

Energy Matters

February 3, 2020

An official e-publication of:



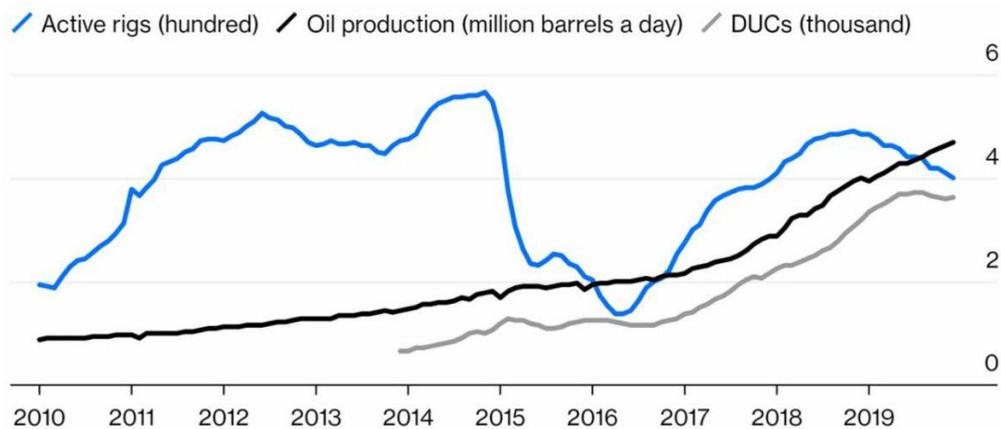
**AMERICAN
ENERGY
SOCIETY**

Sound-bite summaries of the energy news you need to know.

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Fossil Fuels

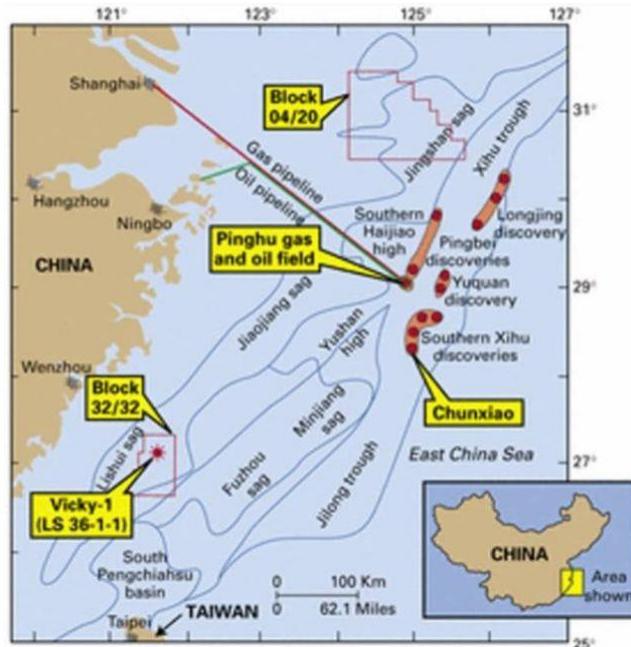
- **Oil: the Permian's uncertain future.** Oil production in the Permian continues to grow. Though the rigs are more efficient, legacy-well production is declining by 275,000 barrels/day. Oil producers are drilling more "parent-child" wells in the Permian Basin (wells spaced too close together), which reduces the amount of oil that can be recovered by 15% to 20%.



- *Spotlight, [coal in MENA](#): Importation of coal into the Middle East and North Africa increased +32% last year, primarily for cement, steel and calcined coke industries. (Calcined coke is used to make anodes for aluminum and titanium smelting.)*

- **Carbon Capture:** Microsoft pledged to invest \$1 billion dollars in technologies removing carbon from the atmosphere. AES expert Member Noah Deich at [Carbon180](#) calls it "Microsoft's best idea since Windows 95."

- Featured story, [natural gas, the tip of the spear](#). Using unconventional drilling methods, the **China National Petroleum Corporation (CNPC)** found **crude oil and natural gas** in the northwestern region of Xinjiang, China. The now spudded well, 8,882 meters deep, is producing about 1,050 barrels of oil/day and about 50,000 cubic meters of natural gas/day. For comparison, drilling in the Bakken in North Dakota can reach about 27,000 feet deep (and two-miles lateral) and produce about 1 million bpd and 1.94 billion cf/d of natural gas.



Low-Carbon Energy

- [Solar](#). A camera mounted alongside a solar array can scan the sky and feed information into image analysis software that computes the optimal position for each mirror in the array, rotating in increments smaller than 1/160 of a degree. **Automated solar arrays produce 20% more power than a static array.**



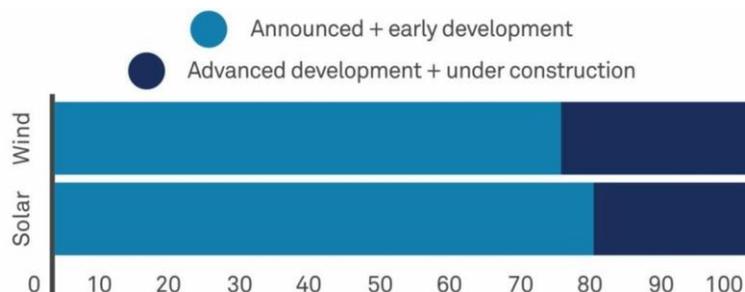
- [Nuclear in Germany](#), by the numbers:

- The first nuclear power stations were constructed in Germany in the 1960s.
- Germany's last nuclear reactor was commissioned in 1989.
- In the 2000s, 25% of Germany's electricity production came from nuclear plants.
- Immediately following the 2011 nuclear disaster in Fukushima, Japan, Germany shut down about 8 GW of nuclear production capacity.

- [Wind and Solar in 2020](#): In advance of tax incentives expiring, **about 72 GW of wind and solar projects are planned in 2020.** (Insert: planned projects, by percentage.)

Editor's note: It is unlikely that all 72 GW of planned capacity will be achieved in 2020.

Visit the [American Energy Society website](#) to see the top-5 states developing wind power capacity, and the top-4 states developing solar power.



- **The slow adoption of a [circular economy](#).** The amount of material annually consumed by humanity has passed 100 billion tons, but the reuse of resources has fallen from 9.1% to 8.6%. (Note: the average person annually consumes about 13 tons of materials.)

Policy

- **The 9th Circuit dismissed *Juliana v. United States*,** a case in which 21 young people and an advocacy group sought to compel the government to take action to address greenhouse gas emissions. Although the court said the plaintiffs made a “compelling case that action is needed,” it ruled that courts simply don’t have the power to fix those policies. AES Members have access to a true and correct copy of the [Court Opinion](#).



- The EPA has released its long-awaited regulation to **remove millions of miles of streams and roughly half the country’s wetlands from federal protection.** [Navigable Waters Protection Rule](#) replaces the previous definition of protected waterways. AES Members have access to the pre-publication rule (note: the document is 340 pages long).

- FERC Commissioner Bernard McNamee will [not seek a new term](#) when his current one expires at the end of June. In the past, it has taken years to fill a FERC seat, from nomination to confirmation. That means **McNamee's departure will leave the five-member FERC with only two commissioners and no quorum to vote.**

Climate and Sustainability

- A [study](#) sponsored by the Proceedings of the National Academy of Sciences found that global warming will "make it [more difficult](#) to grow grapes for good wine." According to the study, a 4-degree rise (about 7-degrees F) would threaten 85% of the wine crop.

Editor's note: If global temperatures rise 4-degrees Celsius, there will be more to worry about than wine.

- Poor road quality increases fuel consumption. The net effect is small, but **poor quality roads in urban settings can account for an additional [10% increase in fuel use](#).** (Note : According to a recent study, Boston has the worst maintained roads in the US.)

- **Australia's bush fires [doubled](#) the country's annual greenhouse gas emissions.**

- More evidence that sustainability has gone mainstream: The WM Phoenix Golf Tournament Open, known as “The Greatest Show on Grass,” has gained legendary status for being unlike any other tournament on the PGA Tour (loud crowds, a music festival, celebrities, etc.); **the event will also feature a [Sustainability Forum](#).**



- **Recommended sustainability resources, published by the United Nations [SDSN](#):**

- The [2019 US Cities Sustainable Development Report](#), including data.
 - [Low-Carbon Transition Strategies for the Midwest US](#).
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Research and Markets

- Spotlight, corporate sustainability. **Corporations that have recently pledged in 2020 to go carbon neutral:**

[Microsoft](#)
[Blackrock](#)
Ikea

[LinkedIn](#)
Bank of America
Bloomberg

Capital One
eBay
Facebook

- "Carbon neutrality" has become a dominant theme for businesses committed to sustainability, but **no one has defined what "neutral" means**. For instance, Starbucks has pledged carbon neutrality, but that means encouraging customers to use [less dairy](#). (The whipped cream in Starbucks drinks emits 50 times more greenhouse gas than the company's private jet.) Or, BlackRock announced divestment from the coal industry; however, the new approach allows for investments in [utilities that burn coal](#). Nevertheless, AES Member expert Julio Friedmann says "Microsoft is in the pole-position" [video](#).

- The [issue](#) that corporations are mentioning the most in social media: sustainability.

- Related, according to a survey of executives in the oil and gas sector, **40% of all companies face a talent/skills [labor-shortage gap](#)**.

Electricity, Power and Efficiency

- Related to the special report in the "Market" section above: **In the US energy sector, 77% of employers report [difficulty hiring qualified workers](#)**.

- The [largest nuclear electricity producers](#) are the US with 808,028 GWh of nuclear electricity in 2019, followed by France with 395,908 GWh.

- **Electricity, by the numbers:**

- In 2019, wholesale electricity prices were lower in every US state, except [Texas](#).
- In 1960, U.S. residential electricity prices were 40% higher in real terms than today.
- In 1960, only 2% of U.S. homes were heated with electricity. [Today it's 38%](#).

Cybersecurity Spotlight

- [Iran has a history of cyberattacks](#). In 2016, Iran executed a cyberattack on a New York dam; in 2014, the nation levied a cyberattack on a Las Vegas Sands casino. The current surge of cyberattacks traced to Iran are targeting a few critical sectors in the US, including: heavy industry, oil and gas, electrical generation and grid infrastructure.

Quotes - The Space Between

"Reluctantly, we conclude that such relief is beyond our constitutional power. Rather, the plaintiffs' impressive case for redress must be presented to the political branches of government."

- Opinion of the 9th Circuit Court in *Juliana v. United States*.

"Heavy industry, oil and gas, electrical generation and the attached grid infrastructure, as well as other critical infrastructure are all caught in the crosshairs as of this moment."

- Richard Henderson, Head of global threat intelligence, regarding likely retaliation in the form of cyber-attack by Iran

"Most of the threats from climate change are 50 to 75 years out."

- Andrew Wheeler, Director of the US EPA (The Sierra Club has submitted a Freedom of Information Act request and filed a lawsuit to push the agency to hand over any documents or research that supports Wheeler's statement.)