



## ENERGY MATTERS

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

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Energy Huntsville Initiative

## — HEADLINE NEWS —

### Conventional

#### Petroleum

- **Featured Story:** In 2010, each land-based oil rig in North America produced on average about 100 barrels per day. Today that figure is closer to 1,000 bpd. Put another way, '[oil rig productivity](#)' – the amount of new oil that an average rig can produce in one month – has **increased 10-fold in the last 6 years**. This rate surpasses [Moore's Law](#) by a very large margin. Production efficiencies should continue to improve for the next decade, especially in the US.

- The prolonged [slump in oil and gas prices](#) has had an **interesting effect on military budgets** all over the world. On one hand, most countries increased their military budgets last year, the first time that has happened since 2008; on the other hand, **the three nations that cut their military spending are the world's biggest oil producers**.

\* While the US still has the largest military budget by a wide margin, at \$596 billion, this figure was actually a decline from the previous year.

\* Saudi Arabia's military budget remained unchanged, even though it was at war with Yemen.

\* Russia, the world's top oil producer, cut its military outlay to \$66.4 billion.

#### Gas

- **The [natural gas producers in the best position to survive and thrive operate primarily in the low-cost Marcellus Shale](#)**. In addition to positive cash flow, lower operating costs, ample liquidity, and no near-term debt, the producers in this region benefit from a shallower, softer sedimentary rock with higher concentrations of gas and close proximity to the high-demand markets of the east coast of the US. (Note: the Marcellus Shale, also known as the Appalachian Basin, extends from New York through Pennsylvania, West Virginia, Ohio, Maryland, Virginia, Kentucky and eastern Tennessee.)

#### Coal

- **Featured story:** [Coal markets are ticking upward](#), but from its peak in 2008, **US coal production has declined by 500 million tons per year** - that's 3,000 fewer pounds of coal per year for each man, woman and child in the US.

## Nuclear

- On the eve of the DC Circuit Court ruling on the Clean Power Plan, there are rumors inside the Beltway that *if* the EPA made a mistake with its aggressive regulatory policy, it was that **the Agency took for granted and over-estimated the strength of the US nuclear power fleet**. They assumed that nuclear power would remain a powerful, carbon-free resource and ignored economic, regulatory and political pressures on the industry. AES Premium Members have access to the FTI [white paper](#) on the impact of nuclear retirements on Clean Power Plan compliance.

## Renewables

- **Energy Quiz:** Oil and gas prices are down significantly, while solar and wind energy are surging. Has the tide shifted toward renewable energy in the coming decades? If the current rate of change continues, **what share of global energy will still be served by fossil fuels in 2040?**

- A. 12 percent fossil fuels
- B. 38 percent fossil fuels
- C. 57 percent fossil fuels
- D. 78 percent fossil fuels

Visit the [American Energy Society website](#) for the answer.

- **Breaking News:** According to an [alert](#) issued by WSGR, the IRS has clarified that certain solar assets may qualify as "real property" as a real estate investment trust (REIT). In the interest of space, only one example will be covered here. The assets of a solar energy site can be broken into four components: land, PV modules, mounts, and exit wire. In addition to the land, for which the status as real property was never in doubt, the mounts, which are designed and constructed to remain in place indefinitely, are real property. The exit wire, designed to remain permanently in place, is also real property. However, the PV modules, which perform an active function of converting solar photons into electricity, are not real property for REIT purposes. For more information, please contact Nicole Gambino ([ngambino@wsgr.com](mailto:ngambino@wsgr.com), or [415-947-2117](tel:415-947-2117)).

- Every summer, **California sets another record for solar power generation**. This happened on July 12 this year when it was reported that the state produced 8,030 megawatts of solar power, almost 2,000 megawatts more than the record set in 2015. **But these numbers aren't exactly accurate**. The state also produces an additional 4,406 megawatts from 567,293 solar projects installed behind the meter. So, [California's new solar power record](#) on July 12? Probably more like 11 gigawatts, not 8 gigawatts.

- **Storage Redux:** In 2015, a record 221 megawatts of storage capacity was installed in the US, more than three times as much as in 2014, and in that year the 65 megawatts of installed storage was itself a big jump over the previous year. Notably, more than 160 megawatts of the 2015 total were [deployed by a single regional transmission organization](#) - PJM Interconnection. 221 megawatts is not much considering that total US generation capacity was more than a million megawatts.

## Policy

- The DC Circuit Court announced that [arguments over the Clean Power Plan will take place on September 27](#). Merrick Garland, the circuit court's chief judge and President Obama's Supreme Court nominee, has recused himself, along with Judge Cornelia Pillard, **which leaves nine judges**.

- The EPA has completed its "[endangerment finding](#)," and has concluded that **greenhouse gas emissions from airplanes pose a threat the environment**. Officials are writing new rules to limit pollution from airplanes, and the European ICAO General Assembly is working with the EPA on [similar regulations in Europe](#). (Note: aircraft accounts for 3 percent of total greenhouse gas emissions in the US)

and 0.5 percent of total emissions worldwide, the largest source of emissions not currently regulated.)

- According to EPA scientists, their own agency's massive study on the [effects of fracking on drinking water lacks sufficient data](#) to support the blanket conclusion that the practice is not a **"widespread, systemic" threat** to the nation's water resources. AES Premium Members have access to a true and correct copy of the [letter](#) from the EPA Scientific Advisory Board to EPA Administrator Gina McCarthy. (With attachments, the document is 180 pages long.)

- The US Pipeline and Hazardous Materials Safety Administration has asked pipeline owners to **ensure that their infrastructure does not pose a hazard** to people, property or the environment, particularly those that carried hazardous liquids and have been abandoned. AES Premium Members have access to the [Advisory Bulletin](#). *Editor's Note:* this issue is similar to the [self-bonding issue faced by coal companies](#) that have gone bankrupt and cannot or will not pay to clean up mines.

- FERC Commissioner Tony Clark announced that he will be [leaving FERC](#) at the end of September of this year. **His departure will leave just three commissioners, all Democrats, which is the bare minimum needed to vote** under statutory federal agency quorum requirements. Though this situation is not unprecedented, there are occasions when a Commissioner must recuse him or herself due to a conflict of interest, which will freeze FERC and prevent regulatory rulings. (NOTE: FERC is the US federal agency that regulates the transmission and sale of electricity and natural gas and transportation of oil by pipeline in interstate commerce.)

## Climate

- The US and China - the world's biggest emitters responsible for about 38% of the world's greenhouse gases - have announced they will formally [ratify the Paris climate change agreement](#). 55 countries, representing 55% of global emissions, must ratify the agreement.

- In advance of the G-20 meeting in Hangzhou, China's Energy Ministry has announced [plans to curb oil consumption in order to reduce air pollution](#). Whenever there has been a major international event in China - the 2008 Olympics, 2014 APEC meeting, etc. - China's carbon-based energy consumption falls very sharply. However, this time the scale of the anti-pollution effort is so large that it will affect market prices, at least in the short-term.

- For the first time, **greenhouse gas emissions from natural gas are surpassing those from coal**. AES Premium Members have access to the [EIA report](#).

- The Lower 48 had its the **third warmest start to a year on record**, with an average temperature of 54.3 degrees Fahrenheit, which is 3.0 degrees above the 20th century average. AES Premium Members have access to the [temperature map](#).

- Researchers at NASA's Jet Propulsion Laboratory and the California Institute of Technology say that [a concentrated patch of greenhouse gas methane emissions](#) in the Four Corners region of Arizona, Colorado, New Mexico and Utah seems to **originate from leaks during natural gas production** in that region.

- Despite the "stay" placed on the EPA Clean Power Plan by the Supreme Court, California became [the first state to issue a compliance draft](#) that fulfills the nation's climate rule. In addition to a substantial supply of renewable energy, the Golden State will also rely on its landmark cap-and-trade program for carbon emissions to meet its compliance goals.

## Electricity, Utilities and Power

- AES Member experts are raising **questions about Transmission Access Charges in California** ("**TAC**"), a per-kilowatt hour (kWh) fee for using the state's transmission system. The charge adds about 3 cents per kWh to the levelized cost of energy over a 20-year contract. Note: 3 cents per kWh is roughly 30% of the wholesale value of energy in California. AES Premium Members have access to a [briefing](#) on TAC's.
- The **PJM Interconnection has reversed its opinion** and now believes that the US EPA's Clean Power Plan will [not prevent](#) it from transmitting adequate energy resources to its customers in the eastern US and that compliance costs will make up only a small portion of power costs..
- **PG&E Corp. is seeking to [overturn the verdict](#) on six criminal charges** related to the San Bruno, CA, pipeline explosion, saying the government has failed to meet its burden to prove its case beyond a reasonable doubt. PG&E Corp. has been [fined \\$25.6 million](#) for failing to keep accurate records of its aging natural gas pipeline system. *This story is far from over.*
- Britain's decision to exit the European Union has made it difficult for the country to shift from coal-fired generation to other sources of electricity. Britain is now forced to [rely on imports of natural gas for its electricity](#) and has lost easy access to foreign supplies through the bloc's single market.

## From Basic Research to Technologies and Markets

- Ford Motor Co. has plans to [transform](#) its Dearborn, Michigan auto-manufacturing plant into a zero-waste, zero-energy, zero-water "sustainability system" that produces more energy than it consumes.
- The US Bureau of Land Management is offering two large coal leases:
  - \* The first is a [coal lease in Utah](#), a 6,175-acre tract at Greens Hollow.
  - \* the second lease will be the BLM's first online lease sale of [oil and natural gas drilling rights](#) on federal land (September 20). The auction will be for 14 parcels in Kentucky and Mississippi.
- Major US hedge funds are [increasing their holdings](#) of North American coal producers.
- Alphabet Energy is launching [PowerBlocks, a thermoelectric material](#) that turns waste heat from exhaust into electricity.
- In order to convince Facebook to build a data-center in Los Lunas, the New Mexico Public Regulation Commission has unanimously approved a special service contract to [allow the production of energy from renewable resources](#).

## — FEATURES —

### Featured

Take note San Francisco, Houston, Boston, and Washington, DC, or Portland, Burlington, and Madison - there is a new energy center worthy of mention! The American Energy Society would like to recognize the [Energy Huntsville Initiative](#) in Alabama. The rapid rise of EHI as an influential energy cluster is the result of a strong foundation - extensive government contracts and a determined commitment to expand into new commercial markets. For instance, the US Army Corps of Engineers' Huntsville Center's Energy Division is a go-to energy contractor with special expertise in smart metering and smart buildings, microgrid installation, and renewable energy. The US Space and Rocket Center in Huntsville is also

building an energy center. And, EHI will be the official visitor center of the Tennessee Valley Authority; it will construct a building dedicated to energy education and exhibits in the near future.

### *Quotes*

“We should make a Clean Power Plan that’s based on clean energy, not renewable energy.”  
- Former Energy Secretary Steven Chu

“Part of the problem is that we tend to talk about clean energy exclusive of fossil energy. The two sides do not necessarily have to be incompatible.”  
- David Mohler, deputy assistant secretary for clean coal and carbon management, US DoE

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