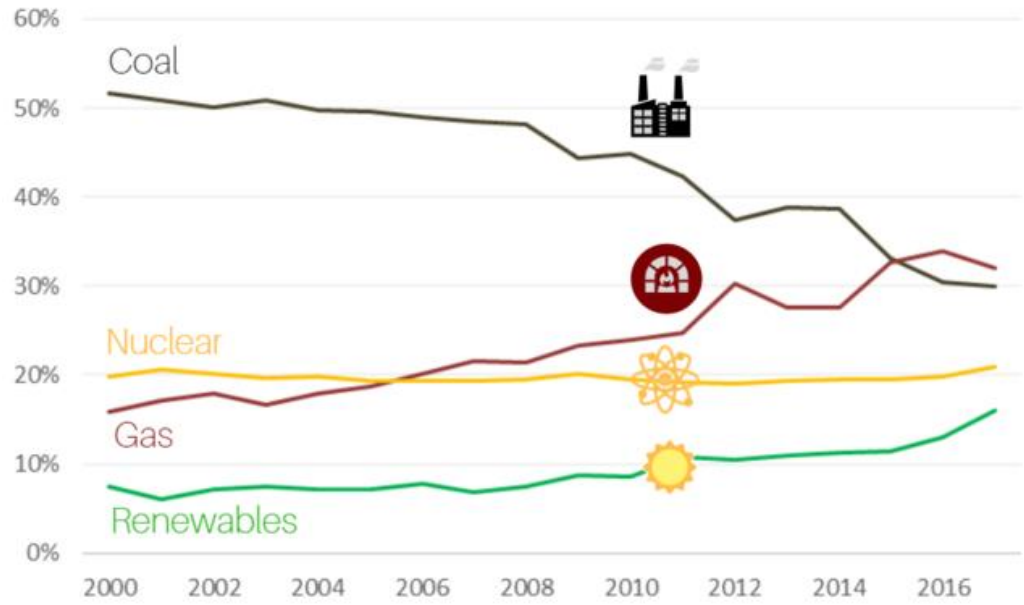
Mississippi Renewable Energy and Energy Efficiency Update

EIA Data Looks at Solar and Wind; EPA Looks at Emissions

As part of its Electric Power Monthly series, the U.S. Energy Information Administration (EIA) released its year-end 2017 energy figures, detailing electricity production, use, and costs at a state-level. Last month, the Update compared average annual energy costs and energy use across states. This month, the Update will look at solar, wind and emissions.

In 2017, renewables—such as hydropower, wind, solar, and geothermal energy—made up 16 percent of the electricity powering the nation's homes and businesses. While this is positive progress, it represents the tip of the iceberg for potential renewable energy generation.



U.S. Electricity Mix: 2000-2017

Solar: The U.S. saw less solar growth than it did during a record-breaking 2016 and the solar industry reported its first year-over-year job loss in the face of solar tariff threats and other challenges. However, solar energy still enjoyed lots of bright spots in 2017 – especially in **Mississippi!** In 2016, **Mississippi** was in the bottom five in solar capacity but the industry saw remarkable growth in 2017. **Mississippi** added over 160 MW of solar—or enough to power 25,000 homes every year. That is a 25-fold increase in the state's solar capacity. Most of the increase was from utility-scale solar projects.

Fastest Growth		
Rank		% solar growth year-over-year
#1	Mississippi	2,278%
#2	South Carolina	439%
#3	Oklahoma	382%
#4	Montana	250%
#5	Virginia	212%

However, Mississippi has a long, long way to go before it can be ranked as a top solar state:

Top Solar States			Largest Portion of Power from Solar		
Rank		Total Capacity (Large + Small Scale) (MW)	Rank		% of in-state utility-scale generation
#1	California	17,278	#1	California	10%
#2	North Carolina	3,347	#2	Nevada	10%
#3	Arizona	2,987	#3	Vermont	6%
#4	Nevada	2,082	#4	Utah	5%
#5	New Jersey	1,926	#5	North Carolina	4%

Wind: Texas hosts more than a quarter of all wind capacity in the country, and the oil- and gas-rich state expects to add even more wind farms over the next four years. (In fact, Texas now has more wind power capacity than coal-fired capacity in the state). **Mississippi** is tied for last with other states that have no installed wind energy production capacity. Below are the top five states, as of the end of 2017, both in terms of total wind power and greatest proportion of power from wind.

Most Wind Power			Largest Portion of Power from Wind		
Rank		Total Capacity (MW)	Rank		% of in-state utility-scale generation
#1	Texas	22,560	#1	Iowa	37%
#2	Iowa	6,969	#2	Kansas	36%
#3	Oklahoma	6,898	#3	Oklahoma	32%
#4	California	5,851	#4	South Dakota	30%
#5	Kansas	5,118	#5	North Dakota	27%

Emissions: In 2016, emissions from the power sector fell to 25% below 2005 levels (the highest emissions year for the U.S. was in 2007). In 2017, emissions have fallen by another 4%, down to 28% below 2005 levels. Electric-sector carbon emissions have not been this low since 1987. **Mississippi's** power sector emissions fell 0.09% in 2017.

New Map of the Solar Workforce

The new map is a follow up to the *National Solar Jobs Census 2017* and provides a geographic breakdown of America's 250,271 solar workers. It also includes updated data on solar jobs in all 50 states - including **Mississippi**. **Mississippi** now has over 900 solar workers, with high potential for future growth if supportive policies are in place.

The 2018 Community Power State Scorecard

Each year, the Institute for Local Self-Reliance provides a score for each state's energy policies based on how they help or hinder local clean energy adoption. In 2018, 21 states had a failing grade (including **Mississippi**), 17 were mediocre, 11 had a passing grade, and just 2 excelled at enabling residents to act individually and collectively. Each state was scored on range of policies including net metering, interconnection, PACE programs, residential building codes, community choice, RPS, etc. **Mississippi** has a Community Power score of 7 out of 36. The state offers a distributed generation compensation

program (a.k.a "net metering" per the MPSC) and has above average interconnection rules for distributed energy like rooftop solar, but that's it.

Energy-Efficient Schools Offer Multiple Benefits

The K-12 sector alone taxpayers spend $6 billion annually in the U.S. on energy bills, more than textbooks and computers combined, and second only to teacher and admin salaries. Reducing energy usage by 20% across the entire education sector would result in energy cost savings of more than $3.3 billion that K-12 schools, colleges, and universities can better spend on educating students. Energy efficient design and construction provides an opportunity to decrease spending on operations and maintenance of facilities, which can provide savings for reinvestment in the classroom. These design measures increase classroom comfort and learning conditions, allow savings to be reinvested into new curriculums, and give students first-hand exposure to energy efficiency technology in the classroom.

Mississippi Issues

MPSC Regular Meeting and Docket Call – March 6

The MPSC met on March 6, 2018, at 10 am in the MPSC Hearing Room. No items of interest to energy and consumer stakeholders were brought forward.

However in a March 15 special meeting, the MPSC took action in **Docket No. 2018-AD-12** that considers the implications the federal Tax Cuts and Jobs Act would have on rates. Specifically, the MPSC unanimously adopted an Order that requires the major regulated electric and natural gas utilities to file additional information on the impacts that the tax law will have on rates. The Order could eventually apply to all for-profit utilities in the state.

Next General Meeting of the MPSC will take place on April 3, 2018, at 10 am in the Woolfolk Building.

Kemper Update – Order on Settlement Stipulation

Docket No. 2017-AD- 112, Mississippi Power Company - Encouraging Stipulation of Matters in Connection with the Kemper County IGCC Project: The MPSC unanimously approved the Rate Stipulation in January. However, the MPSC met on March 15 to consider the revised compliance filings under this Rate Stipulation Docket developed as a remedy to the Kemper Project situation. While this action could have been handled by the Executive Secretary, the Commissioners met due to the profile of the case. The MPSC unanimously accepted MS Power's Revised Compliance Filing.

Register for the enHance Workshop Scheduled for April 5

The enHance environmental stewardship workshop and awards luncheon in downtown Jackson will be held Thursday, April 5, 2018, at the Jackson Marriott Downtown, beginning at 8:00 a.m. This annual event is sponsored by MDEQ and the Mississippi Manufacturers Association, and this year's workshop will celebrate the tenth anniversary of the program. The workshop will provide presentations and case studies on environmental stewardship, lean manufacturing, waste reduction and energy efficiency. Register **here** for the workshop. More information about the program is available at www.enhance.ms.

MDEQ to Host VW Trust Funds Public Meetings in April

The Mississippi Department of Environmental Quality (MDEQ) has scheduled three meetings to garner input from the public on the state's proposed mitigation plan that will spend funds allocated to the state from the Volkswagen Diesel Settlement.

•April 11 at 1:30 p.m. in MDEQ's Commission Hearing Room located at 515 East Amite Street, Jackson, 39201.
•April 18 at 1:30 p.m. at the Batesville Public Library, 206 Highway 51 North, Batesville, 38606.
•April 24 at 1:30 p.m. in the Public Meeting Room of the Bolton State Office Building, 1141 Bayview Avenue, Biloxi, 39530.

MDEQ will administer $9,874,414 to implement air emissions reduction projects. Learn more at https://www.mdeq.ms.gov/air/vw-mitigation-trust/.

Mississippi Legislature Update

The Legislature adjourned, or Sine Die, on Wed. March 28. We tracked bills related to clean energy market development and regulatory matters. Bills in **red** died. While the Legislature failed to address distributed generation, building energy codes and solar-professional certifications, consumer protection potentially took a step backwards. So, do our elected officials answer to the voters or to corporations?

House Bill 377 - Bonds; authorize issuance to assist Sunflower County in researching wind energy as a viable source of power for the county (Died in Committee)
House Bill 745 - Residential builders/remodelers and residential solar contractors; revise licensing law (Died in Committee)
House Bill 768 - "Distributed Energy Resource Program" and "Net Energy Metering Program"; create (Died in Committee)
House Bill 882 - Public Service Commission; extend repealers on its creation and authority to hire attorneys for certain proceedings (Passed out of Committee; Passed House; Transferred to Senate; Died in Committee)
House Bill 1108 - Office of Residential and Small Business Advocate; establish (Died in Committee)
House Bill 1152 - Residential minimum building standards; adopt statewide (Passed out of Committee as Amended). The amendments to the bill make adoption of building standards voluntary. (Died on House Calendar)
House Bill 1179 - Public Utilities Staff; limit powers to supporting PSC and PSC staff (Died in Committee)
Senate Bill 2030 - Income and franchise tax; allow refundable credit for costs of purchasing/installing solar energy system or energy efficiency services (Died in Committee)
Senate Bill 2295 - Public Service Commission; extend repealers on its creation and authority to hire attorneys for certain proceedings (Passed out of Energy Committee as Amended). The amendments to the bill would restrict who could challenge utility filings and alter the process by which entities can engage in proceedings. (Passed Senate; Transferred to House; Passed House as Amended; Returned for Concurrence; Passed and sent to Governor; Signed by Governor on March 19). Consumer protection in Mississippi took another hit with the signing of this bill as amended.
Senate Bill 2562 - Office of Residential and Small Business Advocate; establish (Died in Committee)
Senate Bill 2572 - Residential builders/remodelers and residential solar contractors; revise licensing law (Passed out of Committee as Amended; Passed Senate; Transferred to House; Passed Committee as Amended; Failed on House Floor Vote of 20-94)
Senate Bill 2838 - Public Service Commission; increase membership of and establish authority over Public Utilities Staff (Died in Committee)

Cooperative Energy Dedicates New Solar Farm near Sumrall, MS

On March 7, Cooperative Energy, Origis Energy and officials cut the ribbon to dedicate the 540-acre, 52-MW solar farm consisting of over 200,000 panels capable of generating enough electricity to supply up to 11,400 families with power. Origis Energy owns and operates the facility. Cooperative Energy will purchase the electricity generated and distribute it to its members. The solar farm actually went online in December. More than 700 people were employed during the construction phase of the project.

Leasing Your Land for Solar? Things You Need to Know

Have you been approached with an offer to lease all or part of your land for the development of solar power-generating facilities? The deals always sound great and can be a reliable source of increased revenues. But few landowners are familiar with solar leases and the unanticipated impact they can have. Review this commentary on solar leases that can help you protect your interests and property.

Stion Ordered to Pay up

Mississippi's state auditor is formally demanding that Stion, a failed solar panel maker that had a manufacturing facility in Hattiesburg, pay nearly $93 million that he says is owed to state and local governments. The company borrowed $74.8 million from Mississippi taxpayers, failed to pay $2.1 million in reduced property taxes to Hattiesburg and Forrest County, and owes $16 million in interest on the state loan and property tax payments. Stion never lived up to its job creation and investment commitments as promised to former Gov. Barbour and his MDA leaders.

Prepare Your Home for Summertime Temps

If you are an Entergy customer, sign up for the Residential Energy Audit and Direct Install (READI) Program. A specially trained energy efficiency expert will conduct a walk-through inspection of your home's energy systems and then recommend ways you can reduce energy use, improve comfort and save money. Plus, the expert may install energy-saving products such as energy-efficient light bulbs, an LED night light or a power saving strip – all at no additional cost to you. Schedule your READI appointment today by visiting **entergysolutionsms.com/readi** or by calling **844-523-9980.**

Regional Issues

TVA Proposes to Increase Fixed Monthly Charges

The Tennessee Valley Authority is proposing to revamp the way it prices its electricity by adding a grid access charge to monthly power bills each month and cutting the variable price of power. While the shift creates no net change in revenues for TVA, the change could impact the adoption of renewable energy and energy efficiency as the incentive to invest in these technologies are diminished as customers are forced to pay a higher fixed amount each month. Futhermore, TVA said that each alternative has the potential to increase monthly bills for "a majority of residential customers." TVA will accept comments on the changes through April 9 via email or mail to Matthew Higdon at mshigdon@tva.gov or 400 West Summit Hill Drive, WT 11D, Knoxville, TN, 37902.

Louisiana PSC to Investigate Emergency Generation Alerts During January Cold

The Louisiana PSC has opened a docket and scheduled a Technical Conference to investigate issues that led to the MISO Maximum Generation Event (MaxGen Event) during the January 17-18 freezing temps episode. Specifically, the Tech Conf will examine the circumstances surrounding the cold weather event and management of electricity generation resources, the status of transmission systems, the causes that led to the utilization of emergency procedures, the reasons that certain generation and transmission assets were not available, and the magnitude of any dirsuptions in service. The Tech Conf will be held on **April 4 at 1 pm** in Baton Rouge. See the complete Proceeding and Tech Conf Notice.

Georgia Power On Track To Attain Renewable Energy Goal Years Early

Georgia Power, which announced a goal of 1.6GW of renewable energy by 2021, is going to hit that goal with solar alone before the end of 2019. It currently has 970 MW of solar capacity online – with at least 649 MW of large scale project announcements in the last few months – for a total of 1,619 MW. Recently, solar projects of sizes 200 MW, 160 MW, and 150 MW were announced. These three solar plants hold 30-year power contracts averaging 3.6¢ per kilowatt-hour. Another 139 MW solar facility will be constructed near Robbins Air Force Base in joint effort with the military.

Virginia Legislation Opens Door to 5,500 MW of New Renewable Energy Development

New legislation (SB 966) signed by Gov. Northam is an omnibus energy bill that: finds 5,500 MW of solar and wind energy are in the public interest; expedites the state's renewable energy project regulatory approval process; includes provisions for energy efficiency and energy storage; ends a utility rate freeze that has been in effect since 2015; provides over $200 million in rate credits for customers; reviews rate every 3 years instead of every 2 years; allows billions of $ in grid modernization; and more.

ASU-N Adds Solar Power to Save Money

Arkansas State University-Newport energized 2,100 solar panels on its campus recently. The solar array is the only one of its kind at an Arkansas community college. The electricity generated from the solar array will create 50% of the energy needs for the campus and save the school $90,000 annually. The savings are passed to the students by avoiding any increases in tuition and fees. After the array is paid for and over the 30-year life of the system, the school hopes to generate up to $2.5 million in revenues.

Arkanasas Electric Cooperatives Add 100 MW Solar to Portfolio

Arkansas Electric Cooperative Corp. (AECC) of Little Rock has entered into a power purchase agreement (PPA) with Renewable Energy Systems Americas Inc. (RES) to purchase up to 100 MW AC of energy that will be produced by an 800-acre solar farm near Crossett, Ark., in 2021. The facility, consisting of over 362,000 solar panels, is expected to create as many as 175 jobs during the peak of construction. Renewables will make up 17% of AECC's generation portfolio.

Alabama's Largest Solar Farm Dedicated

On March 15, officials from state and local governments, Alabama Power and Walmart gathered to celebrate the successful launch of a 79.2 MW solar farm developed to help Walmart reach its corporate renewable energy goals. The project features 338,662 solar panels spread across 1,100 acres north of Auburn, AL. Houston-based Centaurus Renewable Energy owns the facility, and Alabama Power has a long-term power-purchase agreement with Centaurus to receive the energy and renewable energy certificates, most of which will be sold to Walmart. San Diego-based Clenera will manage and operate the facility. Walmart has set a goal to be supplied by 100 percent renewable energy.

North Carolina's Duke Energy's Newest Power Source: Hog Biogas

Duke Energy has begun generating electricity in eastern North Carolina with renewable natural gas (biogas) from five hog farms. Methane captured from the hog farms' manure systems is cleaned, compressed, inserted into a pipeline and shipped to Richmond County power plant where it is burned for electricity. Farmers are paid for each cubic foot of biogas produced.

National Issues

Q: Why Does Corporate America Love Renewable Energy?
A: The Next Generation of Consumers are Watching

And it just makes good business sense! If companies can save money, lock up energy prices for years to come, and get a public-relations boost, there's no reason not to invest in renewable energy. Companies are spending more and more on renewable energy as certain political forces seem to care less and less about it. So far in 2018, Fifth Third Bank, T-Mobile and AT&T have made significant renewable energy investments. Also, as part of the RE100 initiative, 128 companies around the world have committed to go "100% renewable" with their energy use.

Groups Urge Congress to Support Strong Farm Bill Energy Title Programs

More than 200 companies and trade associations today wrote House and Senate Agriculture Committee leaders, urging them "to reauthorize and maintain stable mandatory funding for energy title programs in the next farm bill reauthorization." The letter states, "For more than 15 years, the farm bill energy title programs have greatly assisted rural America in developing clean, renewable energy, biobased products, and making energy efficiency investments."

The EESI and the AgEC invite you listen in to a briefing examining the positive impact on rural America of the investments made through the Energy Title and how to make its suite of innovative programs even stronger. **Briefing is Wednesday, April 4, 2018, at 1 pm CT. Log at http://www.eesi.org/livecast.**

President Signs $1.3 Trillion Appropriations Bill for FY18

The Consolidated Appropriations Act of 2018 ensures federal funding through the current fiscal year ending Sept. 30 and averts another government shutdown. Although Trump threatened to veto the

measure, he signed it. 25x'25 offered this update. Got time on your hands? You can read the whole 2,232 page bill here.

Interactive Map of U.S. Power Plants Updated

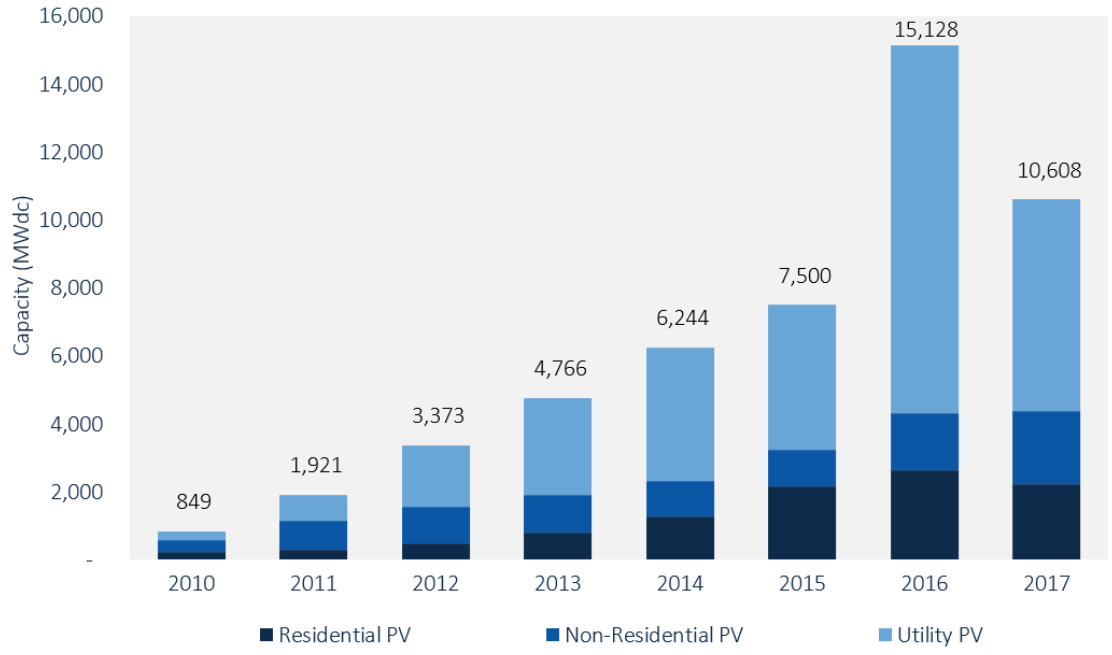
Synapse Energy Economics has developed a free-to-use interactive map of power plants in the United States using 2015 and 2016 data, as well as preliminary 2017 data from federal agencies. The file contains a user-friendly Google Earth map that displays information on location, fuel type, electric generation, generating capacity, ownership, and emissions for over 8,000 power plants across the country. Click HERE to request free access to the interactive map.

Indicators of the U.S. Biobased Economy Report Released

USDA's new report measures the substantial economic growth, job creation, and household income for the agricultural sector from biofuel and bioenergy production. Moreover, it indicates great potential for additional prosperity from future growth in renewable chemicals and biobased products. BIO estimates the U.S bioeconomy is valued at more than $205 billion and supports employment for 1.66 million U.S. workers. See the new report, "Indicators of the U.S. Biobased Economy."

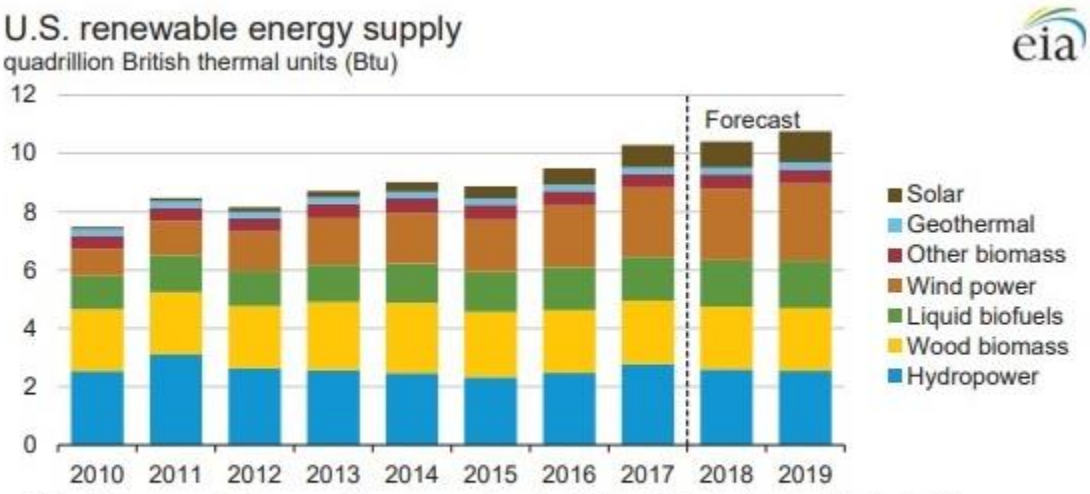
U.S. Solar Market Adds 10.6 GW of PV in 2017

The solar industry installed 10,600 MW of new PV capacity in 2017, led by strong growth in the corporate and community solar segments. While overall growth was down from the 15,000 MW installed in the record-shattering 2016, last year's capacity addition still represents 40% growth over 2015's installation total. Download the free executive summary for more insight. There is now 53,300 MW of solar installed across the U.S.



Renewable Electricity Generation Growth Continues

The U.S. Energy Information Administration has released the March edition of its Short-Term Energy Outlook, predicting that non-hydropower renewables will provide 10 % of U.S. electricity generation in 2018 and nearly 11% in 2019, up from less than 10% in 2017. Natural gas and coal generation fell 7.7% and 2.5%, respectively in 2017 while overall net electricity generation was down 1.5%.



Note: Hydropower excludes pumped storage generation. Liquid biofuels include ethanol and biodiesel. Other biomass includes municipal waste from biogenic sources, landfill gas, and other non-wood waste.

Source: Short-Term Energy Outlook, March 2018.