

Energy Matters

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Thank you for your Membership in the American Energy Society.

From the desk of the Editor

There is so much energy news that it is important to notice what makes this particular historical moment exceptional: speed.

Every story is fast: the virus, markets, policies, and fear about unfolding events — spread by social media but also by traditional journalism.

To help you make sense of it all, AES has published this special edition of Energy Matters - the trusted source for soundbite summaries of the energy news you need to know.

For more insights, see also [Energy Today](#) as well as the [AES newsfeed](#).

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(Non-partisan, sector-agnostic, non-lobbying - we *enable* energy professionals.)

Fossil Fuels



Oil: The Saudis announced that their [market](#) works at \$30/barrel, so Russia said they were comfortable at \$25/barrel. Each has threatened to increase production (Saudi Arabia: +2.6 million bpd; Russia: +300,000 bpd in the short term and then +500,000 bpd.) But in response to the coronavirus, the world is on pace to reduce oil by 10 million barrel per day (or about 10% of the world's total oil consumption). Simply put, **supply is increasing but demand is decreasing**. Meanwhile, [Iraq](#) is playing "peacemaker" to the OPEC cartel, encouraging Saudi Arabia and Russia to reach an agreement that will bring stability to oil markets.

Natural Gas: Last year, the US consumed more [natural gas](#), again (85 billion cubic feet per day, or +3%).

Coal: US [coal exports](#) declined to 93 million short tons (MMst) in 2019, a 20% decrease from the previous year. Note: US export of steam coal (for electrical power) exports dropped 30% in 2019 from 2018; metallurgical coal (for manufacturing) had a more moderate decline of 12%.

Carbon Capture: A recent [study](#) found that **wood product innovations have enormous market and carbon storage potential**. AES Members have access to the [study](#). (Recommended: page 6 of 116 of the report.)

Low Carbon Energy



- This was expected to be a peak year in [new capacity additions for wind and solar projects](#); and, **electricity generation from renewable sources was on pace to surpass nuclear and coal** next year ... until the pandemic and oil-price wars disrupted all energy markets.
 - Related, the [wind industry](#) is facing fewer roadblocks than the solar industry. Both Vestas Wind Systems and Siemens Gamesa Renewable Energy have facilities in a region of northern China that no longer has WHO restrictions on shipping. That means that wind turbine production will be back to full capacity soon.
 - In 2019, the US generated 40% of its electricity using [low-carbon technologies](#) - nuclear, hydropower, wind, solar, and others.
 - Nuclear power is fading in North America and Western Europe; however, **there are 53 nuclear reactors under construction in the rest of the world**; most are being built in Eastern Europe and Asia; China is building more reactors than the entire Western world combined.
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Policy



- The US DoE has issued a [“dear colleague”](#) letter asking AES Members and others for ideas on how the department and the national labs can best use their scientific and technological resources and expertise to contribute to the national coronavirus response.
- **US energy sectors asking for financial relief from the federal government:**
 - The oil and gas industry is asking for broad financial protection from sinking prices and the coronavirus pandemic.
 - A caucus of Republicans are asking President Trump to place an embargo on crude oil from Russia and Saudi Arabia to prevent "flooding the US market."
 - The nation's major airlines recently asked for \$50 billion in government assistance.
 - A caucus of mostly Democrats are drafting a renewable energy tax credit provision into a large stimulus package.
- Related, the Domestic Energy Producers Alliance — chaired by [Harold Hamm](#) of Continental Resources — plans to **file a formal “anti-dumping” complaint with the US Department of Commerce**. If the case is accepted (there's no doubt about the “dumping,” only whether it meets a specific legal definition) relief in the form of punitive tariffs will follow, but not soon.
- **The DoE will purchase oil for the Strategic Petroleum Reserve**, most of which will be the light, sweet oil that is common in most US basins. *Note:* even if the DoE starts buying oil for the SPR, it will take six months to one year to fill the projected 77 million barrel increase. AES Members have access to a true and correct copy of the [memo](#) ordering the purchase.

- **The comment period for EPA's proposed scientific transparency rule is now open.** Note: The Trump administration refers to the Rule as "Strengthening Transparency in Regulatory Science" (Reg. 2080-AA14); opponents call it the "Secret Science Rule." AES Members can [submit comments to the Federal Register](#).

- The Energy Bill put forth by Senators Lisa Murkowski (R-Alaska) and Joe Manchin (D-W.Va.) was **held up by a rider that would phase down the use of hydrofluorocarbons (HFCs)**. Consideration of the energy bill will resume after the current Congressional recess.

- The President is once again **caught between oil refiners and ethanol producers** centered around small refinery exemptions under the RFS. Making the issue more difficult, the outbreak of COVID-19 has led to lower fuel consumption - producers of both biofuels and gasoline are seeing weaker demand.

- **FERC has a quorum again** - James Danly has been [confirmed](#) by Congress to serve as a Republican commissioner. (FERC is an independent office of the Department of Energy that regulates interstate transmission of electricity and natural gas and oil.)

Policy Around the World

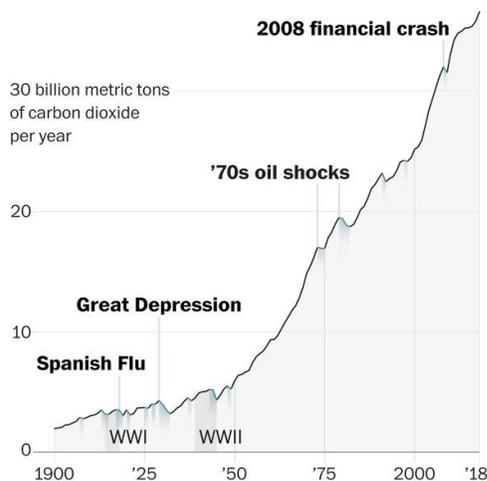
- The [most vulnerable](#) oil producing countries are: Ecuador, Iraq and Nigeria. (Revenues will fall by 50% to 85% this year.) Which oil producing country has been hit hardest? [Russia](#).

- China's Ministry of Ecology and Environment is [relaxing environmental rules](#) to allow its factories to get **back up to speed** during the coronavirus pandemic.

Climate and Sustainability

Global crises have spurred the largest emissions drops

- Global crises often initiate a brief period of decreasing emissions (insert).



During the economic recovery after the 2008-09 global financial crash, carbon emissions [increased](#) 5%.

- Carbon monoxide emissions from cars has [reduced](#) nearly 50% compared with this time last year.

- Since the coronavirus outbreak, there has been a [25% drop in energy use and emissions in China](#), which will lead to an annual decline of 1% of global emissions.

- Brazil is planning to build 75 roads, totaling 12,000 km (7,456 miles), through its remote [Amazon basins](#).

- The wealthiest tenth of people consume about 20 times [more energy](#) overall than the bottom ten. The gulf is greatest in transport, where **the top tenth consume 187 times more fuel than the poorest tenth**.

Source: Global Carbon Project

Research and Markets

- At the risk of stating the obvious, **the global energy economy is in [recession](#)**, even if that is not an official designation.



- As a result of the oil price war, **oil supertanker charter rates (VLCCs) are [skyrocketing](#), up 678%**. Unipetec, the trading unit of Asia's largest refiner, Chinese Sinopec, is protesting the higher freight rates and has requested a rate reduction.



- The US Bureau of Ocean Energy Management held a lease sale for oil and gas explorers and producers of about 78 million acres along the coastline of the Gulf of Mexico. Demand is low, given current oil demand and price uncertainty; indeed, the oil and gas lease sale in August generated just \$159 million, the lowest level of all previous sales. AES Members have access to records of [Lease Sale 254](#).

- Major oil companies are [storing jet fuel at sea](#) as the coronavirus outbreak disrupts airline activity globally. Storing jet fuel at sea, however, is something of a last resort. The product is sensitive to contamination and degrades more quickly than other refined fuels and cannot be used for anything other than aviation. Jet fuel demand averages about 8 million barrels per day, but that has already dropped by about 25%. For instance, BP has provisionally booked the 60,000-ton Stena Polaris tanker to store jet fuel for 40 to 60 days at a rate of \$25,500 a day; Royal Dutch Shell has provisionally booked Torm Sara to store jet fuel for 90 to 120 days.

- CEO Elon Musk defied the "shelter-in-place" order for the San Francisco Bay Area and sent an email message to all employees that Teslas are "critical to transportation and energy systems," so the manufacturing facility would remain open - though workers could stay home if they wanted. However, the Alameda County Sheriff's Office (Tesla headquarters) determined that auto manufacturing is not an "essential business (like grocery stores, gas stations and health care)." **Tesla decided to comply - starting March 23, 2020.** Meanwhile, Musk also tweeted: "We will make ventilators if there is a shortage." *FiveThirtyEight* editor Nate Silver tweeted a reply: "there is a shortage right now." Musk responded back: "Ventilators are not difficult, but cannot be produced instantly. Which hospitals have these shortages?"

Electricity, Power and Efficiency

- The coronavirus outbreak has [warped power grid patterns](#) - **weekday demand resembles typical weekend days** as more people work remotely.

- The global cloud uses [more energy](#) than is produced by all the planet's wind and solar farms combined.

- Demand for [air conditioning](#) is increasing while demand for and energy consumption by space heating is declining.

- The typical US household uses about [.025 megawatt-hours](#) of electrical power per day.



A 3-inch C-hook could determine whether PG&E committed a crime. On Nov. 8, 2018, a decades-old 3" C-hook broke, which led to a high-voltage electric line to fall, which sparked the Camp Fire that killed 85 people. Was the state's largest utility, which has hundreds of thousands of C-hooks, "negligent" in inspecting and replacing these hooks, and will some of its former executives face criminal charges for their role in wildfires? (Wholesale price of one C-hook: 56¢.)

- Power demand in Italy has **fallen 18%** so far - AES expert Members say this data is a real-time indicator of electricity markets in the age of the coronavirus. (Insert: average daily total electricity load for Italy, a weekly comparison: **red** = height of coronavirus.)



Features

Thought-leadership Employment and Educational Opportunities

- Moon missions always lead to new e-tech ... [NASA is seeking new astronauts](#) (Artemis Generation Mission).
- [C180 is seeking 3 Senior Policy Fellows](#) to join DC team and work on regulatory policy.
- EDF Renewables is hiring a [Microgrid Engineering Manager](#) to work in San Diego.
- C3Energy in Redwood City, CA, is seeking a [Senior Manager of Business Development](#) for its Oil & Gas enterprise.
- [CEO wanted](#) - IITB-Monash Research Academy, in Mumbai, India.
- Boston University is seeking a [Director of the Sustainable Research Institute](#) (focus: energy and the environment).
- Fusion For Energy (F4E) in Barcelona is seeking a [Manager](#) to lead its Administration.
- SIP Specialty Oils and Fluids is hiring a Business Development Analyst. [Contact SIP](#).
- **Attention all students and recent grads** - [American Energy Society](#) has a number of open spring and summer internships available (honorariums offered).
- *Featured online course:* **Stanford University is offering "Understanding Energy" online this spring quarter** ("[CEE 207A: Understanding Energy](#)", March 30 - June 3).
- [EnerDynamics](#) offers a directory of 50 energy-related online courses.

- *Featured program:* **Solar Ready Vets Network is participating in the Hiring Our Heroes [Corporate Fellowship Program](#)**, which connects businesses with transitioning service members - businesses gain access to a recruiting pipeline of military talent.

Quotes: Buckle up, we are in for a wild ride.

"It was a stunning reversal for the largest oil producer, which two weeks ago pledged to 'lean in' to the market drop and maintain outlays in a belief oil demand would rise in the long run."
- Goldman Sachs analysts on Exxon responding with cuts and cutbacks.

"We're going to fill it right up to the top."
- President Trump on buying oil for the SPR that will replace the 45 million barrels of oil that was sold between 2017 through January 2020.

"A bailout tells the American public that fossil fuel investors can rely on U.S. taxpayers to cover their bills when the industry's corporate executives' risky investments don't pan out."
- Rep. Nanette Diaz Barragán (D-Calif.)

"It's Christmas every day right now for supertanker owners."
- Peter Sand, chief shipping analyst at Bimco, an industry trade body.

"Pull one string here, and it affects everything With the oil economy, COVID-19, and climate change -- it's all so interrelated that you really quickly have all sorts of complex interactions."
- Christopher Jones, a University of California at Berkeley climate policy expert.

One final thought ...

Remain vigilant for yourself and others around you. Support your neighbors and help those in need when and where you can. And remember, ***this too shall pass.***