

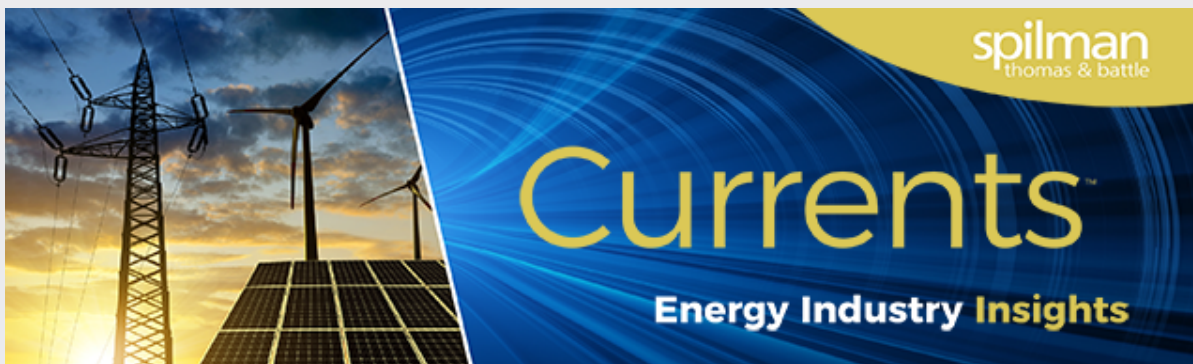
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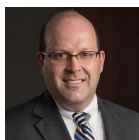
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## Volume 5, Issue 30

### ● [Welcome](#)

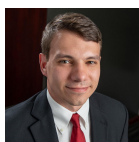
Welcome to Volume 5, Issue 30 of *Currents*. In today's e-newsletter, we look at the increases in coal power, clean energy global investments and infrastructure, rooftop solar projects and batteries, coal waste residue repurposing, evolving the grid, and plant-based jet fuel. We would love to know your thoughts about what we considered to be important and why. We hope you enjoy reading.



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### ● [Coal Power to Increase for First Time Since 2014, US Says](#)

*"The amount of electricity produced by coal plants is expected to tick up 22% in 2021, reversing coal's six-year downward trend."*

**Why this is important:** For the first time in seven years, U.S. coal-fired electrical generation has increased. This year, coal will produce 22 percent of U.S. electrical power -- ahead of natural gas for the first time since 2016. The driver of the change has been natural gas prices, which have risen from \$2 to

\$4.93 per BTU in one year. The same thing is happening in Europe where coal plants are restarting as natural gas is relied upon heavily to support renewables. The U.S. rise may not be long lived however, depending on export demand. The total U.S. coal-fired electrical generation has decreased from 300 GW to 200 GW. But currently in the U.S., \$4.8 billion investments in 15 new coal mine projects are under development. --- [Mark E. Heath](#)

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## ● [Global Investment in Clean Energy Must Triple to Meet Climate Goals, Leading Energy Agency Warns](#)

*"Current pledges to cut emissions will achieve just 20% of the reductions needed by 2030 to put the world on a path to net zero by 2050."*

**Why this is important:** The article reports that the world is not moving quickly enough to cut emissions, making investments in clean energy at only 1/3 of the level needed. Not only does clean energy investment need to triple in the next decade, but it also must flow into emerging and developing economies. There is some expectation that this trend towards cleaner energy sources could reap significant financial benefits in the form of jobs and investment in technologies, which would incentivize the transition. Without this drastic growth in clean energy, experts expect that we cannot avoid the worst impacts of climate change. --- [Carrie H. Grundmann](#)

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## ● [Could Rooftop Solar Really Provide Enough Electricity for the Entire World?](#)

*"The authors then worked out that, if all the surface area was covered with solar photovoltaic panels, they could generate a total of 27 petawatt hours of electricity per year—more than the combined electricity consumption of the world in 2018."*

**Why this is important:** The authors admit that it isn't really possible to put solar on every rooftop, but it provides an interesting thought experiment. The report is intended to support decentralized power production, and the ease by which individuals can collectively contribute to electricity generation. The difficulty remains in the timing of the power delivery. As anyone who has seen the California "duck curve" knows, electricity from solar, including huge amounts of rooftop solar, more than meets grid demand on a sunny day. The difficulty is providing power from early evening until early morning the next day. Large amounts of additional solar and battery storage would be necessary to accomplish that. --- [David L. Yaussy](#)

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## ● [Infrastructure Helps West Virginia Coal: Washington Package Could Give Industry Shot in the Arm](#)

*"Besides the \$3.5 billion of that money earmarked for state roads and bridges and other infrastructure needs, passage should also lead to more jobs in the area in an industry that needs a shot in the arm."*

**Why this is important:** The Infrastructure Bill is still awaiting passage by the U.S. House of Representatives as details of the companion Build Back Better Bill are being negotiated now. West Virginia Governor Jim Justice, a Republican, supports the Infrastructure Bill and believes the Biden bill will help West Virginia in general. West Virginia is a major producer of metallurgical coal used to make steel for the roads and bridges to be built in the Infrastructure Bill. Gov. Justice's family-owned coal companies believe the bill could lead them to hire 500 more miners, who ultimately would make \$50,000 to \$70,000 a year. But, the company admits it's hard to find new miners now as many have left the industry after recent downturns or have retired. --- [Mark E. Heath](#)

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## ● [Developers Increasingly Pair Batteries with Utility-Scale Solar to Combat Declining Value in Crowded Markets](#)

*"After installing a record 12.8 GWdc across 161 new projects in 2020, the solar industry is on the cusp of a new normal."*

**Why this is important:** The cost of electricity produced by solar power continues to drop, and a growing number of solar projects are being constructed in conjunction with short-term batteries. The increasing number of solar projects being proposed nationwide makes it likely that it will see continued growth. That growth will continue to be tempered somewhat by the unbalanced nature of daytime-only production, which makes it difficult to level out generation for periods longer than short-term battery storage will allow. --- [David L. Yaussy](#)

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## ● [Senators Manchin and Capito Announced \\$7M Investment in Coal Waste Residue Repurposing](#)

*"In August, both Chairman Manchin and Senator Capito expressed support for Touchstone Research Laboratory's application for funding through the National Energy Technology Laboratory's Advanced Coal Processing program."*

**Why this is important:** The U.S. Department of Energy has announced investments totaling \$7 million to further work on repurposing coal waste residuals under its National Energy Technology Carbon Ore Processing Program. Research in recent years has focused on rare earth minerals and other valuable products. The announcement was praised by West Virginia Senators Shelly Moore Capito (R) and Joe Manchin (D). The funds include \$1 million for the Touchstone Research Laboratory, located in Triadelphia, West Virginia, which is working on turning coal waste to produce high value synthetic graphite. --- [Mark E. Heath](#)

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## ● [Amazon, DOE, PJM Urge FERC to Support Proactive Transmission Planning for an Evolving Grid](#)

*"Generally, the Department of Energy, state regulators, utilities and others supported proactive transmission planning to help connect wind and solar farms to population centers."*

**Why this is important:** There are many moving pieces that must be addressed to effectively shift the U.S. towards more renewable energy. The Federal Energy Regulatory Committee ("FERC") recently has proposed a rule-making to address transmission infrastructure and its ability to accommodate expansive growth in renewable energy. The cost of these transmission upgrades is estimated to be as much as \$360 billion by 2030 and \$2.4 trillion by 2050. With these costs in mind, state regulators, regional grid operators and others are asking the FERC to require utilities to engage in long-term, holistic transmission planning with an eye toward significant growth in renewable energy on the grid. A final transmission rule from FERC is expected in approximately the next year. --- [Carrie H. Grundmann](#)

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## ● [Plant-Based Jet Fuel Could Reduce Emissions by 68%](#)

*"Replacing petroleum-based aviation fuel with sustainable aviation fuel derived from a type of mustard plant can reduce carbon emissions by up to 68%, according to new research."*

**Why this is important:** Producing jet fuel biologically could reduce greenhouse gas emissions, and be a step toward net zero carbon dioxide emissions. Sustainable Aviation Fuel has been tried before, using algae, with limited success. Ethanol from corn has been more of a commercial success, and a boon to farmers, but the energy to raise the crop and convert it to ethanol is pretty close to the energy it produces. --- [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**

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**What are your areas of interest? If there are particular industries or issues that you would like to hear about, [email us](#)! We have a large number of attorneys willing to weigh in on the issues that impact you and your business.**

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