University** offers an [Interdisciplinary Master of Science](#) that blends business, law, renewable energy, oil and gas.
- The [Environmental Resource Engineering \(ERE\) program](#) at the [Schatz Center](#), **Humboldt State University**, is one of the oldest energy and sustainability programs in the US.
- **UC Merced** has a number of energy and sustainability programs, including [CITRIS](#) and the [Banatao Institute](#).
- **The University of Toledo** offers an Environmental Engineering [degree](#) that allows students to design their own program and practicum.
- **Tulane University** features energy studies in its alumni magazine, [Tulanian](#).
- **Lamar University** is hosting a [webinar](#) on SmartBall Multi-Sensor Inline Inspection.
- **SUNY - Environmental Science & Forestry** is seeking a [Campus Energy Manager](#).
- **Clarkson University** offers a Business of Energy [degree](#).

- Bulletin Board -

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- [The Green Program](#) experiential sustainable development program has added Belize and Austria to its other programs in Iceland, Peru, Japan and Nepal.
- Nov. 3 - 4, the C3E Women in Clean Energy is hosting its [10th annual symposium](#).
- Uearth has published a report on [wildfires and utilities](#).
- Clearpath released a report: [The Role of Utility Commitments on the Path to 2050](#)

Quotes: When energy and politics collide

"We are not using natural gas as a weapon. Even during the hardest parts of the Cold War Russia regularly fulfilled its contractual obligations and supplied gas to Europe."

- Russian President Vladimir Putin.

"In terms of the Russian state, there is clear evidence that it uses its gas exports for its own geopolitical gain; it uses natural gas strategically, it's not just a commercial venture."

- Manchester University's Matthew Paterson, professor of international and climate politics.

Meanwhile...

"It makes no sense to me at all for us to pay utilities billions of dollars for what they're going to do as the market transitions."

- Joe Manchin, Senator from West Virginia, on why he opposes President Biden's Clean Electricity Performance Program, which would financially reward utilities that transition to renewable energy and penalize those which do not.

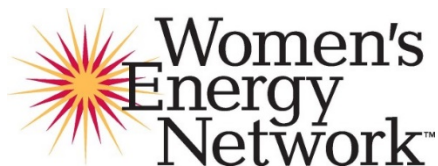
"I think that there is a lot of frustration with the Senator [Manchin] in that he has not come forward and said 'This is what I want.'"

- Bernie Sanders, Senator from Vermont (I).

- Gratitude -

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