



ENERGY MATTERS

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Volume 11(3); June 13, 2017

— HEADLINE NEWS —

Conventional

Petroleum

- **OPEC's oil production has [increased](#) to 32.12 million barrels per day.** Despite compliance from the cartel's biggest producer and de facto leader Saudi Arabia, output jumped from exempt OPEC members Libya and Nigeria, and Iraq. Meanwhile, OPEC confronts a brewing political crisis as two key members have broken diplomatic ties with Qatar.

- **[Argentina has shale formations](#) that contain significantly more oil and gas resources than previously assumed** - approximately 27 billion barrels oil and 802 Tcf of gas, respectively. Billions of investment dollars are pouring into the country's energy sector from Shell, Chevron, Total, BP, and Dow; however, the full realization of Argentina's massive shale oil and gas endowment may require more than \$200 billion of investment.

Gas

- Prior to 2016, there was only one LNG export facility operating in the US (in Kenai, Alaska). In 2016, that total doubled with the opening of the Sabine Pass natural gas liquefaction terminal in Sabine, Louisiana. **Right now, there are [six LNG export facilities under construction](#)** - in Georgia, Louisiana, Texas, and Maryland. An additional four facilities have been approved by the Federal Energy Regulatory Commission but are not yet under construction, and several more have been proposed. When all terminals are completed, exports of LNG from the US to overseas markets will increase significantly.

Coal

- **A [survey of the state of coal in Q1 2017](#):** US coal production is up 17% compared to Q1 2016; coal mining jobs are down 8% (vs. Q1 2016); and, the following coal plants have announced closure (capacity in MW):

- Stuart Generating Station in Ohio (2441)
- Navajo Generating Station in Arizona (2250)
- San Juan Generating Station in New Mexico (1800)
- St. Johns River Power Park in Florida (1358)
- Killen Generating Station in Ohio (666)
- North Valmy Generating Station in Nevada (522)
- Elmer Smith Power Plant in Kentucky (285)
- Rocky Mount Electric Power Plant in North Carolina (115)

Nuclear

- **Toshiba is preparing a [bankruptcy](#) filing in Japan. This not good news for the US nuclear**

industry. Toshiba took on the guarantees from Westinghouse Electric after the latter declared bankruptcy before completing the construction of Georgia Power's Vogtle nuclear project in Georgia and the Summer nuclear project in South Carolina. Toshiba denies the bankruptcy reports. Meanwhile, the Congressional Research Service says that the Westinghouse bankruptcy filing puts all current US nuclear construction projects at risk; needless to say, the Toshiba filing would make matters worse. AES Members have access to the CRS [report](#).

Renewables

- The CleanTech Leadership Index has been released. Among other conclusions, **the states with the most clean energy jobs per capita are:** Vermont, Rhode Island, Utah, Michigan, Oregon, and Massachusetts. AES Members have access to the downloadable [report](#).
- Due to significant year-to-date precipitation and snowpack in the 3 west-coast states (California, Oregon, Washington), **hydroelectric generation is 30% above normal levels**, while natural gas demand will drop by about 15% from normal levels. About half of that impact will be in California.
- **The 5,000 shelters in the Azraq Syrian refugee camp in Jordan are powered by solar energy.**
- **The four biggest coal mining companies in the world and their use of renewable energy:**
 1. Rio Tinto uses the most renewable energy - 36% of the total energy it uses comes from renewable energy sources (mainly hydropower).
 2. Glencore (the top shipper of seaborne coal) gets 19% of its energy from renewable sources.
 3. Anglo American consistently sources about 12% of its energy from renewables.
 4. BHP Billiton - the world's largest mining company (by market capitalization and the biggest supplier of coking coal) uses very little renewable energy (less than 2 percent).
- Some AES experts believe that **inadequate transmission infrastructure poses a greater challenge for renewable energy** than President Trump's policy-shift.
- [Burbo Bank wind farm](#), off the northwest coast of England, has 32 total turbines; each turbine stands 195 meters tall and has 3 80-foot long blades. **It is the biggest farm with the largest individual turbines in commercial use in the world.**
- Meanwhile, it also appears that **the United Kingdom is the market leader in the hydrogen-based fuel cell sector.**

Policy

- For a thoughtful survey of analyses by Brookings Institute regarding **the Trump Administration's decision to exit the Paris Climate Accord**, please see [Energy Today](#), the official e-magazine of the American Energy Society.
- Beltway Buzz: The US Senate Environment Committee is expected to hold a **hearing on the Renewable Fuels Standard on June 15th.**
- Republican Senator Chuck Grassley from Iowa is **pushing back against an electric grid reliability study ordered by Energy Secretary Rick Perry**, expressing concern that the DoE has predetermined that wind energy is undermining the grid. (Note: In April, Perry sent a [memo](#) to his chief of staff ordering the DoE to study whether government support for wind energy and other renewable energy resources is threatening the reliability of the nation's power grid. AES Members have access to the [letter](#). Further, Iowa has the second-most installed wind energy capacity in the nation, and approximately 6,000 jobs in the state are supported by the wind energy industry.)

- **Legislators in five states - mainly clustered in New England - are [considering a carbon pricing scheme](#)**: Massachusetts, Rhode Island, Connecticut, Vermont and Washington.

- **An 8-state coalition submitted a list to Secretary Pruitt of the EPA of federal regulations passed by President Obama that are still in effect but should be repealed.** West Virginia was the author of the letter with signatures from attorneys general from Alabama, Arkansas, Indiana, Louisiana, Michigan, Oklahoma and South Carolina. AES Members have access to a true and correct copy of the letter and its [list](#) of recommended regulations to be repealed.

- Toward the end of former President Obama's administration, the DoE's Office of Energy Efficiency and Renewable Energy issued new energy conservation standards for [refrigeration products](#), dedicated [pool pumps](#), and residential central [air conditioners and heat pumps](#). **President Trump is going to support all three regulatory standards.** AES Members have access to all of the above three docket standards.

Climate

- **Featured announcement: SDSN has launched a new MOOC, "[Climate Action: Solutions for a Changing Planet](#)."** This is a 12-week online course that will start on June 19th.

- In 2008, a collection of nations cooperatively built the [Global Seed Vault](#) in northern Norway near the Arctic Circle, an impregnable deep-freeze intended to protect the world's most valuable seeds. But **the ice that provided the protective cover around the vault has melted**, and water is gushing through the entrance tunnel.

- **In search of a more conducive climate, [trees in North America are moving north and west](#).** About three-quarters of tree species common to eastern American forests—including white oaks, sugar maples, and American hollies—have shifted their population center northwest since 1980. For instance, the eastern white pine has moved more than 80 miles to the west, and the eastern cottonwood has moved 77 miles to the north. AES Members have access to the peer-reviewed article. (Note: researchers think that the changing climate explains only 20% of the movement.)

- **The US has been the staging ground for 654 climate-related lawsuits, almost three times that of the rest of the world combined.** Australia, with 80 cases, and the UK, with 49 cases, are the next largest national sources of climate litigation, although legal action is starting to emanate from all corners of the world - indeed, the issue of "climate refugees", where people have had to flee their country due to flood or drought, is gaining traction. AES Members have access to the [report](#).

- Countries in the "[bean belt](#)" — the latitudes between the tropics of Cancer and Capricorn where coffee thrives — are getting hotter and drier with climate change. **Coffee bean growing is beginning to suffer.**

- The Society for Environmental Journalism has launched a useful "[tip-sheet](#)" website that tracks **information about hurricanes** in real-time.

Electricity, Utilities and Power

- California Public Utilities Commission President Michael Picker called for the state's customers to **shut off electric appliances during the [August 21 solar eclipse](#)**, because otherwise the state's grid, which relies heavily on solar generation, could be thrown out of balance.

- **More than 30 states are currently implementing new grid modernization techniques.** The following are the top-5 most active states in Q1 2017:

1. New York
2. Hawaii
3. California
4. Massachusetts
5. Colorado

AES Members have access to the Grid Modernization [Report](#).

- **There was about 30 GW of [demand response flexibility](#) in 2015.** The bulk of that is industrial and commercial and about a third residential.

- **[The EU has passed strict regulations](#) on the amount of allowable toxic pollutants emitted by power plants:** 46% of sulfur dioxide, 18% of nitrogen oxide, 39% of mercury and 4% of dust.

- In Lagos, Nigeria - the capital city with a population of nearly 20 million - more than 75% of the people have access to electricity but **less than 20% have [reliable power](#).**

- PJM, the grid-operator in the Mid-Atlantic, has published an analysis of **the rise of natural gas and renewables and the decline of coal and nuclear**. A summary of the paper:

- Low-cost gas and renewables are driving other power-generating resources into premature “retirement” in the PJM area.
- The decline of coal and nuclear power has hurt reliability.
- By significantly increasing the use of natural gas (theoretically up to 86% of the portfolio), the PJM was able to resecure reliability.
- The significant increase in wind and solar added to the reliability risks.

AES Members have access to PJMs [report](#).

From Basic Research to Tech-to-Market

- When President Donald Trump explained his rationale for withdrawing from the Paris climate agreement, he **cited research from MIT that seemed to suggest the global emissions cuts agreed to under the deal wouldn't make a significant difference** in worldwide temperatures. AES Members have access to the peer-reviewed summary of the [original MIT research](#) that President Trump referenced.

- **Silicon Valley's funding of cleantech [doesn't appear to be reviving](#) anytime soon.** (Note: [Energy Today](#), published by AES, featured a story about patents in cleantech; the summary - recent innovation trends seem to favor the fossil fuels.)

- **NASA scientists detected a wave of melting ice and water traveling through a major glacier in Greenland** that was so big it warped the Earth — a surge equivalent in mass to 18,000 Empire State Buildings. The total amount of mass carried in the wave — in the form of either water, ice or some combination of both — was 1.67 billion tons per month, or 6.68 billion tons over four months. AES Members have access to the peer-reviewed [paper](#).

- **Featured opportunity:** The New York State Energy Research and Development Authority (NYSERDA) and the New York Power Authority (NYPA) have each issued **requests for proposals (RFPs) for New York State renewable energy projects:**

- The NYSERDA RFP is to [purchase](#) renewable energy credits (RECs) from renewable energy projects under contracts of up to 20 years. Project owners have until July 13 at 5 pm to submit initial applications to NYSERDA.
- The NYPA RFP is to [purchase](#) a combination of energy, capacity and RECs from renewable energy projects under contracts of up to 20 years. Project owners have until September 1, 2017 at 4 pm to submit proposals to NYPA.

— FEATURES —

Featured energy development - [Newlight Technologies](#)

Carbon capture appears to be the new "it" in energy, having captured the imagination of energy professionals everywhere, including the new [Secretary of Energy](#). Indeed, it was the subject of a recent [Congressional Briefing](#) hosted by the American Energy Society. And why not? Imagine the possibilities for converting greenhouse gases to a useful product or material.

However, carbon capture might not be all that new - plants have been doing it through photosynthesis for a long time. But in terms of commercial possibilities, the American Energy Society would like to recognize and applaud the work of [Newlight Technologies](#), in Los Angeles. Founded in 2003 and followed by 10 years of research and development, Newlight has found a way to commercialize a carbon capture technology that combines air with methane-based greenhouse gas emissions to produce a plastic material called AirCarbon - a material equivalent to oil-based plastics. This is a venture that everyone can get behind - right and left, fossils and renewables, as well as the American Energy Society.

Quotes

"As of today, the United States will cease all implementation of the non-binding Paris Accord and the draconian financial and economic burdens the agreement imposes on our country."

-- From President Donald Trump's Paris Climate Accord exit speech.

"Allow me to be blunt. The world is in a mess."

-- António Guterres, Secretary General of the United Nations, responding to the decision of the United States to exit the Paris Climate Accord.

"We are not going to submit (to the Paris Climate Accord) because voluntary responsibility is a path to failure."

-- Daniel Oquist, Nicaragua's representative at the Paris talks.

"This is not a tree-hugging group."

-- Harvard Business Review, on the CEOs who signed the [letter](#), "Dear Mr. President: We wish ... the US remained in the Paris Climate Agreement."

"*E pur si muove.*"

-- Galileo - "and yet it moves" (1633), after being forced to recant his claim that the Earth moves around the immovable Sun.

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