



ENERGY MATTERS

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

Volume 17(2); August 22, 2016

Table of Contents:

[Headline News](#)

Conventional, Renewables, Policy, Climate, Electricity and Power

[Features](#)

In recognition of the 2016 Conference on Hydrofluorocarbons (HFCs)

— HEADLINE NEWS —

Conventional

Petroleum

- **The total rig count in the US has [gone up again](#)** (by one); the US oil rig count has increased in 9 of the last 10 weeks. Meanwhile, the amount of oil the Middle East contributes to the global total continues to rise; now 35 per cent, this is the [greatest percentage](#) from the region since the 1970s.
- Although the oil market appears balanced, **oil inventories are at an [all-time high](#)** and continue to pose a threat to the stability of recent oil prices. Even floating storage – one of the most expensive methods of stockpiling oil – is at a record high.
- Oil prices are rising, in part because Saudi Arabia's Oil Ministry mentioned that short positions on crude caused prices to fall. This led to frantic covering that pushed prices higher. **Firms like Goldman Sachs and Morgan Stanley are [not bullish](#)** because production fundamentals (rig counts and oil inventories) do not support recent price changes.

Gas

- **Without much fanfare, the natural gas sector has gone through a [major transition](#)**. Two forces are at work: supply and demand. *Supply*: producing countries like Australia and especially the US have adopted new and improved production techniques, strengthening their positions. *Demand*: in addition to traditional markets like Japan and South Korea, new markets are emerging. The combination of increasing supply and increasing demand has created new opportunities for natural gas storage operators. **The winner in this "new world market" will probably develop technologically advanced storage products and services** that are flexible and cost-sensitive.

Coal

- In the second quarter of 2016, **the top 10 coal-mining companies accounted for nearly [three of every four tons of coal](#)** mined in the country - about 75% of all mined coal.
- **Global demand for coal is starting to [increase](#)**, especially metallurgical coal used in steelmaking. Leading the way are China (except in regions that are dealing with pollution problems), India, and Vietnam, a recent net-importer of coal. Nearby producers, like Indonesia and Australia, are picking up the slack. (Note: Europe is still the most popular destination for US coal exports.)

Nuclear

The US and Mexico are planning a new nuclear power cooperation agreement. AES Premium Members have access to the White House proposal and its [draft agreement](#).

Renewables

- *IF* the DC Court rules in favor of the Clean Power Plan, expect **the share of energy generated by renewable and nuclear energy sources in the US to [increase](#)** from 38% in 2015 to 45% by 2025.

- **Planned corporate investment in [energy efficiency](#) is at an all-time high.**

- **Apple has gotten approval from Ireland to [build a wind-farm](#) on the island.**

- **The US Department of Defense is the [second-largest consumer](#) of renewable electricity in the world. Only Google buys more.**

- **The US DoE offers incentives for the purchase of LED lights** in 48 states because the agency considers the widespread adoption of the technology [essential](#): "LED lights offer the greatest potential impact on energy conservation in the country."

- **Installed residential solar is [declining](#) in California** (down about 6%) but burgeoning in other areas, like Texas.

- **China [installed 20 gigawatts \(GW\)](#) of solar power capacity** in the first half of 2016, three times as much as the same period a year ago

Policy

- **Featured story:** The EPA regulates the reduction of wastewater discharge from coal-fired power plants. But the agency is struggling with a 5 year backlog and has been unable to review a majority of permits that have already expired. As a temporary solution, the EPA asked power-plants to [self-report](#) the amount of mercury, lead, and arsenic in their wastewater discharge. The following are the top-3 largest contributors - **it is important to note that all figures are self-reported.** AES Members can [log into their account](#) to see the self-reported figures, the EIP [Report](#) on Toxic Wastewater from Coal Plants, and the top-10 list for each category.

* **MERCURY** (77 lbs is considered unsafe in large or flowing bodies of water):

1. TVA Cumberland Plant in Tennessee into the Cumberland River - 120 lbs
2. Kentucky Utilities Co. in Kentucky into the Ohio River - 60 lbs
3. Duke Energy in North Carolina into the French Broad River - 51 lbs

* **LEAD** (250 lbs is considered unhealthy):

1. Owensboro Municipal Utilities in Kentucky into Blue Lake - 1,112 lbs
2. Duke Energy in Ohio into the Ohio River - 490 lbs
3. Kentucky Power Co. in West Virginia into the Ohio River - 387 lbs

* **ARSENIC** (1,000 lbs is considered dangerous)

1. DTE Monroe Power Plant in Michigan into Lake Erie - 1,800 lbs
2. SWEPCO Pirkey Plant in Texas into the Brady Branch Reservoir - 1,800 lbs
3. AES/IPL Petersburg in Indiana into the White River - 1,326 lbs

- **Coal-fired electricity is a central political issue in almost all of the battleground states** in this 2016 Presidential election: Arizona (11 electoral votes), Colorado (9), Georgia (16), Indiana (11), Iowa (6), Michigan (16), Missouri (10), Nebraska (1), North Carolina (15), Ohio (18), Pennsylvania (20), Utah (6), and Wisconsin (10). **Collectively, these states represent 149 electoral votes, more than half the 270 votes necessary to be elected president.**

- Under the Obama administration, greenhouse gas emissions fell 9 percent and the energy sector's carbon output dropped 12 percent. Many policy experts recognize that **if the next administration wishes to continue this trend, the next set of regulations will require [heavier lifting](#)**, such as:

* Institute a carbon tax.

* Prohibit extraction of oil, gas and minerals from public, federal and Indian lands.

* Raise the gas tax.

* Strengthen the Clean Power Plan - assuming the DC District Court decides in its favor.

* Implement state-level renewable energy standards on the other 48 states (modeled on existing standards in California or New York).

Climate

- **Countries that are *not* members of the OECD have [passed](#) the OECD developed world in terms of total energy consumed** and will consume almost twice as much energy by 2040.

- The European Commission sets emission targets for each country from a 2005 baseline. Greece, Hungary, Croatia, Bulgaria, Portugal and Romania have already met their 2030 allocation; however, that is because **these countries were essentially [given a pass](#)** and have only had to hold the line at a 0% increase to meet their targets.

- **Biologists believe that biodiversity levels are falling below "safe" levels.** AES Premium Members have access to a peer-reviewed [abstract](#).

- A new study of naturally accumulating carbon dioxide (CO₂) that has been trapped underground for around 100,000 years has found that the greenhouse gas has [not significantly corroded](#) the rocks above, suggesting that **storing CO₂ in reservoirs deep underground is much safer** and more predictable over long periods of time than previously thought.

- **The fuel efficiency standards championed by President Obama in 2012 will fall short of the 54.5-miles-per-gallon 2025 target** the administration set because consumers are [buying more](#) pickup trucks, vans, and sports utility vehicles than expected.

- **The production of wheat, soy, corn, rice, and palm oil crops [emits more greenhouse gases](#) annually than any of the world's countries**, save for the US and China.

Electricity, Utilities and Power

- Assessing the security of the entire US electrical grid, **the [most vulnerable](#) to attack are the tens of thousands of utility substations** scattered across the country. Indeed, there were dozens of break-ins just last year.

- According to Fitch Rating, the policy of "**net-metering**" is [not sustainable](#) from a utility business-model perspective. (Net-energy metering requires utilities to pay customers retail prices for their excess solar power.)

- **Plans to integrate California into a multi-state regional grid like the integrated system in the East have been [put on hold](#).** California Governor Jerry Brown promises to try again next year.
- **Natural gas-fired generation in the US will provide an average of 3.8 million MWh per day this year, a 4% year-over-year [increase](#).**
- **SolarCity and PG&E announced a [new solar-plus-storage](#) demonstration project** to assist the utility in optimizing grid operations.

From Basic Research to Technologies and Markets

- Rocky Mountain Institute (RMI), in partnership with ROCSPOT, a Rochester, New York-based community organization, has issued a [Request for Proposals \(RFP\)](#) to **develop at least 16 megawatts (MW) of solar generation in Rochester.**
- Hazer Group, an Australian company, is **using “cheap as dirt” iron ore to [convert](#) methane in natural gas into hydrogen**, a process that generates near-zero emissions as the carbon content of the gas is captured in the form of high-quality graphite.
- China’s Ministry of Environmental Protection has [installed](#) a **trial 23-foot air purifier in Beijing.**
- A financing concept that was born in Berkeley has spread quickly across the country. The White House announced that both the Federal Housing Administration and the Department of Veterans Affairs would [encourage the use](#) of PACE (Property-Assessed Clean Energy) to **help low-income families install solar panels.**
- More than a dozen exploration and production oil and gas firms (“E&P”), including Extraction Oil & Gas LLC and Vantage Energy LLC, are [preparing to test](#) the IPO market.

— FEATURES —

Featured

The August 2016 Conference on Hydrofluorocarbons (HFCs) deserves a lot more attention. Negotiators from approximately 200 countries traveled to Vienna to establish final rules that will limit the super-warming compound. When the agreement is finalized in Kigali in October, it will be the most significant action to reduce global warming in years. **The American Energy Society would like to recognize the global HVAC industry for its contributions to and support of the conference agenda.** Working against its own self-interest, the industry promoted an aggressive HFC phase-down amendment that pushes manufacturers to speed up R&D on the next generation of equipment using the latest refrigerant replacements and for producers to begin making sufficient supplies of those refrigerants. Moreover, more than just a verbal commitment to research, the industry also established award money to fund it. Contributions from AHRI, ASHRAE, the Department of Energy, and the state of California, of nearly \$6 million will support the study of these refrigerants. AES Premium Members have access to the draft HFC [document](#).

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 Department of Energy

American Energy Society, 654 Gilman Street, Palo Alto, CA 94301