ENERGY MATTERS

Soundbite summaries of the energy news you need to know

AN OFFICIAL PUBLICATION OF | AMERICAN ENERGY SOCIETY

February 8, 2021

News from the Society

In case you missed it...
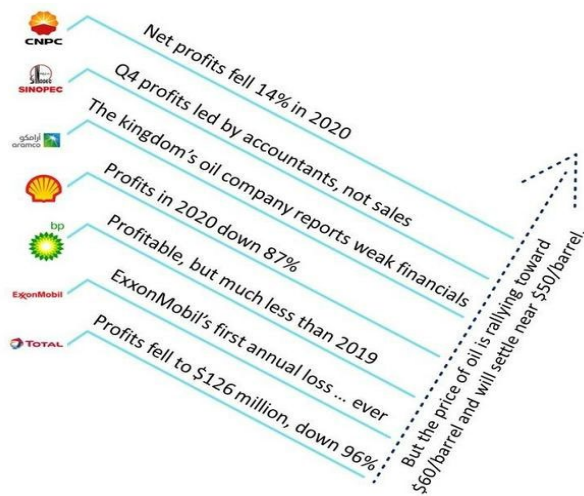
- Become a Member - join AES for $129/year; or, Friends are *free*. Members have access to a suite of publications and services, such as "*Top Energy Stories 2020*" in the archives.
- **Contact us** about organizational membership discounts.

Fossil Fuels

- Oil, *AES featured insight* -

A survey of the bear / bull financial state of the 7 largest oil companies in the world:

- CNPC — Net profits fell 14% in 2020
- SINOPEC — Q4 profits led by accountants, not sales
- aramco — The kingdom's oil company reports weak financials
- Shell — Profits in 2020 down 87%
- bp — Profitable, but much less than 2019
- ExxonMobil — ExxonMobil's first annual loss ... ever
- TOTAL — Profits fell to $126 million, down 96%
- But the price of oil is rallying toward $60/barrel and will settle near $50/barrel.
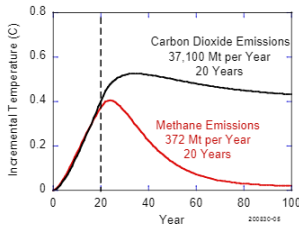
- Natural Gas, *AES featured insight* –

Figure 14. Increase of global average surface temperature resulting from 20 years of global anthropogenic emissions of methane at the rate of 372 Mt per year (red); carbon dioxide at the rate of 37,100 Mt per year (black).

Methane vs. CO2: Carbon dioxide (CO2) and its equivalents are the most common way the energy sector talks about, focuses on, and measures greenhouse gas emissions. However, it might be **more effective to focus on methane emissions rather than CO2** as a more meaningful mitigation strategy. It is 84 times more potent than CO2 in the first two decades after release and is perhaps easier to manage considering that most fossil methane emissions come from leaks during production, transportation, and distribution. Finally, the industry has economic incentive and access to cutting-edge technologies to detect and mitigate leaks. AES offers access to new peer-reviewed research on the importance and benefits of focusing on methane emissions; pay particularly close attention to figure 14 on page 22 (*insert*). AES editors also recommend a **survey** of recent advancements in leak detection technologies by the NGI at Stanford University.

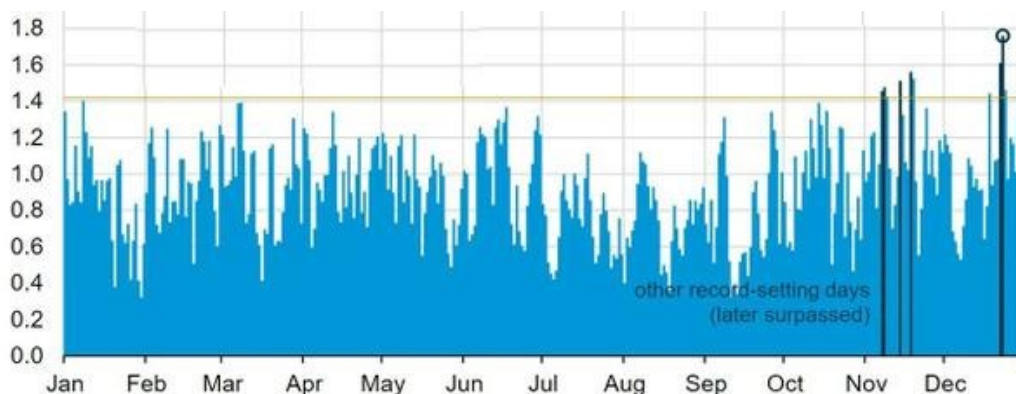Thank you Kairos Aerospace for the suggestion.

- Coal and Mining -

- In the US, coal will gradually disappear from the US power grid by 2033. However, expect a **global bull market**, **driven by rising demand.**

- Carbon Capture -

- On February 1, **China implemented a new carbon emissions trading system (ETS)**. About 2,225 power companies can trade their CO2 emission quotas via the system; firms that exceed their caps can purchase unused quotas from those with low emissions. The benchmark is 0.877 mt of CO2/mWH for larger coal plants, and 0.979 mt of CO2/mWH for smaller coal plants (and 0.392 mt of CO2/mWH for gas-fired power plants). If the trading system works, the ETS will expand to include more industries.

Low-Carbon Energy

- **December 23, 2020 - wind energy produced a record amount of electricity** (1.76 MWh) for the US grid; the previous record was set on April 10, 2019 (1.42 MWh). *Insert*: daily electricity generation from wind, lower 48 states, in million megawatthours (MWh).

- **Waste-to-energy (WTE) spotlight:** Four technologies convert waste biomass into energy: 1) thermal; 2) mechanical; 3) thermo-chemical; and, 4) biochemical. The best WTE technology is determined in large part by the waste feedstock, such as: total volume, moisture content, chemical makeup, transportation costs, etc.
  - **United States:** Direct incineration (the oldest method of WTE) generates about 0.4% of US electricity, and only one new incinerator has been built in the US in the last 25 years.
  - **Japan** leads the world in total number of WTE facilities (1,200 total); China has the second most with more than 300 facilities; the US has about 100 facilities.
  - **Sweden** is the WTE thought-leader and imports waste from neighboring countries to generate heat and electricity. (*Note*: the price of WTE in Sweden is lower than the cost to utilize landfills.)

- *AES Editors Insight*: **perhaps the best [social media ad campaign](#) ... ever.** "Norway is crushing us at EVs ... we're coming for you Norway!" - Will Ferrell

- **More than 175 solar companies (such as Tesla, SunPower, and SunRun) promised to not use products linked to the [forced labor of Uighur Muslims](#)** at solar panel manufacturing plants in **western China.**

- **Bizimungu Claver, a Rwandan with no formal education, invented a [hydropower](#) plant with the capacity to generate 15 kilowatts**; he is now powering his entire village in Muhanga.
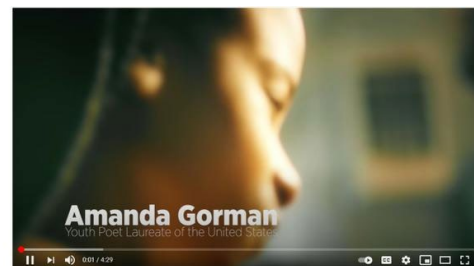
Policy

- **President Biden's mammoth executive order on climate policy** - more than 7,500 words - has one overriding theme: *catch up fast*. AES Members have access to the Executive Order.

- The first-ever auction for oil and gas leases in the Arctic National Wildlife Refuge (ANWR) ended with only **three bidders winning drilling rights to more than half a million acres**. The auction, hosted three days before the end of the Trump administration, raised only $14.4 million in revenue; most tracts went for the minimum price of $25 an acre (see column 7 in the link.) Environmental groups asked for permission to bid, but federal rules excluded them.

- **The Interior Department for the Biden administration revoked 70 "invalid" drilling permits for onshore oil wells** and told the companies that they must seek new approvals.

- Toyota, Fiat Chrysler, and several other big automakers announced they will **no longer try to block California from setting its own strict fuel-economy standards**, signaling an even greater industry shift toward electric vehicles.

- The forthcoming issue of *Energy Today* will feature the top-3 energy-related legal cases heard by the **US Supreme Court.**

- Beltway Buzz -

- **US Senate Committees approved the nomination of President Biden's federal agency nominations**, including former Michigan Governor Jennifer Granholm as head of the Energy Department; it is very likely that all nominations will be approved by the full Senate. Of all the nominees under consideration, it appears that Michael Regan, who will head the EPA, received the most support from Republicans.

- **The Biden administration will restart permitting offshore wind farms, beginning with the 800 MW Vineyard Wind project.**

- Vermont Senator Bernie Sanders (I) and Democratic Representatives Earl Blumenauer (Ore) and Alexandria Ocasio-Cortez (NY) introduced **legislation that will require the president to declare a national climate emergency under the National Emergencies Act of 1976.** *It will probably not receive Congressional approval.*

- **Vice President Kamala Harris conducted an interview on local West Virginia TV** aimed at pressuring Joe Manchin to vote with the Democratic Party; the effort was "as effective as a lead balloon."

Climate and Sustainability

- Amanda Gorman delivered "The Hill We Climb" for President Biden's online inauguration day audience. It was the first time most people had heard the US youth poet laureate; however, **Gorman's first large public event was in 2018 when she read "Earthrise,"** a four-minute poem about the climate.

Amanda Gorman
Youth Poet Laureate of the United States

- **The method used by cities to measure their greenhouse gases tends to undercount — and not just by a little — total emissions.** The average amount is nearly 20% more than the reported total. AES Members have access to the peer-reviewed research.

- Today, **the US protects 12% of its land and 26% of its oceans.** (*Note*: President Biden said he wants to triple the total amount of protected land and oceans.)

- New **wildfires are burning outside Perth, Australia.**

- **Finland's Arctic Lapland region is bidding to host the 2032** *Summer* **Olympics.** (*Insert*: Santa's Village in Lapland)
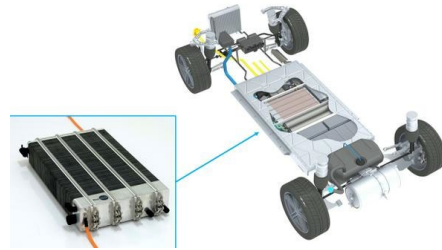

Research and Markets

- Contribute to the global electrification of everything - the EoT revolution. **Send old broken phones, laptops, tablets, power tools (and anything else with a Li-ion battery) to Redwood Materials**, a new Li-ion battery recycling company in Nevada, and they will re-use them to make batteries for new electric vehicles. The mailing address is:

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FROM:

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- California's Karma Automotive and Denmark-based Blue World Technologies are **testing an onboard hydrogen fuel-cell system as a way to provide power for passenger and light commercial vehicles.**

- **NevHouse takes recycled plastic waste and turns it into low-cost houses.** *Insert*: a NevHouse studio home.

- **Elon Musk is offering a $100 million award for the best carbon capture technology, a competition hosted by Xprize.**

- GoogleMaps has developed a routing algorithm that uses a type of math called "graph theory" to present **charging stop directions for EV owners** based on their location, the amount of range left in their vehicle, and the type of plug their vehicle uses.

- *Contract opportunities*:
  - **The USAID is seeking input about Investments in Developing Energy Assets.**
  - Prospective organizations and individuals are invited to submit proposals for conducting a program on **"Financial Modeling for the Natural Gas Sector" for the Ministry of Energy of Tanzania.** Proposals are due by March 4; please email your proposal in PDF form to Ms. Marjorie Jean-Pierre, Program Director.

Electricity, Power and Efficiency

- **There were a number of significant electrical outages around the world in January 2021:**

  - Japan struggled with surging electricity prices and intermittent power outages.
  - On January 8, Europe's grid came close to a massive blackout (*insert*).
  - Major cities throughout Iran had week-long rolling outages; the government blamed the 1,600 bitcoin centers for "excess energy use."

- *RFP*: Prospective organizations, including consultants, traders, power exchanges, training institutes, and individuals are invited to submit proposals for developing and delivering a comprehensive training program for the **creation and operation of a power exchange for South Asian energy markets.** Please submit all proposals with an email-read receipt to Ms. Sarah Blanford (Deputy Program Director) by February 24, 2021.

- **US electricity use, which declined during the COVID-19 pandemic, will probably return to 2019 levels in 2022.**

- Cybersecurity Spotlight -

- **On average, every business has a ransomware attack directed at it every 11 seconds. That's more frequent than 2019, when it was every 14 seconds.**

New feature!
Member Bulletin Board

This new feature allows Members to reach 135,000+ readers ... for free! **Contact us** for more information.

- Now: Bracewell podcast - Clean Energy Transition series, available on Spotify, Apple Podcasts, SoundCloud, and Stitcher.
- February 10, 12:00 EST: OurEnergyPolicy webinar, Principles for Sound Energy Policy.
- February 17: Bloomberg NEF releases the 2021 Energy Factbook.
- February 18 - 19, Green School Summit, hosted by the Clean Coalition.
- February 25: The deadline for the C3E Award nominations.
- March 11 deadline: The Colorado Cleantech Industries Association (CCIA) is hosting the Mining Cleantech Challenge, to be held April 22.
- March 12 - 12: The MIT Energy Conference - Charging Ahead to a Cleaner Future.
- The Center for Midstream Management and Science at Lamar University has named Senator Robert Nichols a "Profiles in Midstream" honoree.
- Denmark is building a wind energy hub as an artificial island in the North Sea.
- TGP just selected its newest cohort of 15 ambassadors.

Quotes: *"It's not a total loss"*

"Although better known for their oil fields, refineries and filling stations, Shell, Total and BP run huge in-house oil trading businesses that can handle more than 25 million barrels a day of crude and products." - Bloomberg

"Sales are down, but consumers seem to prefer electric vehicles ... they are sending a strong message.'" - Press release by G.M.
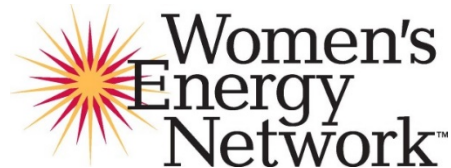
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