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Russian Hackers Penetrated Networks of U.S. Electric Utilities

"Russian hackers gained access to the networks of U.S. electric utilities last year, which could have allowed them to cause blackouts, according to federal government officials, who said the campaign is likely continuing, The Wall Street Journal reported."

Why this is important: The Department of Homeland Security warned utilities of potential hacking attempts by the Russian state-sponsored group Dragonfly. In response to the warning, many utilities took their systems off-line from the internet to avoid hacking threats. In response, Dragonfly targeted the utilities' third-party vendors to gain access to the utilities' control systems. This persistent effort not only shows the extent to which Russia is engaging in cyber-warfare with the United States, but it also shows the surprising vulnerability of the country's utilities to foreign enemies. --- Nicholas S. Preservati

Oil Could Hit \$200 if U.S., Iran Go to War

"Oil prices could hit as high as \$200 a barrel if Iran shuts down the Strait of Hormuz or engages in military conflict with the United States, Again Capital's John Kilduff warns."

Why this is important: As President Trump pushes countries to cut all imports of Iranian oil in November, Iran's leaders have threatened to cut the world's most important seaborne shipping lane for oil. As a result, the analysts say Brent crude is headed towards \$90 a barrel, despite a weaker market, strong U.S. shale production, and OPEC's decision to increase production. ---Gerald E. (Gee) Lofstead III

PA DEP Seeks Comments on Pipe Project to Flow Marc Gas to Ohio

"In January, Dominion Energy filed a request with the Federal Energy Regulatory Commission to expand capacity along the existing Dominion Energy Transmission Inc. (DETI) pipeline from Pennsylvania to Ohio."

Why this is important: Dubbed the Sweden Valley Project, Dominion's project is forecast to cost \$48 million and will expand existing capacity by building a mere three miles of new pipeline. The new pipeline will lay next to existing pipeline (in Greene County, Pennsylvania). The only greenfield/ completely new ROW construction is a 1.75-mile pipeline to connect with the Tennessee Gas Pipeline in Tuscarawas County, Ohio. If approved, an additional 120 million cubic feet per day of gas will flow to generate electricity in the Midwest power market, adding significant Pennsylvania Marcellus Shale gas to the existing flow along DETI. Dominion has stated all 120 MMcf/d already is contracted and spoken for by an undisclosed customer. --- John C. (Max) Wilkinson

India's Coal Shortage Is U.S. Miners' Gain

"The country's power ministry has advised all provinces to start importing coal for the next three years in order to operate their

power plants ... which, in turn, is music to the ears of coal miners in the United States."

Why this is important: The India power ministry wants all provinces to import thermal coal for electrical generation for the next three years. These imports will lead to increased opportunities for U.S. thermal coal exports. In April, India imported 7 million tons of steam coal and it is believed the country will import 145 million tons this year. Currently, power plants in India are reporting a 9-day supply of coal to be burned -- about 20 percent of normal stockpiles. --- Mark E. Heath

Curbelo Rolls Out Carbon Tax Plan to Deep Skepticism

"Rep. Carlos Curbelo rolled out the first Republican carbon pricing bill in nearly a decade, a rare political risk that quickly earned rebukes from conservatives and tepid praise from environmental groups."

Why this is important: A Republican U.S. representative has rolled out a proposal for a \$24/ton carbon tax, which would include elimination of the gasoline tax. Funds raised would go to highways, low-income household assistance, and coastal mitigation projects. This is another in a long series of trial balloons for those seeking to reduce greenhouse gas emissions, all of which have failed so far, and which seem unnecessary in light of continuing reductions in U.S. greenhouse gas emissions as a result of fuel switching to natural gas. --- David L. Yaussy

Judge Throws Out New York City's Climate Change Lawsuit Against 5 Major Oil Companies

"New York is one of several cities that have filed suit against big oil companies, which the municipalities blame for adverse impacts related to global warming."

Why this is important: This decision comes on the heels of two similar dismissals of climate change lawsuits in California federal court. This is a blow to plaintiffs as they specifically chose California and New York as the most favorable venues in which to bring the lawsuits. More importantly, these decisions provide a sound justification for dismissing similar suits brought in other federal jurisdictions, namely responsibility for addressing the issue of climate change has been delegated to Congress and the Executive Branch so there can be a uniform national solution. --- Nicholas S. Preservati

Shale Gas: Tilting the Balance of the Energy Trade

"GlobalData's latest report, Shale as a theme in Oil & Gas, suggests that the U.S. energy landscape has greatly benefited from the shale industry as production contributions have helped place the U.S. at the top of global crude production and future gas supply is anticipated to exceed demand far into the future."

Why this is important: For the next five to 10 years, it is expected U.S. and Canadian shale industries will drive worldwide energy production and tilt the balance of energy power away from the current dominant producers. Worldwide shale production will continue to develop, with China and Argentina at the forefront. --- Gerald E. (Gee) Lofstead III

Team Lands New Efficiency Breakthrough for Emerging Solar Cell Material

"Dr. Hao and her team broke the 10 percent efficiency barrier for not only sulfide kesterite but also for a standard sized kesterite solar cell, whether pure sulfide material or incorporating less-desirable selenium."

Why this is important: Scientists continue to look for new photovoltaic components that are non-toxic and rely less on rare-earth minerals. Sulfide kesterite, composed of copper, zinc, tin and sulfur, could ultimately replace today's more exotic photovoltaic materials. But, that won't happen until efficiency ratios approach 20 percent. It appears this group is headed in that direction. --- David L. Yaussy



"But this global movement requires utilities to transform their traditional centralised networks into distributed and integrated power networks, and these new networks must evolve rapidly from demonstration and pilot phases to solid, longer-term investments that must play an important part in new business models."

Why this is important: From a combination of increasing public desire for clean energy, falling prices and significant regulatory subsidies, solar photovoltaics, battery energy storage and microgrids are beginning to be deployed across the UK power grid. A recent Bloomberg New Energy Finance ("BNEF") report predicted the energy storage market will double six times by 2030, with more than \$100 billion being invested across the globe in the next 15 years. However, the chair of the UK Energy Research Centre said at the 2017 UK Energy Summit the deployment of batteries alongside solar panels will add to the overall cost of the energy system. Distributed storage will enable many households and businesses with solar panels to go off-grid, but in so doing will diminish naturally complementary relationships in wind and solar generation to the grid. Wind/solar unbalancing will increase whole-system costs requiring other consumers to pay them. Currently, Tesla, Panasonic and LG Chem dominate battery storage production. There are new entrants on the horizon though, in the form of General Electric and Fluence, a joint venture between AES Corporation and Siemens. --- John C. (Max) Wilkinson

Tight Coal Supply in China to Continue in 2018

"In recent quarters, however, events have demonstrated that China is currently unable to meet growing national power requirements without burning more coal."

Why this is important: China still has very tight supplies of thermal coal for electrical generation. Originally, China wanted to limit the amount of coal burned to clean up air pollution issues. However, China now finds itself in need of imports of thermal coal to keep up with electrical generation and industrial demands. These developments will continue to help U.S. thermal coal compete in the world export market. --- Mark E. Heath

As Infrastructure is Completed, More Efficient Movement of Gas to Market to Boost Industry

"Though the high-water mark for gas rigs may not be seen again, there is reason for optimism for those working in the natural gas industry here, according to David J. Spigelmyer, president of the Marcellus Shale Coalition."

Why this is important: More pipelines equal better prices says David Spigelmyer, president of the Marcellus Shale Coalition, which is one of the more influential oil and gas trade groups in the Appalachian Basin. Operators in the region are optimistic about Spigelmyer's and other industry experts' predictions on the eventual effects of multiple pipelines currently under construction. More specifically, better pipeline infrastructure should provide better and cheaper access to markets in other regions of the country, such as the soon to be completed Atlantic Sunrise project, which will connect Northeast Pennsylvania to North Carolina and Georgia. With greater market access and lower costs to transport gas from the region, Appalachian gas should become more competitive with other sources of energy, including gas from other shale plays, and thus will become more desirable with energy consumers. In turn, Appalachian producers should see an uptick in price for their gas, which should lead to further upstream investment and production efforts in the Basin. --- <u>Travis H. Eckley</u>



Saudi Arabia Opens the Door to First Major Wind Farm

"The Kingdom of Saudi Arabia has opened up bidding on a new \$500 million wind farm in the desert."

Why this is important: Saudi Arabia is moving aggressively to transition from petroleum to renewables for electricity generation in the kingdom. In addition to this first utility-scale wind farm, the Saudis are looking at adding a phenomenal 200 GW of photovoltaic solar over the next dozen years. It reflects an understanding that its oil is not limitless, but it also represents a recognition that petroleum is more valuable as a motor fuel than as a source of electricity generation. --- David L. Yaussy



EIA Energy Statistics

Here is a round-up of the latest statistics concerning the energy industry.

PETROLEUM

This Week in Petroleum

Weekly Petroleum Status Report

NATURAL GAS

Short-Term Energy Outlook - Natural Gas

Natural Gas Weekly Update

Natural Gas Futures Prices

COAL

Short-Term Energy Outlook - Coal

Coal Markets

Weekly Coal Production

RENEWABLES

Short-Term Energy Outlook

Monthly Biodiesel Production Report

Monthly Densified Biomass Fuel Report

If you would like to subscribe to this weekly e-blast or know someone who would, please email us and we will add you or your acquaintance to the email list.

If you have any energy questions, please feel free to contact us.

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