

ENERGY MATTERS

The trusted source for objective sound-bite summaries of the energy news you need to know

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— HEADLINE NEWS —

Conventional

Petroleum

- Norway's Government Pension Fund is **the world's largest sovereign fund (\$1 trillion USD)**. The Fund announced it will [sell its oil and gas stocks](#) (\$35 billion worth of shares). Shares to sell include: supermajors (from BP to Chevron); independents (including EOG Resources and Occidental Petroleum); oilfield services (like Schlumberger); and state-owned entities (Petrobras, Gazprom, PetroChina)

Gas

- Rank of [flaring performance](#) (worst to best, by company, as a percent of total production - Permian, 2015):

1. COG Operating (9%)
2. Energen Resources (8%)
3. XTO Energy and Apache (tie, 7%)
4. Cimarex Energy (6%)
5. Chevron and EOG Resources (tie 4%)
6. Occidental Resources USA (3%)
7. Devon (2%)
8. Pioneer and Kinder Morgan (tie 1%)

Coal

- Five of America's [largest coal producers](#) (Alliance Resource Partners, Arch Coal, Cloud Peak Energy, Peabody Energy Corp. and Warrior Met Coal) reported a combined \$801 million in third-quarter earnings. **That is up from \$454 million from the year-ago period.**

Nuclear

- The US NRC (Nuclear Regulatory Commission) is preparing **new safety rules for Small Modular Nuclear Reactors (SMRs)**. If approved, these rules will speed up the permitting process and fast-track the development of SMRs. [NuScale Power](#) has already submitted designs under these new rules. AES Members have access to the proposed [NRC rules](#).

Renewables

- There is growing evidence that some closed and inactive "legacy" mine sites could be **converted into active and productive renewable energy assets (particularly, solar or storage)**. AES Members have access to the "legacy mine site" [study](#).

- Pentagon officials have told the White House that the solar tariff under consideration would significantly raise the cost of solar energy, **jeopardize the financial viability of solar projects at US military bases across the globe**, and [threaten long-term security interests](#).

- Renewable Portfolio Standards ("RPS") are policies that require utilities to use a minimum portion of renewable electricity. RPS are in place in 29 states and Washington, DC. These **RPS policies have been a key driver for the [renewable energy boom](#) in the US over the last several years** -- roughly 60% of new US renewable generation capacity since 2000 was driven by these policies. However, many RPS policies will be removed if the Congressional tax plan passes. [Bloomberg](#) analysts believe the proposed tax plan would slash US wind development in half, from 38 gigawatts of new wind power through 2020 to only 19 gigawatts. Similarly, [Goldman Sachs](#) analysts found that the market also would be reduced by about half under the proposed House tax plan.

- Carbon dioxide removal (also known as "[negative emissions](#)") is potentially a trillion-dollar enterprise because it **offers a way to literally reverse the rise of CO2**. Carbon-removal facilities subtract carbon from the air and

could be built anywhere, or everywhere. Carbon Engineering (Bill Gates is an investor) is one of a half-dozen companies vying to prove that the technology is feasible. Others include Global Thermostat (in New York) and Climeworks (near Zurich). Most of these ventures can trace their intellectual origins to Klaus Lackner, a physicist now at Arizona State University.

- **18.9 percent of [corn ethanol workers](#) are veterans**, significantly higher than the 7% average veterans' employment rate for all other sectors.

Policy

- Both sides are claiming victory, but **the 3-2 vote by the Nebraska Public Service Commission in favor of the Keystone XL Pipeline [decided nothing](#)** - the pipeline can move forward, but only if it is built along a new path, forcing the project developer to apply for a new set of regulatory permits.

- The EPA is adopting a **new and substantially lower metric for the "social cost of carbon."** AES members have access to the [new "carbon" metric](#) published in the Federal Registry.

- German Chancellor Merckel's "Energiewende" (a set of policies designed to transition the country entirely to renewable energy) is in trouble. **The entire town of [Immerath](#) in western Germany has been demolished** - the hospital, most of the houses, forests, the cemetery, and a Roman ruin - in order to create a large coal mine.

- *Energy Matters* typically does not report on Congressional bills that have not become law; however, there are two **energy-related research funding bills currently under consideration by the full House Science Committee**: [H.R. 4376](#) (which would fund upgrades for DOE research facilities) and [H.R. 4378](#) (which funds nuclear energy research infrastructure).

- "**zombie arguments**" (def.) adj: an "Inside the US Beltway" term used to identify [climate arguments that have not evolved](#) or been updated since the 1990s or 2000s.

- **The US is [not allowed to formally withdraw](#) from the Paris Climate Accord until November 5, 2020, which happens to be the date of the next presidential election.**

- **Lamar Smith has announced that he will [retire](#) when his term ends next year.** The Texas representative and chairman of the US House of Representatives' Committee on Science, Space and Technology is the strongest [opponent](#) of climate change in both chambers.

Climate

- Of the 1,542 crude oil pipeline spills that have been reported to the federal government since 2010, **the recent Keystone XL spill of 210,000 gallons (5,000 barrels) in South Dakota ranks as the [13th worst spill](#)**. The worst in history was the Exxon Valdez spill - 11,000,000 gallons.

- **[Smog in New Delhi](#) is 10 times worse than what is considered "safe."** Recently, thousands of schools were closed, and United Airlines halted flights until the air quality improved.

- **[Biophilic Design](#)** [bahy-oh-fil-ik] noun, *def.*: An architectural style that incorporates trees, plants and water features into the structure and organization of office buildings to draw on an innate psychological desire to be connected to the natural world.

- In an open letter to humanity, about **15,000 scientists from 184 nations have asked people to "maybe stop destroying the planet."** It is a follow-up letter to a similar notice issued in 1992. AES Members have access to the [original 1992 letter](#) and the [recent follow-up](#).

- **A BP-sponsored study found that since 2005 annual US carbon dioxide emissions have declined 758 million metric tons** - the largest decrease in any country in the world, and nearly as large as the 770 million metric ton decline for the European Union. Over the same period, China's carbon dioxide emissions grew by 3 billion metric tons, and India's grew by 1 billion. (Note: *The Washington Post* fact-checked this BP-funded report, and gave it a "3 Pinocchio" rating; meaning, they labeled it "fake-news." However, *The Post* evaluated the report

using a per capita emissions-reductions basis, while the BP report measured aggregate totals. Based on BP's stated criteria, it appears the claims in their report are largely true.) AES Members have access to the BP [report](#).

- Sectors that could make an immediate and **significant reduction of [greenhouse gases](#)**:

1. Agriculture (reducing nitrogen in fertilizers and cutting pesticide use)
2. Utility/Power
3. Transportation
4. Industry/Manufacturing

Electricity and Efficiency, Utilities and Power

- **US states with the most [progressive electric grid-modernization policies](#)**: For the second consecutive year, California ranks first (placing first in three categories -- state support, customer engagement, and grid operations); Illinois is in second-place; Texas ranks third; Maryland and Oregon rank fourth and fifth respectively. Rounding out the top ten are Arizona, Washington, DC, New York, Nevada, and Delaware.

- Following Hurricane Irma, nearly two-thirds of utility customers on the island of St. Thomas in the US Virgin Islands are still [without power](#), while more than 87 percent of customers on the island of St. Croix and 70 percent on St. John also have no power. However, **the [microgrid that powers Necker Island was fully operational one day after the hurricane](#)** - the Necker Island grid is capable of generating 300 kilowatts though solar power as well as a 900-kilowatt wind turbine and a 500-kilowatt-hour battery. The Dutch island of St. Eustatius, also called Statia, has a similar renewable energy-based microgrid that was fully operational one day after the storm.

- **Puerto Rico's leaders are ready to [upgrade its utility system](#), but they must wait for the lights to come back on before they can begin work.** Related, before the Whitefish \$300 million contract to rebuild the island's utility grid could be cancelled (the Montana company is now being investigated by the FBI), the contractors hired by Whitefish were able to repair just one high-voltage transmission electrical line - and that line has failed. Again.

- **General trends for electricity demand**, a summary of the [IEA World Energy Outlook, 2017](#) (note: the IEA World Energy Outlook report is more than 700 pages long):

- Global energy demand continues to increase (projected to be 30% higher in 2040 than it is today - the equivalent of adding another China or India to today's electricity demand).
- Coal's boom years are over - in the previous 17 years, coal-fired capacity increased 900GW; in the next 17 years it will grow 400GW.
- China is becoming the leader in energy efficiency; its energy demand will increase by only 1% between now and 2040 even though population and the economy will continue to grow substantially.

Research to Tech-to-Market

- **"Carbon IRA" is a new investment product** - savings that result from consumer behaviors and purchases which lower an individual's carbon footprint are monetized by converting the avoided carbon (or equivalent) into dollars which are then deposited into a retirement account.

- GE equipment accounts for about one-third of power generated worldwide. But **[GE share prices are falling](#)**. In addition to a slowdown in gas turbine sales, the business is also experiencing tighter margins. However, GE's renewables revenues recently rose to \$7.41 billion, a 13% year-over-year increase. Meanwhile, it looks like the 4-month marriage between GE and Baker Hughes may end in [divorce](#).

- Blockchain Start-up Ecosystem (a virtual program with headquarters in New York City) has launched **a digital start-up accelerator for new blockchain ventures related to energy**. The [application](#) deadline is December 2, 2017. (Note: AES Members have access to a new Blockchain [primer](#).)

- **The Business Intelligence Group is now [accepting nominees](#) for the 2018 BIG Innovation Award.**

- Two RFPs have been announced:

- A request for consulting services to conduct a [renewable integration gap analyses](#) for Kenya's power system, through funding provided by the US Agency for International Development (USAID) Power Africa Transaction and Reforms Program (PATRP).
- A request for the [development of a program](#) on "Leadership Training" for the Ethiopian Electric Utility (EEU), an activity implemented by USEA under the United States Agency for International Development (USAID) Power Africa Initiative.

— FEATURES —

Spotlight

The AES would like to thank all who participated at the Digital Oilfield conference at Minute Maid Ballpark, including but not limited to: **Scott DeMarais** of McKinsey, **Vivek Chidambaram** of [Accenture Strategy](#), and **Nate Clark** (and help from Jim Harris) of [PwC](#) for moderating the three featured panels; also, thanks to panel participants **Bill Johnson** (DCP), **Paul Miller** ([Oracle](#)), **Binu Mathew** ([BHGE](#)), **Michael Donohue** ([Uptake](#)), **Trond Ellefsen** ([Invatate AI](#)), **David Drescher** ([Mission Secure](#)), **Maynard Holt** ([Tudor, Pickering & Holt](#)), **Chad Sweet** (Chertoff Group), **Apurva Mohan** ([Schlumberger](#)), **Allison Lami Sawyer** (Rebellion Photonics); **Ben Wilson** of **Google Energy** was fantastic moderating the Pitch-Fest, and thanks especially to [Jim Claunch](#) of Statoil and **Jon Krome** of BHP Billiton. Also, special thanks to the keynote speakers, [Commander Kirk Lippold](#) and [Mark Mills](#), and to the [Women's Energy Network](#) for sponsoring the post-event cocktail hour. And of course, **Nikoleta Sremac** for [Meghan O'Sullivan](#), AES Energy Writer of the Year, 2017.

Please [contact us](#) if you are interested in our upcoming event in Los Angeles: The Cleantech Prometheus.

What You May Have Missed

- **The American Energy Society named Meghan O'Sullivan the "Energy Writer of the Year, 2017."**
Dr. O'Sullivan is the Jeane Kirkpatrick Professor of the Practice of International Affairs at Harvard's Kennedy School and Director of the Belfer Center's Geopolitics of Energy Project. She received the prestigious award for her recently published book [Windfall: How the New Energy Abundance Upends Global Politics](#) and Strengthens America's Power, and for her *New York Times* commentary "[How Trump Can Harness the U.S. Energy Boom.](#)"

Quotes - From A to Z(inke)

"Maybe it's time to redesign the flag since it has gone largely unchanged for a century."
- Department of Interior Secretary Ryan Zinke on redesigning the Interior Department's office flag

"You can't make this stuff up."
- An anonymous email message sent by a Department of Interior employee to several colleagues after seeing Secretary Ryan Zinke's new office, which has a stuffed bobcat and the heads of a bison and an elk mounted on the wall, as well as an animal-skin couch that was dropped off by a white glove delivery service. Secretary Zinke [Tweeted](#) some images of his new office.

"Whose got 2 thumbs & is excited for #RockYourMocs Day? This guy!"
- A [Tweet](#) by Secretary Zinke. "Rock Your Mocs" is a week-long celebration during Native American Heritage Month that encourages indigenous peoples to stand together in celebration of both tribal individuality and the rich history of all indigenous people across the world.

"Aaaaah.... No comment."
- Gavin Clarkson, when asked why he [resigned](#) as a senior official to the Bureau of Indian Affairs soon after his appointment. Interior Secretary Ryan Zinke had appointed Clarkson to the position at about the same time that the Inspector General of the same Department had issued a scathing report on Clarkson's loan program.