

Energy Matters

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ENERGY
SOCIETY

News from the Society

AES has (soft) launched its [new website!](#)
Poke around, try a few featured resources, and please provide [feedback](#).

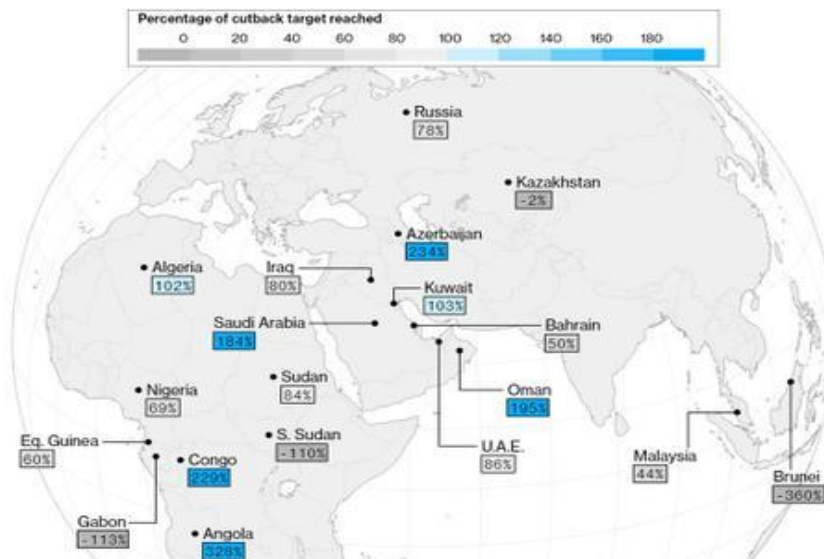
- [Silicon Valley energy ecosystem map](#)
- [SISE](#) - The summer's featured event on sustainable infrastructure
- [Energy CourseHunter](#) for up-skilling
- *Energy Today*: [Historic Energy Pivots](#)



Fossil Fuels

Oil: [Special report](#) - OPEC+ may have reset the terms of its production agreement, but not all countries are participating. A country comparison:

- **Positive numbers over 100** indicate full conformity with pledged cuts.
- **Positive numbers below 100** indicate cuts, but less than pledged.
- **Negative numbers** show production actually increased.



Coal: US coal consumption is at a low point - coal provided 36% less electricity in the first weeks of April compared to one year ago.

Natural Gas: [Spotlight](#) - India:

- The 2nd fastest growing market for natural gas is India.
- India's domestic production of natural gas comes primarily from offshore Mumbai, but production is declining (*insert*).
- India is the fourth-largest importer of liquefied natural gas (LNG) in the world; none via pipelines - all imported by ship.
- India completed construction of its 6th import terminal and has 4 under construction.
- The [4 countries](#) that export the most natural gas to India: US, Qatar, Russia and Australia.

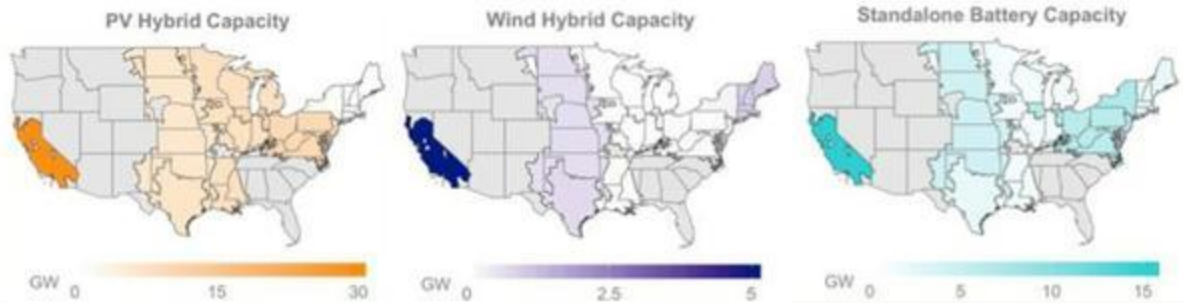


Carbon Capture: [Soil might be the most effective method of capturing carbon.](#) Soils hold three times more carbon than either plants, animals, or the atmosphere; and, soil can store carbon for longer periods of time if it is "healthy" (cover crops, reduced tillage, diverse crop rotation, etc.).



Low-Carbon Energy

- *Special report:* **About 1/4th of all proposed renewable energy projects in the US are combined with batteries** (aka, a "hybrid" power system); in California, 2/3 of all proposed projects are hybrids. (*Insert:* proposed hybrid projects, by region: **left** = solar + storage; **center** = wind + storage; **right** = stand-alone storage).



- *Special report:* The COVID-19 virus is making it very difficult for nuclear power plants to refuel and complete other services. **Some are installing 3D-printers inside reactors to help with refueling, safety maintenance, and repairs.** For example, Westinghouse successfully built and installed a 3D-printed thimble plugging device into [Unit 1 of Exelon's Byron Nuclear Generating Station](#) in Illinois during the plant's planned refueling phase.

- It takes about 3.5 years for a solar panel to [pay back](#) the energy used to build it.

- [Biofuel](#): On the one hand ... last year, the US exported 96,000 barrels per day (b/d) of fuel ethanol, the first annual drop in US ethanol exports since 2015. On the other hand ... last year, total fuel ethanol exports were the second-highest level on record. (Note: the US exports more fuel ethanol than it imports, its 10th year in a row as a net exporter.)

- **More than 600,000 clean energy workers in the US have [lost their jobs](#)** (most in energy efficiency sectors), and that number is expected to grow to 800,000.

- In 1887, Charles Brush built **the first electricity-generating wind turbine** in Cleveland, Ohio.

Policy

- *Beltway Buzz*: The US Federal Reserve is preparing a "**coronavirus [bond buyback program](#)**" as a way to **provide stimulus money for the fossil fuel sectors and utilities**. Separately, the coal industry has requested \$800 million in relief from taxes, royalty payments, and mine site restoration fees. Many wonder if an [RFS](#) mandate will be included.
 - Related, petroleum industry groups filed a complaint with the US EPA that the new Agency mandate *went too far* when it allowed gasoline made with 15% ethanol to be sold throughout the year; and, at the same time, agricultural groups countered with a separate complaint to the US EPA that the new mandate *did not go far enough* and should have allowed fuels with even more ethanol. Both complaints will end up in separate courts.
 - *Special report*: **The IRS Inspector General is reviewing the "carbon capture sequestration and storage" 45Q tax credit program**, in particular the monitoring, reporting, and verification (MRV) of secure geologic storage claims for 45Q tax credits. Meanwhile, the IRS is considering a [revision and proposed rule change to 45Q](#).
 - The US government has responded to the economic slowdown caused by the coronavirus by distributing stimulus money to individuals and companies (thru paycheck protection programs); China, on the other hand, is distributing money through work programs like infrastructure investments and construction. For example, **China's National Development and Reform Commission will spend about [\\$1.5 billion](#) to install 200,000 EV chargers throughout the country, 20,000 of which will be public chargers**.
 - *Market Buzz*: The US Department of Energy will be taking nominations from "small to midsize U.S. oil producers" who will lease oil to the Strategic Petroleum Reserve, with delivery in July. The deadline for offers is May 27.
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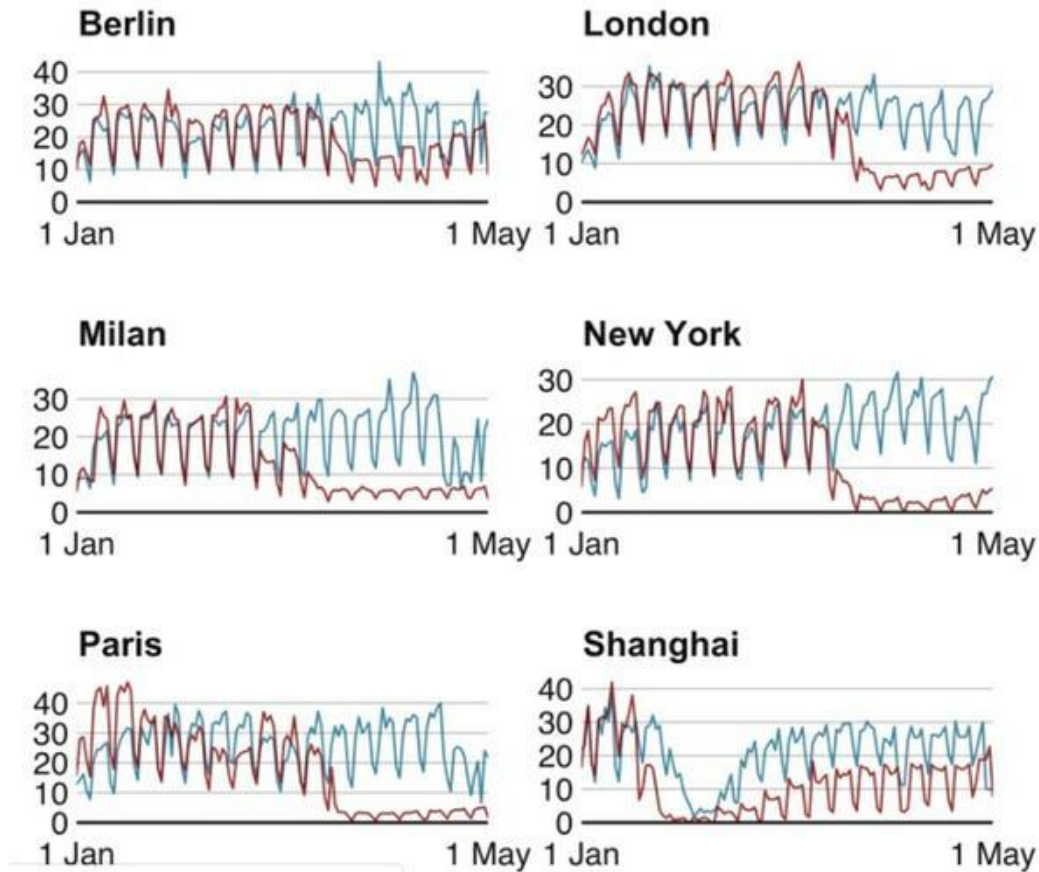
Climate and Sustainability

- **The daily atmospheric CO2 count from the Mauna Loa station, in Hawaii, has been [going up](#) at a faster rate than usual** (due to wildfires in California, Australia, and the Amazon; more coal stations in China; European motorists buying bigger cars, etc). On April 18, CO2 reached 416.76 parts per million, 3.13 ppm higher than its previous record set last year. (*Note*: in May the readings usually begin to drop as plants and trees in the northern hemisphere remove carbon from the atmosphere in their spring spurt of growth, but rise again in the autumn.)
 - Alaska is the fastest-warming state in the country, but Rhode Island is the first state in the Lower 48 whose average temperature rise has eclipsed 2 degrees Celsius. Other parts of the Northeast — New Jersey, Connecticut, Maine, and Massachusetts — trail close behind. **In the US, the Northeast is warming the [fastest](#)**.
 - About [1/4th of emitted CO2](#) comes from the supply chain that supports international trade.
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Research to Markets

Spotlight: Transportation in 2020

- New [traffic flows](#) in select cities, from Jan 1 through May 1 (red = 2020; blue = 2019):



- However, since May 1, automobile traffic is beginning to [increase](#):

- China: Traffic in Beijing, Shanghai, and Guangzhou is higher than 2019 averages while subway use is well below normal (subway use is down 53% in Beijing, down 29% in Shanghai, and down 39% in Guangzhou).
- Germany: In Berlin, public transit use remains down 61% while the number of people driving has recovered to 28% below normal.
- Spain: In Madrid, driving is 68% lower than usual; use of public transport is down 87%.
- Canada: In Ottawa, driving has recovered to 40% of normal levels, while mass transit remains flat at 80% below normal levels.

- Since May 1, gasoline consumption in the US has been [increasing](#) about 400,000 barrels a day. **The state with the fastest growing consumption rate for gasoline? Florida, at +30%.**

- Related, **Paris vs. New York City, a [comparison](#) of emissions reductions in 2020**: Paris saw a CO2 drop of 72% (+/-15%) in the month of March compared to normal; New York City in the same period saw CO2 fall of around 10%.

Electricity, Power and Efficiency

- **The US Department of Commerce is conducting an [investigation](#) of imported electrical transformer components.** The affected components are laminated steel used to make cores, wound cores, and transformer regulators. If the Commerce department places a tariff on these electricity components, it will add about 25% to the total cost.
 - *Grid Buzz:* **New Jersey, Maryland, and Illinois might [pull out](#) of the PJM capacity market.**
 - **The world will use 6% [less](#) electricity this year - about the entire demand of India.**
 - The second highest recorded drop of emissions took place during World War II, and the current record during the financial crisis of 2008. **2020 is on pace to break the record.**
 - The Mexican ISO (CENACE, or Centro Nacional de Control de Energía) has **suspended testing of all wind and solar power plants**, ostensibly to preserve the safety and reliability of the grid during the low-demand period caused by the COVID-19 pandemic; further, power plants must be registered as "must-run" units in order to operate. AES experts note that there are [significant flaws](#) in CENACE's resolutions.
 - **The battle to dominate the 5G market is now centered on [cesium \(Cs\)](#),** one of the rarest and most active metals on Earth ... and a vital ingredient for 5G. The US has none. The White House is trying to renegotiate trade agreements for cesium with China. In the meantime, Power Metals in Canada is one of only three cesium mining companies in the world, and it owns three of the five cesium deposits in Ontario - the only cesium mines that China doesn't control.
 - [Cybersecurity](#): **Last year, about half of all US utilities endured a successful cyberattack.**
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Quotes

"When we move to another form of energy, that's fine by me, I support that. But in the meantime, you cannot put the black farmers on hold until that day comes."

- Rev. Jesse Jackson on his support of natural gas and the complex tug of war between energy affordability and tackling climate change.

"Could this be peak oil? Possibly. I would not write that off."

- BP CEO Bernard Looney.

"We would like to see the President and Congress step up to help the renewable sector, to help the clean-energy sector, and address these job losses."

- Gregory Wetstone, the president and CEO of ACORE, on the proposed HEROES Act.