

Mississippi Renewable Energy and Energy Efficiency Update

MPSC Regular Meeting and Docket Call – January 12

At the January 2017 MPSC Regular Meeting ([see agenda](#)), the Commission acted on the following items of interest to renewable energy and energy efficiency supporters:

Several regulated utilities filed annual adjustments for various rates and riders. Atmos Energy will be increasing its Annual Stable/Rate Adjustment (SRA) which will result in an increase of \$1.47 for the average customer per month.

Energy Mississippi filed annual adjustments for its Energy Efficiency Rider (EE-2), Energy Cost Rider (ECR-4), Power Management Rider (PMR-12), MISO Participation Rider (MISO-1), and Utility Procurement Cost Rider (UPC-4). The cumulative impact of the rate and rider adjustments will result in a \$7.00 per month increase on the average customer's bill. Fifty-five cents is directly attributable to the Energy Efficiency Rider.

Mississippi Power Co. filed annual adjustments for its Regulatory Tax Recovery Clause Rate (RTR), Fuel Cost Recovery Rate (FCR-2) and Energy Cost Management Factor (ECM-2). The cumulative impact of the rate adjustments will result in a \$6.45 per month increase on the average customer's bill.

MPSC legal staff presented the First Report and Recommendation of the Net Metering Joint Working Group. See more information below under the topic "Net Metering Solar Safety Working Group."

Next Meeting of the MPSC – The next regular meeting of the MPSC will take place on **February 7, 2017, at 10 am** in the MPSC Hearing Room to consider the Docket and other matters. See the [Meeting Notice](#).

Net Metering Solar Safety Working Group

The Net Metering Solar Safety Working Group (SSWG) was created by the MPSC in its [Order Adopting Net Metering Rule](#) (See pages 20-21) to address consumer protection and safety issues/standards for installations for distributed generation systems and review mechanisms for educating consumers.

Report to Commission: The agency members of the SSWG provided the MPSC the [First Report and Recommendations of the Net Metering Solar Safety Working Group](#) at the January 12, 2017, Commission meeting in the MPSC Hearing Room in Jackson, MS. The report summarized the SSWG's three meetings and provided the following recommendations:

- To closely monitor the budding solar industry in Mississippi, including the new credentialing and licensing requirements and testing being developed by the Mississippi State Board of Contractors;
- To encourage the Mississippi State Board of Contractors, in cooperation with solar installation professionals, to create "best practices" guidelines for solar installation;
- To require utilities to provide the most current and relevant information to ratepayers regarding how to understand the benefits and take advantage of their net-metering programs;
- To provide ratepayers with access to the consumer protection guidelines and standards being developed by the Attorney General's Office; and,
- To authorize the Working Group to continue its meetings for the reasons stated herein on a quarterly basis throughout the 2017 calendar year.

Commissioner Brown highlighted the Solar Safety Working Group as an example of public/private cooperation and how goals and objectives can move forward when all parties are at the table and contributing solutions. Commissioner Britton added his support of the Working Group.

MS Board of Contractors' Solar Committee to Create a Solar Installer License

The Mississippi State Board of Contractors (MSBOC) could soon adopt a pathway for a new solar (photovoltaic and thermal) installation license for contractors wishing to install residential- and/or commercial-scale solar systems. New solar installation professionals would need to apply for a license and sit for an exam. Contractors that have performed solar installations under the Commercial Electrical Contractor license or similar could be 'grandfathered' into the program. The MSBOC will be developing testing criteria over the next several weeks and hope to have a solar installer certification program in place by July 1. The MSBOC can award a commercial solar installer license under existing state law, but the creation of a license for residential solar installations requires legislative action. Please take time to review [SB 2855](#). This bill would define "Residential Solar Contractor" as used in the Residential Builders and Remodelers Licensing Law (Section 73-59-1, Mississippi Code). The bill would also revise the list of persons required to be licensed by the State Board of Contractors to include Residential Solar Contractor.

MPSC Work Session – January 24

The MPSC held a work session on January 24, 2017 ([see agenda](#)) on the topics of "Robo Calling" and "Natural Gas Infrastructure."

Mississippi is served or traversed by 15 interstate natural gas pipelines. Outflow capacity across the state is approximately 29 billion cubic feet (Bcf) per day. Current outflow volume is approximately 9.8 Bcf/day. Mississippi has 12 underground storage facilities with a total capacity of 217 Bcf. Mississippi produces 0.5 Bcf/day and consumes 1.4 Bcf/day. There is sufficient supply to support growth of natural gas demand in Mississippi.

The MPSC held a brief "Special Session Commission Meeting" to consider Docket 2006-UA-352. The measure provides for MS Power Company's recovery of system restoration costs and property damage reserve fund pursuant to Hurricane Katrina. For the last 10 years, MS Power Customers have paid approximately \$3.45/month to help fund the utility system restoration costs. The MPSC has found that the loans have been satisfied and customers will see that charge removed from future bills.

MS Building Codes Council

The next meeting time for the Mississippi Building Codes Council (MBCC) has not been posted. The legal counsel assigned to support the MBCC continues to investigate the statutorily-defined role of the MBCC, the MS Development Authority's role in establishing commercial building energy codes, and operational guidelines of the MBCC. Eventually, meeting notices, proposed agendas, meeting minutes and other materials will be posted on the State Fire Marshal's website at <http://www.mid.ms.gov/sfm/state-fire-marshal.aspx#&panel1-1>. I will pass along information once a meeting is rescheduled.

Madison County Adopts New Building Codes

On January 3, the Madison County Board of Supervisors [unanimously adopted](#) the 2015 International Building Codes with no addendums and 2015 International Residential Building Codes with no addendums. The 2015 IBC and 2015 IRC include references to the latest International Energy Conservation Codes (IBC Chapter 13; IRC Chapter 11). The Supervisors also approved to continue the use of contract building inspectors. Madison County is one of the fastest growing counties in the state. New homeowners will be able to receive the benefits of greater home energy efficiency with these new codes.

Mississippi Power Hosts [Media Tour](#) of 52MW Sumrall Solar Project

Construction begin in October on a new 52-megawatt (MW), 590-acre solar facility site on Mississippi 42 in Sumrall. Scottsdale, Arizona-based contractor DEPCOM Power expects to have the project operational by this summer. Over 215,000 polycrystalline solar panels, which take up 392 acres of the facility, will provide enough electricity to power approximately 8,000 homes. The project owner, D.E. Shaw Investments, has a 25-year power purchase agreement with Mississippi Power.

Mississippi Power's other two solar projects include a 50 MW facility in Hattiesburg and a 3.29 MW project in Gulfport. That gives Mississippi Power access to a little over 105 MW of solar.

Want to Attract New Jobs to Mississippi? Unleash Renewable Energy!

The growth of state policies and regulations that help enable corporations to procure renewable energy – or remove barriers to doing so – is a key factor fueling investments and creating jobs. States that limit customer choice can see higher renewable energy costs, making their markets less attractive which can directly influence where corporations choose to invest. The [Corporate Clean Energy Procurement Index: State Leadership & Rankings](#) ranks all 50 U.S. states based upon the ease with which companies can procure renewable energy for their operations located within each state. After all factors were considered, Mississippi was ranked 34th in the nation. On the whole, the Southeast region trailed all other regions in the U.S.

CLEARResult Seeking Energy Efficiency Professionals in Jackson Area

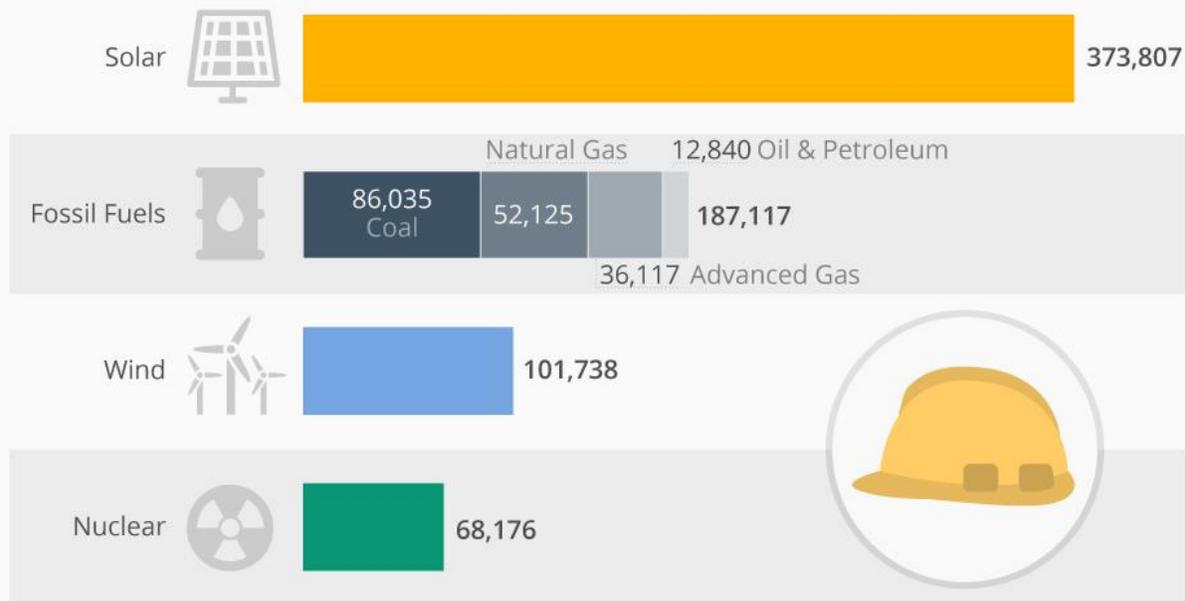
CLEARResult helps utilities, businesses and individuals make the wise use of energy a way of life. They are the Administrator of Entergy's Energy Efficiency Programs. CLEARResult is seeking an [Energy Efficiency Market Outreach Specialist](#) and a [Commercial Energy Auditor](#). Each is a full-time position based out of the Jackson area. Follow the links if you are interested.

Solar Is the Largest Electric Power Generation Employer in U.S.

According to a [new study](#) from the US DoE, the solar industry accounts for the largest share of workers in the Electric Power Generation sector. Solar technologies, both PV and CSP, employ almost 374,000 people accounting for 43% of the electric power generation workforce. The report finds that the Traditional Energy and Energy Efficiency sectors today employ approximately 6.4 million Americans. Of the total, 2.2 million people work in energy efficiency-related industries.

Solar Power Employs More Than Coal, Oil & Gas Combined

Employment in energy generation by source in the U.S. in 2016



@StatistaCharts Source: U.S. Department of Energy

Forbes **statista**

[Mississippi](#) has 26,660 Traditional Energy workers statewide. 12,266 of these workers are in the Fuels sector, 10,935 work in Transmission, Wholesale Distribution, and Storage, and 3,459 workers are employed in Electric Power Generation. Mississippi has an additional 15,039 jobs in Energy Efficiency.

2017 United States Solar Power Rankings

SolarPowerRocks.com released its [2017 rankings](#) of all 50 states (and the District of Columbia) based on their “solar-friendliness” with Massachusetts coming in first and **Mississippi coming in last**. The ranking is based on 12 factors in three categories: policy, incentives, and outcome measurements (system payback time and rate of return). **Unfortunately, Mississippi has [dropped to dead last](#) in the rankings.** Much of this is attributed to the uncertainty and ineffectiveness of TVA solar programs offered through electric cooperatives. Also, the ranking evaluators have not gotten a clear signal whether the recent MPSC Net Metering and Interconnection Rules will facilitate opportunity and growth in the state. Despite the less than appealing ranking, Solar Power Rocks has designed [a guide](#) to the complicated and sometimes confusing process of installing solar panels on a home in Mississippi.

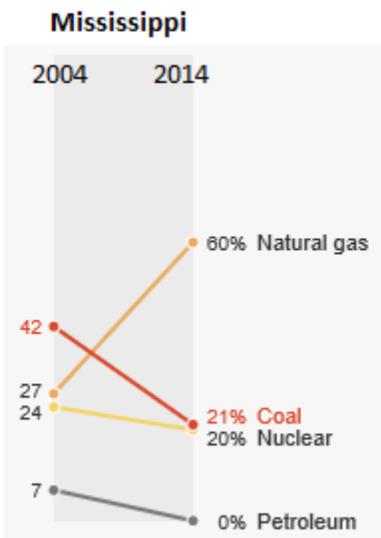
Mapping how the United States Generates its Electricity

There are more than [3,300 power utilities](#) and about [7,700 power plants](#) that produce and distribute electricity to homes, businesses and other consumers. That electricity travels through more than [160,000 miles of high-voltage electric transmission lines](#) that reach into every nook and cranny of the country.

Coal and natural gas are the most common sources for electricity in the country, but coal represents a declining share. **In Mississippi**, coal accounts for 11% of generated electricity while natural gas accounts for a whopping 69% - ranking 4th in the nation in percentage of electricity from natural gas. Nuclear accounts for 18% while other resources account for 2%. The Washington Post has created an [interactive graph](#) that shows the source of electricity generation in each state in 2015. Maps for each generation resource is also provided.

How has Electricity Generation Portfolio Changed over last 10 years?

In 40 states, use of coal as a power source (as a share of all power sources) has dropped since 2004. Many of these states are increasingly relying on natural gas instead. **Mississippi** is no exception. [Check out how the U.S. and the 50 states generate electric power.](#)



Enviva Launches Wood Supply Tracking System

Enviva, with wood pellet production facilities in Amory and Wiggins, has launched the Track & Trace (T&T) program. T&T is a system that enables Enviva to track every truckload of wood the company procures from the forest back to its source, providing a detailed understanding of the characteristics of the wood the company uses. Before selling wood to Enviva, a supplier must provide a range of detailed data on the specific forest tract being considered for harvest. T&T data are presented via a [Forest Trend Map](#) and an [Enviva Wood Supply Map](#). Learn more [here](#).

Kemper Update

The [November 2016 Independent Monitor report](#) and [December 2016 IM Report](#) is now online for review. Also, Mississippi Power indicated in a recent U.S. Securities and Exchange Commission filing that full commercial operation will not likely occur until January 31. The facility is still undergoing testing start-up and commissioning activities. The new target date has now officially pushed the cost of the Kemper County power plant to [over \\$7 billion](#). If you are customer of MS Power, you can still request to [become an intervener](#) in the Kemper Discovery Docket and possibly future prudency filings.

Shareholder lawsuit: The [complaint](#) alleges Southern Co. defendants “made false and misleading statements and/or failed to disclose adverse information regarding the progress of the Kemper Plant, assuring investors that the project would be completed by the critical May 2014 deadline, even when cost overruns and other delays began to materialize.” Learn more in the [Sun Herald article](#).

Also, bipartisan proposals to extend tax breaks for carbon-capture facilities such as Kemper have been introduced in Congress. They could provide additional revenue of as much as \$4.5 billion to Southern, according to a [study](#) by Taxpayers for Common Sense and Friends of the Earth.

What is the future of Integrated Gasification Combined Cycle with Carbon Capture technology (used at Kemper) if the Trump Administration rolls back greenhouse gas regulations? [Bloomberg Business](#) looks at the possibilities.

Southern Company's "Leading the Way" Report Available

Southern Company has posted “**What does the future of energy look like? See how Southern Company is leading the way.**” on its website. The *Leading The Way* report answers the question of what the future of energy looks like from the Southern Company perspective and describes its efforts to prepare for that future. You can reach the report through the following link: <http://www.southernco.com/about-us/pdfs/LeadingTheWay.pdf>.

GreenTech Auto Closes Mississippi factory

GreenTech Automotive opened a plant in Mississippi in 2014, first saying it would manufacture a small, two-seat electric vehicle called the MyCar. But the harsh realities of the auto industry as well as some questionable immigration motives proved too much and GreenTech is shutting down its factory, located in Tunica County, and the [company may soon disappear for good](#). GreenTech reportedly owes the state of Mississippi \$2.85 million.

Regional Issues

The Clean Energy Policy Guide for State Legislatures

States have led the shift to cleaner energy and that trend is likely to continue. The Center for the New Energy Economy (CNEE) is pleased to announce our newest resource for state policymakers, [The Clean Energy Policy Guide for State Legislatures](#). Policies are organized by chapters including energy efficiency, infrastructure, transportation, renewable energy, financing and emissions policies. For each policy, there is a description of the issue, key policy components, links to established state programs and resources for more information.

Maryland Farmer to Burn Poultry Litter to Heat Poultry Houses

Murphy Farms in Dorchester County has installed an alternative technology to convert poultry litter to heat and power. The farm, which was recently featured on [MPT](#), in partnership with Biomass Heating Solutions USA (BHSL) is using fluidized bed combustion to burn poultry litter and heat water which in turn provides heat to the poultry houses. Future plans call for power to be sold back to grid. This system will help to solve energy cost and nutrient management challenges in the region.

Georgia Power Plans to Add 1,600 More Megawatts of Solar by 2021

Georgia Power now has 846 MW of solar energy resources in operation. Through implementation of the Renewable Energy Development Initiative (REDI), approved by the Georgia Public Service Commission in 2016, as well as other solar projects and programs, the company expects to add up to 1,600 MW of additional renewable energy by 2021. See the GA Power [news release](#).

Oregon School Installs Biomass Heating System

When a school in Burns, Oregon needed to replace an aging boiler, community leaders discovered that a biomass district heating system would dramatically lower their energy costs and help keep local forests healthy. Biomass energy is a perfect fit for their rural community. Close to the forest with a cold climate, they are used to working with wood. The system burns clean, requires limited maintenance and runs on plentiful locally-produced wood chips - a perfect solution! See the video created by the Oregon Statewide Wood Energy Team, Sustainable Northwest and the Oregon Department of Forestry with funding support from the USDA Forest Service: <https://www.youtube.com/watch?v=r2YioqekvTc>.

Southeast's First Large-Scale Wind Farm Goes Online in North Carolina

Last month, this Update highlighted the fact that in the Southeast more than 100 factories contribute to the manufacture of wind turbines used around the world and that the first U.S. offshore wind farm began generating electricity. The December 2016 Update also reported that the single largest solar farm east of the Mississippi River went live in North Carolina and a major biogas-to-energy project began construction in North Carolina.

This month, North Carolina gets credit for being home to the South's [first large-scale wind farm](#). At 208 MWs, Avangrid's 104 wind turbines scattered across 22,000 acres of farmland will generate enough power to supply the needs of 61,000 homes. However, the power will instead be used to power data centers for Amazon Web Services. Not only does this project provide cost-competitive power, the project is supported by rural communities. Avangrid is now the [largest taxpayer](#) by far in Perquimans County.

The taller turbines, like those at Avangrid's Amazon Wind Farm, can reach higher, stronger winds, and longer blades are able to harness gentler breezes and is opening up the South as the next frontier for wind energy development. In addition, wind energy development's price tag has plummeted 90% over the past 25 years.

NCSEA Releases 2016 North Carolina Clean Energy Industry Census

The [2016 North Carolina Clean Energy Industry Census](#) represents the ninth edition of this survey. NCSEA created the Census to help measure the impact of North Carolina's clean energy policies and identify where policies are or are not achieving the results policymakers, economic developers, and industry envisioned. Highlights of the report include: The clean energy industry now includes almost 1,000 firms, provides more than 34,000 full-time equivalent jobs (FTE), and generates \$6.4 billion in annual gross revenues. Jobs increased by 31% since the 2015 Census. The Energy Efficiency sector continued to dominate clean energy employment. However, North Carolina also showed an increase in development of Biomass/Biofuels projects.

Farmers and Warehouse Owners Go Solar in GA and FL

Mascot Pecan Shelling Co. in Glennville, GA, recently installed a [solar array system](#), an investment of more than \$2.5 million, which is projected to pay for itself in power savings and incentives in four to seven years. The project consists of 3,400 solar panels, each rated 320 watts, on six acres adjacent to the processing plant. For the shelling company, the energy required to shell, cool and freeze its pecans was more than 2.2 million kilowatt hours and a \$260,000 power bill in 2016. With the 1.088-megawatt solar array, Mascot expects to save over \$200,000 every year. Mascot was also able to take advantage of a federal investment tax credit, accelerated depreciation and a bonus depreciation, and have applied for a USDA REAP grant.

J.J. Taylor Distributing of Fort Myers, FL, just completed the [1.1 megawatt grid](#) atop its 201,000-square-foot building. The 3,333 panels cut the energy needs for the warehouse by 80 percent just as Florida Power and Light is raising rates by about 31 cents a day for the average customer. But J.J. Taylor Distributing is not your average customer. At full capacity, the warehouse could hold as many as 15.6 million cans of beer! The company plans to use part of the savings to add more jobs at the facility. Raise your pints to that!!

Texas Sets New All-Time Wind Energy Record

Wind provided 40% of Texas's electricity for 17 straight hours one windy day in December. 13.9 gigawatts of power were generated – enough electricity to power over 230 million conventional 60 watt incandescent light bulbs, or more than 11 times the 1.21 gigawatts that Doc Brown's time machine needed in Back to the Future. In other words, a heck of a lot of power. **Mississippi** could tap into this power source if the Southern Cross Transmission project is built.

How Much Electricity Does a Solar Panel Produce?

As renewable energy becomes more cost-competitive and interconnection procedures become better understood, folks begin to ask questions like the one above. They also ask other questions like: How big are solar panels? How efficient are solar panels? How much energy does a solar panel produce per square foot? How many solar panels are needed to power an average house? To help answer these questions and provide a solar panel output calculator, [Solar Power Rocks has updated graphics and text](#) to help you learn all you wanted to know about solar energy.

National Issues

New Study on the Costs, Benefits, and Impacts of State RPS Programs

Lawrence Berkeley National Lab (LBNL) and the National Renewable Energy Laboratory (NREL) is pleased to announce a new study, [A Prospective Analysis of the Costs, Benefits, and Impacts of U.S. Renewable Portfolio Standards](#). This new report evaluates RPS policies prospectively, under both a continuation of existing policies as well as possible expansions. The report, along with an accompanying fact-sheet, can be downloaded [here](#).

New Study Puts the Potential Rate Impacts of Distributed Solar into Context

Concerns about the potential impacts of net-metered PV on retail electricity prices have led to an array of proposals to reform rate structures and net metering rules. These proposals have typically been met with a great deal of contention and often absorb substantial time and administrative resources,

potentially at the expense of other issues that may ultimately have greater impact on utility ratepayers – such as expenditures on power plants. The most basic conclusion of this [paper](#) is that, in most cases, the effects of distributed solar on retail electricity prices are, and will continue to be, quite small compared to many other electricity-price drivers.

USDA Analysis Reaffirms Ethanol Benefits

USDA's new report, [A Life-Cycle Analysis of the Greenhouse Gas Emissions of Corn-Based Ethanol](#), shows that greenhouse gas (GHG) emissions associated with corn-based ethanol in the United States are about 43 percent lower than gasoline when measured on an energy equivalent basis. This is a big number (and a big deal) – and the reduction percentage will get even bigger over the next few years, driven by ongoing improvements in ethanol production and improved land management practices. Furthermore, the UN's Food and Agriculture Organization (FAO) released its latest [food price index](#) showing that world food prices fell for a fifth straight year in 2016, further dispelling the "food-versus-fuel" myth that would have us believe that increased ethanol production drives up food prices.

Clean Energy Provides Energy Security on Military Bases

Building out local microgrids, increasing the use of renewable power and making energy efficiency improvements can boost base energy reliability and save taxpayer money, according to the [study *Power Begins at Home: Assured Energy for U.S. Military Bases*](#). New energy efficiency measures alone could save the Department of Defense (DoD) \$1 billion a year, the report found. DoD's fixed installations, which contain 284,000 buildings and 2 billion square feet of space, consumed 1 percent of the total electric energy consumed in the U.S. in 2015, at a cost of almost \$4 billion. Ensuring an uninterrupted supply of power has become increasingly important to the Pentagon.

Brief Analyzes Cost of Saving Electricity through Energy Efficiency

States, customers and utilities increasingly rely on energy efficiency as a resource and as a means of reducing costs. However, it is important to track and understand in the cost of saving electricity from efficiency programs in light of low natural gas prices, improved generation in NGCC, and declining costs of wind and solar. Examining data from 78 program administrators in 36 states from 2009 to 2013, the report authors found that the cost to efficiency program administrators of saving a kilowatt-hour (kWh) averaged \$0.028/kWh over the five year period. This is about one-half to one-third the cost of new electricity generation resource options in the [same time period](#). The report can be downloaded [here](#).

Natural Gas and Wind are the Lowest-Cost Generation Technologies

Natural gas and wind are the lowest-cost technology options for new electricity generation across much of the U.S. when cost, public health impacts and environmental effects are considered, according to new research released by The University of Texas at Austin. Researchers assessed multiple generation technologies including coal, natural gas, solar, wind and nuclear. Their findings are depicted in a series of maps illustrating the cost of each generation technology on a county-by-county basis. [See the full report to review the maps.](#)

Raymond James Releases its Clean Tech Primer 2017

The complexity of investing in renewable energy and clean technology is the wide range of distinct markets: some very well-known and others more “below-the-radar”. Raymond James examines ten areas of “Clean Tech” and offers a practical review of opportunities and the key themes to watch in each sector. The sectors are solar, wind, biopower, bioindustrials, natural gas, electric vehicles, fuel cells, power storage, smart grid and water technology. Check out the [Clean Tech Primer 2017](#).

DOE’s Quadrennial Energy Review Examines Electricity System

The latest Dept. of Energy’s QER report on the country’s energy system is looking to shine a spotlight on vulnerabilities and threats to the electricity grid. The nearly 500-page [report](#) is the second piece of the QER and provides an opportunity for federal officials to take deep dives into energy policy issues and provide recommendations to lawmakers and regulators. The report makes 71 recommendations to policymakers, including declaring that the electric grid is a national security asset, boosting federal support to state efforts to reduce electricity demand and providing grants for small utilities to increase grid security.

Record Warmth in 2016; Third Year in a Row

The 2016 global temperature was the highest on record since record keeping began in 1880, according to NOAA, NASA, and the World Meteorological Organization. The global average temperature last year was 1.69 Fahrenheit (0.94 Celsius) above the 20th century average, and 0.07 degrees F (0.04 C) warmer than in 2015, the last record-setting year. However, NOAA’s National Center for Environmental Information has found the United States climate in 2016 was the second-warmest on record — just behind 2012 in data that goes back 122 years. Above-average temperatures were recorded in all of the 48 contiguous states and Alaska. According to [NOAA](#), the average temperature in the lower 48 states for 2016 was 54.9 degrees Fahrenheit — 2.9 degrees warmer than the long-term average in the 20th century. So, does this mean anything scientifically? In addition, check out the [2016 Annual Climate Report](#) for the Southeast region. Also, noted are the [top 10 weather and climate extremes](#) that occurred across the Southeast in 2016. You can also view the [Mississippi summary](#) of observed and projected climate data.

Carbon Emissions in 2016 Expected to be Lowest Since 1992

Carbon emissions from U.S energy sources in 2016 are expected to be the lowest in nearly 25 years, according to an analysis from the U.S. Department of Energy. The analysis attributes the drop to mild weather, use of biofuels, and the shift from coal to cleaner-burning natural gas and carbon-free renewable energy in U.S. power production. 2016 carbon emissions are estimated to be 5,179 million metric tons – the lowest since 1992.