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Energy Matters

The energy news you need to know right now

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"Sound-bite" news summaries for conventional, renewables, electricity, policy, events, jobs, funding, online courses, and more.

Headline News

Conventional

Oil and Gas

- **Featured story:** In 2009, oil companies lobbied the US Securities and Exchange Commission for an accounting change that made it easier to claim reserves from wells that wouldn't be drilled for years. The moment that the SEC agreed to the new rules, some inventories doubled virtually overnight and investors poured money into the shale boom, enticed by near-bottomless prospects. But the SEC rule had a catch: oil from the reserve wells must be drilled within five years. Time is now up, prices are down, and [the rule is about to wipe out billions of barrels of shale drillers' reserves](#). The reckoning will come in the next few months when the companies report 2015 figures.

- **Supplies of oil and gas will exceed demand by about 600,000 barrels per day** at least through the first quarter of 2016 and possibly beyond.

- **The oil and gas industry is experiencing financial struggles not seen since the great recession** several years ago. In recent months:

- 10+ oil and gas companies have gone bankrupt.
- About 70,000 US jobs have been cut (or 14.5% of the total industry workforce).
- There have been over 200,000 layoffs globally.

- The Federal Reserve Bank of Dallas has announced that it [does not see conditions improving](#) for the oil and gas industry in 2016.

Coal

- In the last quarter of 2015, the [US mining industry cut 4,500 jobs](#). (Editor's note: Congressional lawmakers and Presidential candidates are [finally talking about legislation](#) that

would provide benefits for coal miners suffering from black lung disease.)

- **The following are the five least efficient coal power plants** that many believe cannot and will never be able to meet the new US EPA Clean Power Plan standards (CO2 emissions rate in lbs/MWh, in 2014):

5. Ames Power (Iowa) - 2,531
4. Muscatine (Iowa) - 2,544
3. Erickson (Michigan) - 2,581
2. Marion (Illinois) - 2,654
1. Eckert Station (Michigan) - 2,679

Geopolitics

- **Iran and Saudi Arabia have cut ties ... Again.**

Iranian leaders strongly criticized the Saudi's execution of Sheikh Nimr al-Nimr, an outspoken Shiite cleric. and the Saudi Embassy in Iran was stormed by angry crowds in response. Even though there is constant tension between these two nations, this time Brent crude prices are climbing as tensions rise.

Renewables

- **About 33 percent of all solar photovoltaic power comes from small-scale solar PV.**

- **Wind energy in the US generates an amount of power equivalent to the total demand for electricity in 19 million homes.**

- **Germany and California could not differ more.** Yet **they share one overarching goal:** to develop climate-friendly energy solutions that can serve as a model for the world. Both are expanding their clean power, especially wind and solar, to ensure that it accounts for more than a third of all energy generated by 2025. Both want to slash their carbon emissions to 80 percent of 1990 levels by 2050. And both are seeking ways to improve their respective transportation sectors, in which they share a love of fast, gasoline- or diesel-powered cars. But Germany's policies have come at a price: the monthly power bill for a three-person household has more than doubled since 2000, to \$94 a month. California, by contrast, has been able to avoid that jump through stringent conservation measures and by including the utilities in its renewable expansion plans - the average monthly bill in California, air-conditioning and all, is \$88.

- The Nevada Public Utilities Commission has decided to replace net-metering credits with a far less generous wholesale power market rate. **Solar City reacted by stating that it will no longer offer solar sales or installations in the state.**

- While Virginia is one of the 23 states fighting the new Clean Power Plan rules, the Commonwealth has also entered into a long-term agreement to **purchase 110 MW of solar-generated electricity** from Dominion Virginia Power to **comply with the CPP.**

- **Top 9 largest users of green power** in the US (aka "clean" and/or renewable, in kWh, and as a percentage of the total energy used):

1. Intel (3,107,050,000; 100 percent)
2. Microsoft (2,488,172,313; 100 percent)
3. Kohl's Department Stores (1,429,749,630; 100 percent)
4. Apple, Inc. (1,021,607,000; 100 percent)
5. Google, Inc. (879,152,664; 34 percent)
6. Mars, Inc. (801,462,525; 92 percent)

7. City of Dallas, TX (715,086,000; 100 percent)
8. Starbucks (696,982,000; 69 percent)
9. US Department of Energy (629,969,167; 12 percent)

- **Toyota Motor Corp. is making a huge bet with its [Mirai fuel-cell sedan that hydrogen-powered vehicles](#)** - not battery-electric cars - will be the real future of clean transportation. It's starting with very small numbers, selling 34 cars last month in California with plans to deliver 100 this year at a price of \$58,335 each. The car qualifies for a \$5,000 rebate from the state of California and the coveted carpool-lane sticker.

Policy

Congress and the end-of-year Omnibus Bill

Featured story: In case you missed it, with just a few hours left in the '15 Congressional calendar, legislators [passed a number of bills into law](#):

- Lifting the ban on oil exports.
- Extending the Investment Tax Credit (ITC) for renewable energy:
 - 30 percent for solar for another three years, with an incremental decrease through 2021.
 - 2.3-cent Production Tax Credit (PTC) for wind through next year, followed by incremental reductions of the incentive. Also receiving tax credits were geothermal, landfill gas, marine energy and incremental hydro, which will each get a one-year PTC extension.
 - Grant money to support research and development for energy and water efficiency.
- The biggest winner in the end-of year bill? Perhaps the "[Electrify Africa Act of 2015](#)," which will help provide reliable power in places desperately in need by encouraging public-private investment.
- The other big legislative winner in Congress ... [new air conditioning standards](#). The bipartisan effort that included input from industry, utilities, and environmental groups will probably save more energy than any other policy in recent legislative history.

NOTE: In private conversations, Congressional staff admit that the energy provisions in this end-of-year bill were some of the [easiest legislative deals](#) in recent memory. Publicly, [both sides are claiming victory](#): Speaker of the House Paul Ryan says that lifting the oil export ban is "like having 10 Keystone XL Pipelines"; on the other hand, renewable energy lobbyists argue that the extension of the tax credits will do more to reduce carbon dioxide emissions over the next five years than lifting the export ban will do to increase them.

Energy and the US Supreme Court

- In the upcoming 2016 session, issues like voting rights, surveillance, and the death penalty will receive a lot of attention from the press. However, the Court will consider two very important cases for energy:

1) The US Supreme Court will decide the fate of Federal Energy Regulatory Commission (FERC) Order 745, which establishes uniform rules for customer engagement in US electricity markets. FERC argues that [demand response](#) falls under its authority to regulate wholesale interstate markets under the commerce clause, while challengers argue that the commerce clause does not apply to retail electricity in any form, regardless of the impacts that demand response is meant to have on the wholesale markets.

2) The consolidated cases of Hughes and CPV Maryland v. PPL EnergyPlus. The Maryland program ensures [fixed contract rates and stable revenues](#) for retail electricity purchasers, but the lower court found that the incentives infringed on FERC's jurisdiction over wholesale rates for

electricity and transmission that crosses state lines.

The US Environmental Protection Agency

The EPA has been the target of a lot of attention, especially in Congress. That attention has led to closer scrutiny:

- The US Government Accountability Office has concluded that [the EPA violated publicity, propaganda, and anti-lobbying provisions with its use of social media](#). The conclusion of the GAO may have far-reaching implications for most agencies in Washington, DC.
- Emails have been obtained that show that [the EPA worked closely with environmental lobbyists](#) to craft its Clean Power Plan. The emails show that administrators and lobbyists worked together to create a standard that would be impossible or economically ruinous for existing coal plants to meet in order to force their closure.
- The EPA is now re-writing its rewrite of the air pollution rules that the Supreme Court said were improperly written. The court had decided in June that the EPA's limits on mercury and other toxic air pollutants from coal-fired power plants were invalid because the agency did not consider costs before it decided to pursue the regulation.

Despite the controversies swirling around the EPA, Republican leaders in the House withdrew their opposition and agreed to keep EPA funding flat in 2016, forfeiting their chance to block the agency through the spending process.

Looking back at the COP21 conference

- World leaders were concerned that the US Congress might oppose its contribution to the Green Climate Fund (GCF), the mechanism that the UN and World Bank uses to help fund the deployment of renewable energy in underdeveloped nations. However, the spending package released by congressional leaders at the end of the year did not block American financial contributions to the fund. The bill doesn't explicitly appropriate funding for President Obama's pledged contribution to the GCF, but the legislation doesn't formally block money for the it either. [Obama is expected to use discretionary funding to send American money to the GCF](#).

Climate

- The *Green Car Journal* has announced its [nominees for the EV car of the year](#):

Audi A3 e-tron

BMW 330e

Chevrolet Volt and the Malibu Hybrid

Hyundai Sonata

Toyota Prius

Volvo XC90 T8 PHEV

- The reality of COP21 has set in and [the numbers are daunting](#): **more than 7.04 billion tons (or, 15.5 trillion pounds) of carbon dioxide needs to stay in the ground** rather than spewed into the atmosphere to reach the COP21 targets.

- **No one really knows how much plastic litter is in the oceans**. Estimates range from 15 trillion to 51 trillion pieces of plastic.

- Some critics are raving about a **new documentary film, dubbed "Behemoth," which sheds light on the human and environmental costs of coal mining and consumption in China**. One reviewer says: "An impressively self-shot poetic exercise in controlled righteous outrage, emphasizing the contrasts between rapidly dwindling green pastures and dead landscapes disemboweled by toxic mining."

- For the second straight year, [the Arctic warmed faster](#) than any other place in the world.
- **Following a series of earthquakes**, Oklahoma Rep. Richard Morrisette has urged state Governor Mary Fallin to [halt oilfield wastewater injection](#) in the Arbuckle Formation.
- **Portland has been rated as the city most prepared to deal with the effects of climate change**, followed by Boston, Los Angeles, Raleigh and Tuscon. Tampa came in last.
- **Ozone, commonly known as smog, has decreased in the US by 33 percent since 1980.**

Electricity and Power

- **Featured story:** [Cyber attackers have gained "remote access" to the US national grid](#) about a dozen times in the last decade. The most recent digital clues point to Iranian hackers.
- **The top 5 US power companies and electric utilities, ranked by greatest implied upside to price targets** (the formula is based on the base stock prices on December 21 and the mean analyst target prices):
 5. NRG Yield Inc. (50.38)
 4. Calpine Corp (56.40)
 3. NRG Energy Inc. (80.67)
 2. InfraREIT, Inc. (90.74)
 1. Dynegy Inc. (123.34)
- The Federal Reserve raised interest rates, but that **did not help "yieldcos,"** the dividend-paying holding companies that were the darlings of the renewable energy sector because they distribute cash from money they raise selling electricity under long-term contracts.
- **Natural gas is now the leading fuel of choice for the nation's electric power sector**, replacing coal, once the long-reigning king of US power supply.
- Federal prosecutors are preparing to **offer proof that PG and E willfully decided not to comply with federal pipeline safety regulations** as "part of a corporate culture of prioritizing profits over safety."

Professional Development: Online Courses and Programs

- [Basic Concepts of Electricity](#), offered by SNL-Energy. In this course you will become familiar with the basic characteristics of electricity and electric circuits as well as the numerous qualitative and quantitative terms used to describe electricity.
- [Energy Entrepreneurship 101](#), offered by MIT professor Bill Aulet of MIT, through edX. (\$0) Many seemingly great ideas and technologies come to a sudden halt in the face of one simple, question: "Who is your customer?" This course will help answer that question.
- [Energy Economics and the Environment](#), from Udemy (\$). This course focuses on "tradeoffs" and choices.
- [Energy 101 - The Big Picture](#), from Coursera (\$0). A general introduction to energy, this course emphasizes professional opportunities.

- [Basics of Project-Level GHG Accounting](#) , including proficiency exam, from GHGMI (\$\$)
Many countries are taking action to manage their greenhouse gas (GHG) emissions, a cause of climate change. This course serves as the basis for the UN Clean Development Mechanism (CDM), the Verified Carbon Standard, and many other carbon-offset initiatives.

- [Middle East 101](#), from Udemy (\$) Energy is a major theme in this general course.

- [Oil and Gas, from Exploration to Distribution](#), from the IFP School (\$0). Gain a thorough understanding of the oil and gas chain.

- [Basic Concepts of Energy Regulation](#), offered by SNL-Energy. This course will familiarize you with the basic concepts of regulation as it applies to the natural gas and electric industries.

Technology and Commercial Opportunities

- AES Energy Storage (no relation to the American Energy Society) has [acquired 1 gigawatt-worth \(a billion watts\) of lithium ion batteries](#) from Seoul-based LG Chem, a strong signal that **a battery/storage revolution is underway.**

- To increase efficiency, many solar power systems are equipped with tracking devices that enable the solar panels to follow the sun. Now, researchers from King Abdullah University of Science & Technology (KAUST) in Saudi Arabia and Taiwan's National Central University have developed [a special glass coating for solar cells that captures sunlight from almost any direction](#) and increase efficiency by as much as 46 percent. The coating also repels dust.

- If solar cells continue to improve, manufacturers will require greater amounts of lead. To meet this demand, MIT researchers have developed a simple procedure for **making a promising type of solar cell using discarded lead-acid car batteries.**

- Many oil and gas companies are pressing on despite an excess of supply and depressed prices. However, Chesapeake Energy Corporation, the second largest independent gas producer, which has been at the forefront of many trends related to shale - lateral lengths, leasing binges, developing new plays - **is not doing well and may not make it through the year.**

- A study by the DoE and IEA has determined that **exporting shale gas will reduce fuel prices by about 5 percent in international markets and increase US prices by 17 cents.**

Features

Organization - Buffalo Energy

Everyone wants energy efficiency, but not everyone is suited to be an expert in the field. Of course, factors like talent, training, education and resources help experts stand apart from the field, but environment and experience matter, too. For instance, all things being equal, winter conditions in Western New York probably create conditions that push energy efficiency experts to greater heights than temperate conditions in Southern California. That is why the American Energy Society would like to recognize the work of [Buffalo Energy](#), home energy solution specialists who probably have to work just a little bit harder than others to ensure that buildings

are energy efficient. And of course, thank you Buffalo Energy for your interest in the American Energy Society.

Individual - Nina Terrey

The American Energy Society would like to recognize Nina Terrey and her colleagues at **ThinkPlace**, a unique organization dedicated to finding innovative solutions to complex public problems - like energy. The American Energy Society has had a unique opportunity to co-promote tech-to-market energy innovation incubators with ThinkPlace, and this dynamic process may ultimately introduce new ways to think about energy in Australia, New Zealand, Singapore, and Kenya. Thank you Nina, Michelle, Charlie, Dane, Dean, Kerstin and everyone else at ThinkPlace for such an incredible opportunity.

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