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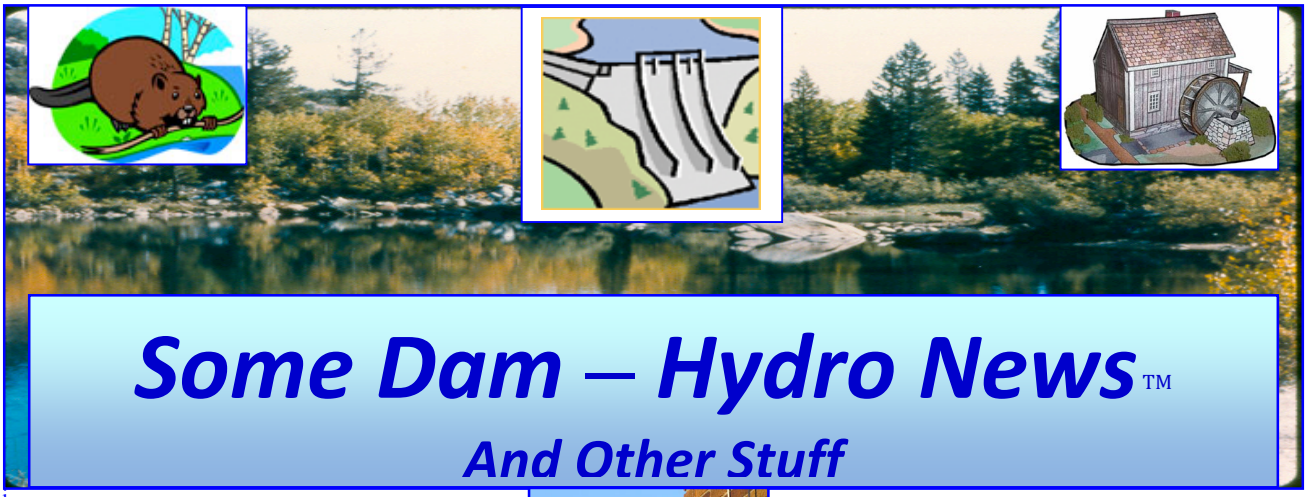


Some Dam – Hydro News™

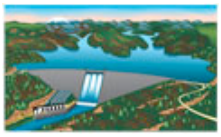
And Other Stuff

1

Quote of Note: *"You can't let praise or criticism get to you. It's a weakness to get caught up in either one."- John Wooden*

Some Dam - Hydro News → Newsletter Archive for Current and Back Issues and Search:
(Hold down Ctrl key when clicking on link) http://npdp.stanford.edu/ ' After clicking on link, scroll down. ***Under Partners/Newsletters on left click one of the links (Current issue or View Back Issues)***

"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: **2015 Rui Roboredo Madeira Portugal Red "Beyra Reserva"**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

(Goodbye dam.)

Crews begin demolishing nearly century-old dam in Flint

By The Associated Press, March 27th 2018, nbc25news.com

FLINT, Mich. (AP) - Crews are demolishing a nearly century-old dam as part of a broader project that's expected to change the landscape of the Flint River in downtown Flint. The Flint Journal reports demolition of the Hamilton Dam started Tuesday morning. The Genesee County Parks Commission says the work on the dam is expected to take several days.

The roughly $3.1 million demolition was initially scheduled for 2017, but it was moved back because the city needed to wait for Consumers Energy to finish dredging and capping a

section of the riverbed where manufactured gas was once produced. The Hamilton Dam was built in 1920. The demolition is part of the Flint Riverfront Restoration Project, which calls for adding water-based recreational opportunities, park improvements, ecosystem restoration and improved stormwater and flood control.

(The infrastructure is falling apart.)

Century-old locks and dams require urgent upgrades

By Rep. Rodney Davis, March 21, 2018, washingtontimes.com

When we talk about fixing the crumbling infrastructure in our country, many think about our roads and bridges, which absolutely need our attention and investment. But one of the lesser-known issues with our nation's infrastructure involves our vast network of rivers and waterways used to transport commodities across the country. Locks and dams on our inland waterways play an essential role in moving products produced in my district. The 13th Congressional District of Illinois is settled in the west, central part of the state, nestled up against where the Illinois River flows into the mighty Mississippi River.

In the mostly rural area, this location is key to the biggest economic driver of our region — agriculture. The same can be said of many congressional districts across the country. The United States leads the world in agricultural exports. In 2015, our ag exports totaled $133 billion, with the leading products being grains, feeds and soybeans. Eighty-one percent of those exports are waterborne and 60 percent move by barge along our inland waterways. Locks and dams are used by barges to carry commodities up and down rivers so they can be delivered to market or sent overseas. Unfortunately, many of these locks, including La Grange in Versailles and the Peoria Lock and Dam in Illinois, are almost 100 years old and are literally crumbling — leading to significant delays and increased maintenance costs. Just one lock closure shuts down the entire system and these closures have increased 700 percent over the last decade. All consumers rely on this system and these challenges hinder the nation's competitiveness and reduce market opportunities

(He's probably right! Using Sites res.as a reason doesn't make sense either when people are against it too.)

David Little: Raising Shasta Dam? It'll never happen

03/18/18, chicoer.com

Between Ben Carson's $31,000 dining room table and all the expensive travel for the president, his Cabinet members and their hangers-on, apparently there's money to burn in Washington. But spending $20 million to study a bad idea that'll never happen? That might be the most wasteful mistake yet. Millions of dollars have already been spent on studies about raising Shasta Dam by anywhere from 6.5 feet to 200 feet. The last option was wisely discounted early, but somehow the other possibilities refuse to die. Over the past 20 years, there have been countless studies and feasibility reports. Bureaucrats and consultants are getting rich endlessly studying this pipe dream. Now the federal government wants to allocate $20 million in next year's budget for ... more studies. The government prints its own money so apparently it's no concern of theirs, but taxpayers should be furious. Think of how that $20 million, and millions more already spent on this impractical idea, could be used for schools, roads or law enforcement.

The only people who think raising Shasta Dam is a good idea reside in Washington, D.C., or south of the delta. The water districts in the latter donate big money to the former. Therefore, it should be no surprise that the federal Bureau of Reclamation decided under President George W. Bush to advance the studies, decided under President Barack Obama that the idea wouldn't be feasible, then decided under President Donald Trump that the idea might not be so bad after all. They need to quit pandering to the water agencies. It doesn't matter who the president is. It's still a bad idea that stands no chance of happening. The concept of raising the dam by 18.5 feet would cost $1.3 billion. That used to sound like a lot of money, but now we know it's roughly the cost of rebuilding a spillway. We also know from the bullet train example that government estimates on project costs are never accurate and will only rise.

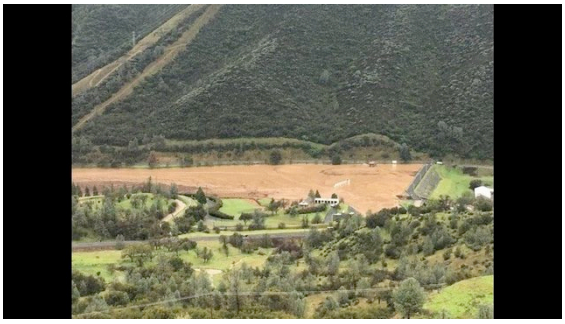
Why so expensive? Well, according to an earlier study (we have a lot of them in the files), to raise the dam by 18.5 feet, the government would need to replace five bridges, 34,000 feet of roadways, two railroad bridges, modify another railroad bridge, realign railroad tracks, and modify or replace nine marinas, six boat ramps, six resorts, 328 campsites, 12 miles of trails, two trailheads and relocate utilities. The problems don't end there. The McCloud River is protected by law, and raising the dam would inundate about three miles of it. It's prime trout habitat. It's also the subject of another significant roadblock — the Winnemem Wintu Tribe says sacred land would be submerged by a higher lake.

Then there's funding. Back in 2015 under the Obama administration, the Bureau of Reclamation said raising the dam might be feasible if the state and other water districts chipped in. San Joaquin Valley districts, of course, were all for it. But the state government quickly said no — and still does. The federal government is at war with the state government, so that's not likely to slow down anybody in Washington. But maybe the federal government will listen to Congressman Doug LaMalfa. He told the Redding Record Searchlight on Thursday that Sites Reservoir would be a better use of the 20 million federal dollars. The proposed reservoir at Sites, west of Maxwell, wouldn't dam any trout streams. It's an off-stream reservoir, filled with the same water — winter runoff — that would fill a larger Lake Shasta. According to a study completed 14 years ago, Sites could store three times more water than the increased capacity from a Shasta Dam that's 18.5 feet higher. Sites has been debated for roughly as long as raising Shasta Dam has been discussed. One thing hasn't changed: If we're going to increase water storage in California, one makes a whole lot more sense than the other. It's ridiculous the federal government can't figure that out.

(They gotta blame somebody.)

Experts fault SF water agency in scare at Moccasin Reservoir

By Michael Cabanatuan and Kurtis Alexander, March 24, 2018, sfchronicle.com



MOCCASIN, Tuolumne County, CA — San Francisco officials on Friday were still trying to figure out why one of their dams in the Sierra foothills was driven to the edge of failure a day earlier, but engineering experts were quick to suspect errors in management. The relatively small Moccasin Reservoir, which was built in 1930 and is used primarily to regulate stream flows between larger reservoirs, was overwhelmed with water and debris during Thursday's storms, and the dam began to leak. Though water levels eventually receded, it wasn't before evacuations were ordered downstream out of concern that the earthen structure wouldn't be able to hold back Moccasin Creek in the rural area west of Yosemite.

With improved weather Friday, officials with the San Francisco Public Utilities Commission drained the reservoir so inspectors could better assess what went wrong. They said their

preliminary examination had not yet revealed any major problems, saying only that heavy rain and high water had triggered the scare. Engineering experts, though, said dams like this one should be able to handle a surge of storm water. "The dam has worked for a very long time with no serious problem, yet they get this challenge and they don't have the knowledge to deal with it," said Robert Bea, a professor emeritus and engineering expert at UC Berkeley who has consulted on dozens of infrastructure failures. "It goes back to what I call the tragedy of neglect."
Dam experts who had not been to the site would not speculate on a specific cause. But they said problems like the one at 60-foot-tall Moccasin Dam generally occur when operators fail to anticipate high water and don't adjust reservoir levels accordingly or result from a structural problem that has gone unaddressed or was unknown.

In the case of Moccasin Reservoir, the threat emerged when water came in more quickly than it could be released, suggesting an issue with one of the outlets, experts said, possibly a compromised outflow chute or a blockage. Sometimes, typically, floating debris will clog up a spillway. That might have caused the water level to rise up," said Jay Lund, a professor of civil and environmental engineering at UC Davis and an expert on dams. "Once you start to see that, especially if you have debris clogging a spillway or an outlet structure, you want to get people out of there pretty quickly." Another possibility, experts said, was that the surging creek water was causing erosion to the base or sides of the reservoir, spawning the leaks and weakening the dam.

In controlling flows on Moccasin Creek, the reservoir's water is generally released through a main spillway, essentially a concrete channel through the dam to the creek below. There's also an unpaved, rock-lined backup spillway that carries water around the dam that was put to use Thursday. While threats of dam failures are rare, the age of California's water structures was one of the problems behind a similar scare last year at 50-year-old Oroville Dam. Federal inspectors concluded that outdated construction and design of the reservoir, on top of failures to maintain the facility, led to the partial collapse of two spillways. Fears that water would spill out of the dam uncontrollably prompted the temporary evacuation of nearly 200,000 people. State inspection reports on the Moccasin Reservoir over the past five years did not cite any major problems. The SFPUC, which manages the city-owned Hetch Hetchy water system, declined to provide requested records. A preliminary examination of the dam after the near failure by state regulators, SFPUC officials said, found that the foundation of the dam didn't shift during Thursday's deluge, a sign that suggested the toll on the reservoir and dam was relatively light. "Worst-case scenario, we have this event, it pushes the dam," said Chris Graham, water and power planning manager for the SFPUC, as he pointed toward one of the surveyors, who were working on land and by boat. "He's looking for even a millimeter in movement."

"Cleanup is going to be a mess," Graham added, "but structural damage seems low to me."
A fish hatchery remained under evacuation Friday, but site manager Justin Kroeze said there were likely big losses because of the high outflow from the dam. "As far as the fish, it doesn't look too good," he said. "But there might be some that are still swimming and could possibly be rescued. I'm hoping they can be rescued." The power of the creek flows this week was evident Friday morning, where water had lapped onto the road leading to the dam, flattening road markers and leaving a thin coat of slick mud. Piles of washed-up dirt and tree litter had amassed on the shores. Inmate fire crews were brought in to clear debris. "This was really a big (weather) event," said Steve Ritchie, the agency's assistant general manager for water. Between 9 a.m. and 3 p.m. Thursday, when the rush of water filled the reservoir, 2 to 4 inches of rain fell in the region, according to the National Weather Service. "That's pretty uncommon for that area," said Cory Mueller, a meteorologist with the weather service in Sacramento. "But as for the storm total, it's not completely uncommon." Ritchie maintained that his staff handled the situation as best it could. "Operationally, everyone did the right thing here and did it the right way," he said. "It's just that when you get a lot of extra water, things happen."

As a precaution, downstream evacuations remained in place Friday for a nearby campground and a handful of homes. A section of Highway 49, a major thoroughfare in California's Gold Country,

was still closed where creek water had flowed around the dam and scoured out the foundation beneath the road.
Even if the dam had failed, officials said, the damage would have been limited. The reservoir is one of the agency's smallest, with a capacity of less than 1,000 acre-feet of water, and the floodwaters would have been caught a mile downstream in the much larger Don Pedro Reservoir. Also, the area is sparsely populated. The small community of Moccasin, which is home to offices and employees of the SFPUC, sits above the dam and was never in danger. Signs posted throughout the company town Friday warned residents to avoid drinking tap water, which comes from the reservoir, without first boiling it. The added turbidity, officials said, posed a health risk. The situation is not expected to improve for at least a week. Moccasin Reservoir is one of many water facilities that helps move water from San Francisco's Hetch Hetchy Reservoir and other lakes in the high Sierra to the Bay Area. It also provides a small amount of power. The SFPUC supplies water to about 2.7 million customers. Service was not interrupted by the scare and is not expected to be affected by the cleanup.

(An argument against dam removal. Flood control saves millions of dollars.)

Letter: Dams critical for flood control

March 22, 2018, tri-cityherald.com

Re: Decision On Dam Removal Has Murray And Newhouse At Odds (Feb. 23): "Those who cannot remember the past are condemned to repeat it", George Santayana. I suggest both Dan Newhouse and Patty Murray consider looking up Vanport on their smart phones, and then ask Portland if it would like to comment. Once Oregon's second largest city, Vanport literally vanished in the Memorial Day flood of 1948 before our "flood control" dams tamed the Columbia and Snake rivers. They might also like to ask the ghosts of those whose homes once lined the Columbia River along the old US-12, now called Columbia Park Trail; or they might even consider reading about the folks who sat on top of the hill east of Richland High School to watch their homes and barns wash away by floods long ago. *JOHN M. NELSON, RICHLAND, WA*

(At least the water supply is safe. Dam removal by another name.)

New dam concept could attract more river recreation

By Joe Dexter, greensboro.com, 3/25/18

MADISON, VA — Town Manager Kevin Baughn has remained very busy over his first few months in his role as Madison's top administrator. While the town celebrates its 200th birthday, several projects are moving forward within city limits that will lead Madison to a brighter future. At the forefront is the replacement of the town's Dan River dam at the Lindsay Bridge access. Baughn said things are moving forward with the potential $1.6 million "cross-vane" concept dam that was introduced to the public in February by town officials and the U.S. Fish and Wildlife Service in mid-February. The project, which will cost significantly less than the $8 million projected for a new dam, would protect and lower the function of the town's 50-year-old deteriorating infrastructure. The dam replacement, if put in place, would be the only one of its kind in the state, according to Mayor David Myers. The cross vane method would open water flow for fish, as well as paddlers. To provide proper flow for water intake, five cross vanes made of natural granite boulders would be installed from the dam area, past Lindsay Bridge Road. Serving as the staircase will be giant boulders. In between the stairs will be step pools, where water can "step down" and allow fish to hop up through the steps and swim into the pool and rest. Baughn says

the potential dam is a win-win for the town, with hopes of $1.6 million dam concept being mostly paid for by outside sources.

Officials with the U.S. Fish and Wildlife Commission and other recreational enthusiasts have already taken preliminary precautions with the Clean Water Management Trust Fund and other public entities in an attempt to secure funding for the estimated $1.6 million project. The endgame for the federal wildlife group is an attempt to restore two water species that have been on the federal endangered list since the late 1980s. The Roanoke Logperch, a large darter that can grow up to six inches in length, has failed to reach ideal habitat locally, with upstream access being blocked by the Lindsay Bridge dam. "The species is unable to access approximately 50 miles of the Dan River, due to its inability to move into portions of the river above the dam," said Fish & Wildlife Ecologist Sara Ward. "Implementing fish-friendly options to secure the town's water supply that simultaneously allows for fish passage, would expand available habitat for this imperiled species and substantively improve its recovery potential." Environmental experts are also hoping for the return of the James River Spiny Mussel, a freshwater mussel species that now only exists in small headwater tributaries of the James River basin and Dan River Basin.
The project is still in the development stage, with early design, analysis and permitting of the preliminary concept taking upwards of the year.

Baughn projects that when the dam is completed in approximately two years, it will open up recreation opportunities for full and half-day floats down the Dan River, with the Lindsay Bridge access being open to river rats, with the ability of canoes and kayaks to flow through the new "cross-vane" setup. In the meantime the process of banding of the current structure is underway as a short-term fix while officials continue to evaluate the future concept plan.

Process to increase water capacity underway
Thanks to a partial-matching grant awarded to the town by the Golden Leaf Foundation in 2017, the town is moving forward with increasing water quality and quantity. Water officials hope the partial-matching grant will increase water capacity by 500,000 gallons a day. The $500,000 grant awarded in April, will go towards making improvements to the town's water treatment plant. Officials hope the grant will allow the town to sustain and provide residents and businesses a combined total of 2 million gallons of water per day. The project is slated to begin with plate settlers being installed in nearby river basins sometime between the end of May and early June. As for economic development, Baughn says that the town is working with the county economic development team to get businesses in several buildings, including the former K-Mart building. He added that the town is looking at improving downtown streetlights and signs in 2018. He added that the new U.S. 220/I-73 corridor projects to add business and population to the town. "I think we are set for growth here in Madison," Baughn said.

Hydro:

(Can't do it without hydro.)

Hamilton's energy is getting greener, and residents can benefit in solar power

By Mike Rutledge, Staff Writer, March 19, 2018, journal-news.com

HAMILTON - Butler County's largest city, already known for its green energy — with ownership of three hydroelectric generators on two rivers — now can become a bit greener with its electricity. City Council recently approved new regulations that will allow residents to use solar-energy panels and sell excess energy to the municipally owned electric utility. Hamilton utility staff also is working to make the same opportunity available for businesses. "We have not had any

applications at this point," said Nathan Perry, Hamilton's utility business manager. The allowance of solar-power sales to the city began with bills that were sent out on March 1.

The city will buy electricity from residents for 6 cents per kilowatt-hour. This year, it sells power to homeowners for 14.7 cents. Homes cannot completely disconnect from the city's electric system but must put electronics in place that detach their homes from the system during power failures. There is an 8.7-cent difference between those prices because the city has many investments, such as a power plant and power lines, costs of city electric workers and also costs associated with the city's utility debts that must be paid down. Jeff Gambrell, executive director of Hamilton! Civic Society Inc., praised the city for pursuing green energy.

The city of Hamilton owns three hydroelectric power plants, including the 105-megawatt Meldahl Hydroelectric Plant near Foster, Ky., where Brandon Blackburn, 17, fished during its 2016 dedication ceremony. Now, Hamilton is allowing residential customers to use solar power and sell it to the city's electric system. NICK

"The more our city strives to utilize alternative sources of energy and reduce our carbon emissions, the greater the quality of life we can expect in terms of environmental impact and reduction in energy costs," Gambrell said. But he wishes the city had gone further to help "residents of all socio-economic backgrounds the opportunity to own affordable, clean energy." "With more than 50 percent of the city's properties being rental housing, and a disproportionately high amount of these residing in Hamilton's underrepresented neighborhoods, we need to seek legislation that empowers these residents to purchase green energy in the form of community solar farms," he said. With such shared solar farms, several residents in an area could make small investments that pay off over time, he said, adding: "Allowing this practice to occur has the potential to lower the monthly cost of rent for low-income families and encourage them to invest in their own community. Otherwise, we may potentially risk widening the gap between our poorest and richest neighborhoods."

Based on 2017 rates, the city estimated a residential customer who pays $1,848 a year can have that bill reduced to $1,425 annually. The solar panels must serve only the needs of a single home and cannot be shared among customers. They also must meet city standards Perry said the city estimated solar power use could pay for itself in less than 20 years, including the costs of a second meter customers must buy and install to measure electricity that goes to the city. "Obviously, that is a very long pay-back period for the investment, but, yeah, you are getting your power from a very renewable resource," Perry said. He said the payback rate may improve over time as solar panels and other equipment drop in price and become more efficient. On the other hand, once such panels are installed, they tend to lose efficiency over time, he said.

Another factor that can improve payback time is the possibility homeowners can sell solar-renewable-energy credits into a marketplace, further lowering their rates. The city worked with Sawvel and Associates in Findlay, Ohio, to develop the rates. As the utilities embark on the solar-buying pilot program, officials so far are limiting the number of homes that can sell power to 1 percent of the prior year's peak-electric-demand period, which equates to about 260 homes. The city's 2016 peak electric demand was 143 megawatts. The peak usage last year was 131 megawatts. Customers interested in moving forward with solar, or with hopes of learning all the details, can call customer service at 513-785-7100 or 513-785-7202. "Now we're going through the process of developing the rules and regulations for businesses, as well as the rate for businesses," Perry said, noting there's no timeline for that. "We wanted to start with residential. It seems that that's where we were getting most of the requests from." Some 48.5 percent of Hamilton's electricity is created by renewable sources. Among the variety of sources, Hamilton's Meldahl plant on the Ohio River creates 29.7 percent, its Greenup plant, also on the Ohio,

creates 15.5 percent and Hamilton's small hydroelectric facility along the Great Miami River creates 0.5 percent.

(It's a tortuous path.)

Relicensing: Hydro projects face hurdles from agencies

By Christine Souza, March 21, 2018, agalert.com

The Turlock and Modesto irrigation districts, joint owners of the Don Pedro Hydroelectric Project on the Tuolumne River, are seeking to renew the hydroelectric facility's 50-year-old license to operate. Photo/Modesto Irrigation District and Turlock Irrigation District

The multipurpose aspect of many reservoir projects adds an extra layer of regulation to those projects--and gives government agencies and advocacy organizations additional opportunities to seek more water and other concessions from reservoir operators. That scenario is playing out in attempts to relicense California hydroelectric projects that also provide water supplies to farms, ranches and cities. For hydroelectric generation facilities to operate, owner-operators such as water districts and utility companies must periodically renew project licenses—a years-long process through the Federal Energy Regulatory Commission. FERC, an independent agency within the U.S. Department of Energy, has 116 active licenses for facilities and waterways in California. There are more than 20 pending project relicensings, including reservoirs on the Tuolumne, Merced, Feather, Yuba, Klamath, Eel and Russian rivers. The 50-year-old license for the Don Pedro Hydroelectric Project, located on the Tuolumne River and jointly owned by the Turlock Irrigation District and Modesto Irrigation District, expired in 2016. The project generates electricity for more than 200,000 customers and provides irrigation water for both districts. The districts have been working since 2011 to renew the license. In the interim, the facility operates on a year-to-year renewal basis.

After the districts submitted a final license application last October, government agencies and others have weighed in with their own recommendations—including requests for increased flows in the Tuolumne River. Those requests come in addition to a plan released in 2016 by the State Water Resources Control Board, which recommends increased flows of between 30 percent and 50 percent be dedicated to fish in the Tuolumne and other tributaries of the San Joaquin River during periods it considers key for at-risk native species. The final board proposal for the tributaries, described in a Substitute Environmental Document included in the board's Bay-Delta Water Quality Control Plan Update, is expected to be released any time. In addition, the state water board is one of a series of agencies that must review and approve the districts' FERC relicensing application. MID spokeswoman Samantha Wookey said the board and advocacy organizations, through the FERC process, "are able to give their own plan and state what they would like to see in the new license, and it is the same goals they are trying to accomplish through the Substitute Environmental Document; this is another avenue they can use to get those done." California Farm Bureau Federation Senior Counsel Chris Scheuring said the FERC process provides agencies and organizations with a means of requiring license holders to adopt added water requirements and to make investments in environmental, recreational and other improvements as a condition of updating a facility's license.

"Segments of the environmental community who don't like dams in the first place would like to restore unimpeded river flows for the sake of listed species, and the FERC relicensing provides them a hook to do that," Scheuring said. Restoring flow in the river can be in "direct opposition" to the purpose for which the reservoirs were built in the first place, he said, "which is storing water for human use during the growing season and during times of need when it is not raining." "Stored water offers the possibility of flexible management to meet all project purposes,

especially in dry years," Scheuring said, "and we think any FERC process that focuses on unimpeded flows misses the central point of storing water in a reservoir." Wookey said federal and state agencies and others have responded with added recommendations and conditions that, if implemented by FERC, would have "significant and lasting impacts to our customers, communities and local water supplies."

The districts had until last week to respond to non-flow aspects of the requests, and have until May 15 to respond to requests regarding river flow. "The increased flow recommendations are a direct hit on the water supply, so in years of drought we wouldn't be able to provide as much water," Wookey said. Fishery agencies' proposed flow requirements under the FERC relicensing would be similar to the impact of the state water board proposal, she said. Under either scenario, district agricultural water customers would have received no water during droughts similar to the 2014-15 year, she said. In responding to the districts' final FERC application, the National Marine Fisheries Service recommended a 218 percent increase in the average annual river flow released by the districts, and the U.S. Fish and Wildlife Service proposed an average annual flow that would represent a 243 percent increase to previous averages. Either scenario, Wookey said, would result in significant shortages for the districts. NMFS also recommended the districts conduct fish passage feasibility studies and pilot programs. The districts estimated construction of a fish-passage facility for the La Grange Dam downstream would cost approximately $100 million. As part of the FERC relicensing, applicants must propose measures for mitigating the project's effects on erosion, instream flow needs, downstream impacts, water quality, fisheries and more. Wookey said the districts have developed a management plan for the river that "offers a flow solution as well as several nonflow solutions."

The FERC process allows other agencies to assert "mandatory conditioning authority" on a relicensing application. A condition requested by the U.S. Bureau of Land Management would require the districts to construct a new whitewater rafting takeout facility at an estimated cost of more than $40 million, paid for by electric and irrigation customers. The districts have requested a hearing to challenge this recommendation and filed two alternatives with a more reasonable cost, Wookey said. Scheuring called the FERC process "just another example of a statutory overlay on the California water system." "We simply cannot restore completely natural function to the river system without displacing the human economy," he said. Updates on the Don Pedro relicensing process may be found at www.donpedro-relicensing.com. Other active FERC licenses can be viewed at www.ferc.gov/industries/hydropower/gen-info/licensing.asp. *(Christine Souza is an assistant editor of Ag Alert. She may be contacted at csouza@cfbf.com) Permission for use is granted, however, credit must be made to the California Farm Bureau Federation when reprinting this item.*

(Renewing the old stuff.)

Corps of Engineers awards $321M for installation of 14 McNary Dam turbines

Mar 22, 2018, nbcrightnow.com

WALLA WALLA, WA – The U.S. Army Corps of Engineers' Walla Walla District on Wednesday awarded a $321.3 million contract to Alstom Renewable US LLC to design, manufacture and install 14 turbines at the McNary Lock and Dam, near Umatilla, Oregon. This award culminates three years of research, planning, design and acquisition to replace the existing turbine runners and associated ancillary equipment. The goals of this re-capitalization and modernization effort include increasing: fish survival, hydraulic capacity, turbine efficiency operational flexibility and improving turbine operations reliability. McNary Dam, a multi-purpose project authorized by the Rivers and Harbors Act of 1945, was commissioned in 1954. The powerhouse consists of

fourteen 70,000-kilowatt hydroelectric generator units, providing 980-megawatts of powerhouse capacity. One megawatt serves approximately 700 homes. At full capacity, McNary's powerhouse can supply enough power for about 686,000 homes.

The 14 main unit turbines have been in operation for more than 62 years. They are projected to continue to operate on average for another seven years until the new turbines are manufactured and installed. This requirement is fully funded with non-appropriated funding provided by the Corps' partner and stakeholder, Bonneville Power Administration (BPA). Re-capitalization projects such the McNary turbines are a capital investment for the Administration, as they receive power sales revenue from the generation of power by the McNary hydropower facility. These revenues from McNary Dam range from $150 million to over $300 million per year depending upon rates and water flow, which equates to an average per unit revenue generation of just over $16 million per year.

"This Contract Award is a significant accomplishment for our district and the region," said Walla Walla District Commander Lt. Col. Damon Delarosa. "The re-capitalization effort at McNary Lock and Dam is one of my top priorities for 2018. The team responsible for reaching this milestone spanned multiple federal agencies; their professionalism and dedication were evident in all they have accomplished to date and I'm sure will continue as they begin the design efforts for the new turbines. Once completed, the improvements recognized from this project for reliability, operational flexibility and fish passage will be substantial and measurable. We look forward to working with Alstom Renewable Energy on this critical infrastructure effort in the coming months and years," he said. Alstom Renewable US LLC, a General Electric Company, is no stranger to hydropower modernization, bringing worldwide experience in the design, manufacture and installation of hydropower turbines. Their most recent work in the Pacific Northwest includes replacing turbine runners at Chief Joseph Dam for the U.S. Army Corps of Engineers, which is nearing completion.

"Alstom will work collaboratively with the Corps of Engineers through an iterative design process to develop the new runners and associated equipment," said Corps Project Manager Shawn Nelson. "Engineers and biologists from the Walla Walla District, the Corps of Engineer's Hydro-Electric Design Center (HDC) in Portland, Oregon, and the Corps's Engineer Research and Development Center (ERDC) in Vicksburg, Mississippi, will support this design process, progressing from computer-based models to physical modeling. After the design is completed, the turbine components will be manufactured and then installed two units at a time over the course of seven to eight years. The contract is expected to be completed in approximately 14 years," he said.

(Negative on hydro.)

Letter to the editor: Large-scale hydropower not clean or renewable

Re: the March 19 Maine Voices column about Central Maine Power's push for transmission lines through Maine to bring Canadian hydropower to Massachusetts: An issue that troubles me is the statement (often repeated in the Portland Press Herald) that Canadian hydropower is clean, renewable energy. Large-scale hydropower cannot truly be considered clean and renewable energy.

First of all, researchers have found that large-scale hydro floods huge areas of the best land in the northern climate – river valleys that are home to the most diverse plant and animal life in the region. The resulting reservoirs are not the same as natural rivers or lakes. They become contaminated with methylmercury, poisoning the fish and any who eat them. Methane gas is emitted from the decomposition of flooded plant life. And because of silt buildup, the dams may not last more than several decades.

Secondly, these dams are being built in the territories of indigenous Cree, Innu and Inuit peoples, with a destructive effect on their culture, lifestyle, food sources, hunting and fishing, burial sites and, ultimately, their sovereignty. The La Grande project was built in the 1970s without any consultation with the Cree or Inuit; later projects have been and still are initiated without giving any true choice to the people who have lived along these rivers for millenniums. We know that Gov. LePage is not interested in renewable energy. Nor is he concerned with the rights and sovereignty of indigenous peoples, as witnessed in this government's actions toward the Penobscot people and their river. But the rest of us who live in Maine must be better than that. We should support true renewable energy, and also support the human rights of indigenous people both here and in the lands to the north. *Rev. Myke Johnson, Portland, Maine*

(More negative hydro comments from Maine..)

A call for responsible hydropower

March 23, 2018, Letters to the editor, ellsworthamerican.com

Dear Editor:

Dear FERC committee members:
I live along Lake Leonard in Ellsworth, Maine, and we have family who live just north on Graham Lake in Mariaville. I wish to voice my opinion on relicensing the Lake Leonard and Graham Lake dams. Hydropower is clean energy, but it does not come free of costs to our community or our natural heritage. Turbid waters from lake level fluctuations and associated low oxygen levels and shoreline erosion, along with mortality of alewives, blue backs and eels as they are killed by the turbines, together mar this dam's record and put it in violation of federal law. And these costs are not just limited to the destruction of aquatic life; they extend financially to the residents who live and work along the shores of Graham Lake. Homeowners who have invested their retirement into properties are losing value, and literally losing property to erosion. While it is not known how much impact the recreation industry suffers during low water, I think we all know it is hard to generate revenue from a muddy stream.

But these losses may not even compare to the commercial ground fishery that has been devastated by the loss of river herring from dams over the last two centuries. It has recently been shown that cod stocks once relied on the river herring as a primary food source. As dams became prominent during the 19th and 20th centuries, the cod were starved of food, first by stopping the upstream passage of river herring to spawn, and then by killing the adults and juveniles as they made their way to the coastal waters when the hydro dams replaced the mills. This was overlooked as the cod were being overfished, but when the cod fishery was closed and their stocks didn't return, the penny dropped for Ted Ames, who presented his proposal in the culmination of a MacArthur Fellowship in 2010. What was once a fringe theory has now become dogma among marine fisheries experts; the river herring fed the cod! Since then we have seen improvements in groundfish stocks at the mouth of the Penobscot following the removal of several dams. Preliminary survey results indicate an increase in cod and halibut, and stomach contents reveal they are indeed eating alewives. But the Union River still poses a serious problem to the unknown number of fish that do not pass down stream alive and never contribute to the food chain. This is bad husbandry!

Furthermore, Bigelow Labs, in East Boothbay, has been conducting a long-term ocean chemistry study (17 years and still going) looking at the carbon and acidification processes in the Gulf of Maine. This study has shown that increasing particulates in the water column caused by riverbank erosion has reduced overall light penetration in the water. This has reduced the actual growth rate of phytoplankton by over 80 percent during the course of their study. The equivalent would be like planting your garden in a dense forest. A reduction in phytoplankton growth reduces the growth of the tiny organisms that feed on them, the zooplankton. Phytoplankton and zooplankton are not simply important; they are critical building blocks, foundations of ocean productivity! While siltation from the Union River on its own could not cause such a notable

reduction, it is the most turbid river in the state and it is contributing to a terrifying problem. We must do better.

I can find my way to supporting hydropower, but only when it does not interfere with the lifestyles of local communities and our natural heritage. Therefore, I ask you to consider relicensing the dam only under the clear expectation that Black Bear Energy increase upstream fish transport, eliminate downstream fish mortality and reduce turbidity flowing from Graham Lake to acceptable levels that support a healthy lake and river. Thank you for your consideration. *C. Toby Stephenson, USMM*

(Yeah, let's go back to before ECPA.)

R Street policy brief: Break the regulatory dam to realize hydropower's full potential

March 26, 2018, byDavid Bahr, Communications Director, rstreet.org

Washington, DC (March 26) – The proper role of regulations in the electricity market is to enable competition for generation services. However, many existing regulations actually suppress competition from energy storage resources and undervalue grid services where these resources have a comparative advantage. This is particularly constraining on hydropower, which makes up the majority of storage resources and holds large untapped potential. In a new policy brief, R Street Electricity Policy Manager and Senior Fellow, Devin Hartman examines hydropower as a wholesale storage resource and makes the case for streamlining permitting processes, improving market access and ensuring market-based compensation. He goes on to argue that reforms such as these are essential to allow storage resources, such as hydropower, to compete on a level playing field and to drive voluntary innovation and deployment of cost-efficient resources. Despite hydropower's potential, its ability to participate as a storage resource faces unusually high artificial barriers to entry in wholesale power markets. According to the author, "these stem primarily from inadvertently discriminatory wholesale market rules and lengthy and ambiguous permitting processes. Considering the value of storage services is on the rise, reducing artificial barriers should have a potent effect on market outcomes." Given current bipartisan interest in hydropower at the federal level, now is the time to push for reforms that will unleash the full benefits of the most valuable form of energy storage today.

(Checking up on the other water storage.)

PG&E performs monthly snow survey to determine hydroelectric power generation

By Jeremy Linder, March 27th 2018, krcrtv.com

MINERAL, Calif. — Crews with PG&E traveled to Lassen Volcanic National Park for their monthly snow survey near Lake Helen Tuesday. Spokesman Paul Moreno said these measurements are vital in planing out power generation during the summer months. "The water we're standing on top of now will eventually run into the north fork of the Feather River. And from there it will run down into Lake Almanor, eventually through several power houses before reaching Lake Oroville," said Moreno. 66 power houses are located in California, the majority of which are located in the Northstate. Moreno said that's because the region has the largest rivers which allows the same water to run through multiple power houses before heading out to the Pacific Ocean. The measurements taken around April 1 are the most important because the snow pack is typically at it's peak. Moreno adds the snow water equivalent (SWE) helps to determine how much hydroelectric power they can generate.

During a dry year the company must juggle electricity resources like wind, solar, natural gas and biomass to make up the difference. Moreno explanied, "With more water this year we're

expecting some pretty good hydroelectric power production, especially during the peak periods of summer when demand is high." Snow surveys from PG&E are just a small fraction of this year's snow pack. The process is exactly the same as the surveys from the California Department of Water Resources. Combine those with the automated snow sensors scattered across the state and the picture becomes clearer. As of Tuesday the statewide average SWE was 58 percent of normal. The northern Sierra which includes the surveys from Lake Helen was 48 percent of normal. PG&E Hydrographer Ted Baker said in his opinion the Lake Helen site is the most difficult. "Because it is consistently the deepest," added Baker. During Tuesday's survey the snow depth averaged around 11 feet. That's about half of what the depth was last year but Baker said it was better than the survey from February. "The exposure to the sun right here, it will melt. When it snows it will melt down and make an ice layer and then you'll get more snow going on top of that. So you'll get multiple layers of ice that you have to bust through," said Baker.

(Oops! Too late!)

FERC Finds West Virginia Waived CWA Section 401 Permit Authority for Hydropower Projects

Blog Washington Energy Report, Troutman Sanders LLP, lexology.com, March 27 2018

On March 15, 2018, FERC denied the West Virginia Department of Environmental Protection's ("West Virginia DEP") and the West Virginia Division of Natural Resources' (collectively, "West Virginia") request for rehearing of FERC's issuance of original licenses for two hydroelectric projects to be constructed, owned, and operated by FFP Missouri 15, LLC and FFP Missouri 16, LLC (collectively, "FFP"). Specifically, FERC found that West Virginia waived its certification authority under section 401 of the Clean Water Act ("CWA") by failing to act on the application within one year of receipt. On February 27, 2014, FFP filed license applications for their Morgantown and Opekiksa Projects. While the Commission was reviewing the application, FFP submitted applications for CWA section 401 water quality certifications for each project from the West Virginia DEP. The West Virginia DEP received the applications on February 12, 2016 and issued section 401 water quality certifications on March 8, 2017. In licensing the Morgantown and Opekiska projects, Commission staff determined that by failing to act on FFP's applications within one year of receipt, West Virginia waived its section 401 authority to issue the certifications. As a result, the Commission did not include the West Virginia DEP's water quality condition in either license issued by FERC for the projects.

On October 27, 2017, in response to the Commission staff's determination, West Virginia; the City of Morgantown, West Virginia; and the Monongahela River Trails Conservancy requested rehearing. West Virginia argued that as the state, it has authority to administer section 401 of the CWA in West Virginia. Under section 401 of the CWA, if a state does not act on a request for a water quality certification within a reasonable period of time (not to exceed one year) after receipt of such request, the water quality certification requirements of section 401 are waived. However, West Virginia argued that the State of West Virginia's regulations, not FERC's hydropower regulations, determine when the one-year waiver period occurs. According to West Virginia, the West Virginia DEP determined on March 9, 2016 that FFP's application was complete and therefore had until March 9, 2017 to act on the application.

In denying the requests for rehearing, FERC interpreted the plain language of CWA section 401 and the Commission's hydropower regulations as requiring state agency action on an application within one year of receipt of the application. This decision reaffirmed its finding in a similar case involving the New York Department of Environmental Conversation (see March 20, 2018 version of the WER). Additionally, FERC stated that under the Federal Power Act, the Commission alone may determine whether or not to adopt state recommendations (even if the state failed to act within the required timeline). Here, Commission staff considered the conditions provided by the West Virginia DEP in water quality certification and decided not to include them. In particular, FERC found that the projects did not threaten the protection of fishing or recreational opportunities. Therefore, the Commission denied the rehearing requests and upheld its decision

to not include the water quality certification conditions in licensing the Morgantown and Opekiksa Projects.

Water:

(Some places have too much water. Water never comes where or when you need it, unless you have a dam to regulate it..)

The Latest: Storm brought much-needed rain to California

The Associated Press, March 23, 2018, sacbee.com

LOS ANGELES - The Latest on California storms (all times local):

2:30 p.m.
The storm that drenched California this week brought much-needed rain to the state, which has been slipping back into drought conditions due to a dry winter that only turned wet and snowy this month. Preliminary storm data Friday shows some stunning totals for the three-day storm, including more than 10 inches (25 centimeters) of rain at some locations in the Sierra Nevada and on the central coast, and 31 inches (79 centimeters) of snow at Tuolumne Meadows in the Sierra. In the agricultural Central Valley, farmers say the storm interrupted some harvests and will delay some planting, but that's outweighed by the benefit of adding more moisture to the soil.

11:45 a.m.
Safety officials are at the site of a small California dam that had threatened to fail under heavy rains. Spokesman Chris Orrock said Friday that state dam experts are inspecting Moccasin Dam, near Yosemite National Park in Tuolumne County. Operators are now draining the reservoir behind the weakened 60-foot (18-meter) high dam. Authorities evacuated about three dozen people Thursday when water neared the top of the dam. Officials also spotted water seeping through the front of the earthen dam.Authorities say the danger of immediate dam failure had passed by late Thursday. The 88-year-old dam is part of the Hetch Hetchy water system that supplies water to 2.7 million people in the San Francisco Bay Area.

7:07 a.m.
A storm that pounded California with heavy rain has moved on, leaving only a few stray showers in its wake. The storm swelled rivers, flooded streets and triggered water rescues statewide over three days but spared communities a repeat of the deadly debris flows that occurred during a January deluge. Forecasters said Friday that Southern California will see mostly benign weather for the coming week. But the break in precipitation will be brief for northern and eastern California. The first of two new weather systems will bring widespread rain and heavy snow in the mountains through the weekend.

12:04 a.m.
A powerful storm in California that swelled rivers, flooded streets and triggered water rescues throughout the state is on its last gasp. The three-day storm spared communities a repeat of the deadly debris flows following a deluge earlier this year. But it did dump record rainfall in some parts and unleashed flooding that led to dramatic rescues from Los Angeles in Southern California all the way to Folsom, some 400 miles (645 kilometers) to the north. In San Luis Obispo County in central California, rescuers reported pulling 10 people from the Salinas River on Thursday. All remaining flood warnings and watches were set to expire overnight Friday.

Other Stuff:

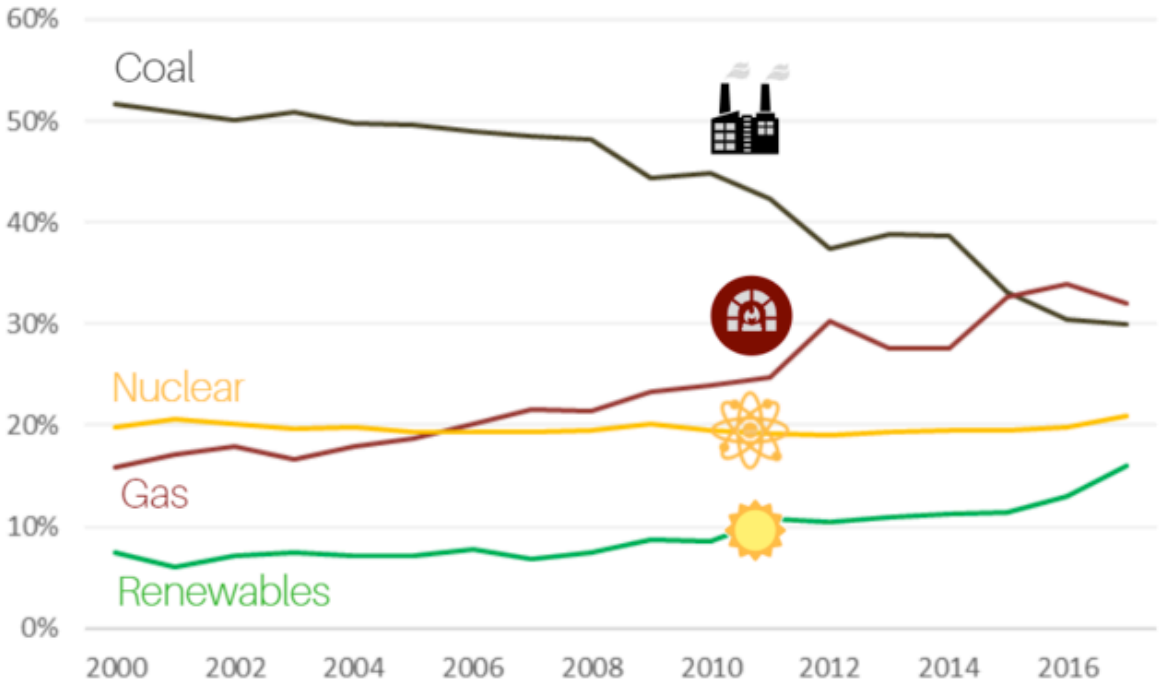
(Renewables by State.)

A State-By-State View Of U.S. Renewable Energy In 2017

Written by Amanda Levin, March 1, 2018, solarindustrymag.com

As part of its Electric Power Monthly series, the U.S. Energy Information Administration (EIA) released its year-end 2017 energy figures this week, detailing electricity production, use and costs at a state level. The year 2017 was another big one for wind and solar, with many leading states continuing to add to their clean energy portfolios and a few states getting into the game for the first time. Over the last few years, the U.S. has seen remarkable growth in clean, renewable energy like wind and solar power. In 2017, renewables – such as hydropower, wind, solar and geothermal energy – made up 16% of the electricity powering the nation's homes and businesses. This is almost double their contribution at the start of the decade. While this is positive progress, much more still needs to be done: A recent NRDC report concluded that the U.S. should generate at least 80% of its electricity from renewable resources by 2050 in order to meet the Paris Agreement's target of holding global warming to no more than a 2 degree increase. Without stronger policies in place, the most recent government forecast has America achieving only half that, or 40% from renewables, by 2050. However, there's reason to think that the forecast is overly conservative, as wind and solar continue to grow across the country, and states, cities and corporations continue to ramp up their climate and clean energy commitments.

U.S. Electricity Mix: 2000-2017



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%

At the end of 2016, wind became the largest source of renewable power capacity in the nation, overtaking hydropower. In 2017, the U.S. added another 6,250 MW of capacity, which is enough to power 2 million homes. While one may not think of Iowa, Kansas or Oklahoma as leaders on clean energy, these states actually have some of the cleanest power in the nation. The Midwest has some of the best wind resources in the country, and utilities, policymakers and U.S. businesses are taking advantage of this low-cost energy resource. Iowa's largest electric utility, MidAmerican, expects to be generating 85% of its electricity from wind by 2019. In Kansas, the utilities are on track to supply 50% of the state's power with wind by the beginning of 2019. 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. Texas alone hosts more than a quarter of all wind capacity in the country, and the state expects to add even more wind farms in the next four years before the expiration of the renewable tax credits. (In fact, Texas now has more wind power capacity than coal-fired capacity in the state).

Fastest Growth		
Rank		% wind growth year-over-year
#1	New Mexico	59%
#2	Missouri	46%
#3	Wisconsin	30%
#4	Vermont	25%
#5	Michigan	17%

While wind is still non-existent in certain parts of the country, it is making footholds in a number of states, including New Mexico and Missouri. In 2017, these five states saw the greatest growth in wind energy generation. And while wind power has historically been strongest in the Great Plains and Midwest regions, improvements in wind power technology – such as taller turbines – have allowed for more economic wind development in other parts of the country. Currently, nine states have no wind installed at all, including almost all of the Southeast. Some of these states, like Virginia, South Carolina and Georgia, have large offshore wind potential. The U.S. currently only has one offshore wind farm operating, but as costs fall for these offshore wind projects across the world, there is a growing interest by many states to support new offshore wind projects.

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%

Solar

The solar industry faced some significant setbacks in the last year. The threat of a solar import tariff loomed over the industry for most of the year (and Trump did impose tariffs on solar cell imports in January of this year). Given this market uncertainty, 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, shedding around 9,800 jobs last year after multiple years of double-digit growth. However, solar energy still enjoyed lots of bright spots in 2017. The U.S. Department of Energy officially hit its SunShot Goal of $1/W solar about three years early. Minnesota, which has seen a massive increase in community solar projects, saw almost a 50% increase in solar jobs in 2017. Utilities in the West have reported record-low costs for solar generation projects, including solar-plus-storage and smaller-scale projects. And businesses across the U.S. are still making new investments in solar energy to power their operations.

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, states that may currently find themselves at the bottom of the list can quickly turn things around. In 2016,

Mississippi was in the bottom five -but the state saw remarkable growth in 2017. Mississippi added over 160 MW of solar – or enough to power 25,000 homes every year. That is also a 25-fold increase in the state's solar capacity in just one year. While solar is cheapest in the sunniest places, like the Southwest or Southeast, we see solar growing across the country. Every state has at least 1 MW of solar operating as of today, though many could be adding much more.

The Upshot

Increasing renewable energy development, a switch to lower-carbon fuels and energy efficiency have helped the power sector slash its carbon pollution – the main contributor to climate change – over the last few years. And 2017 follows this trend. In 2016, emissions from the power sector fell to 25% compared with 2005 (the highest emissions year for the U.S.). In 2017, emissions fell by another 4%, down to 28% below 2005 levels. Clean energy is thriving in the U.S., but there is much more we can be doing. Leading states, cities and businesses have proven that clean energy is a smart investment for the economy, our pocketbooks and our climate. In the next few years, it will be up to them to continue to pursue the many clean energy opportunities and investments available. Hopefully, next year's EIA numbers will reflect such progress

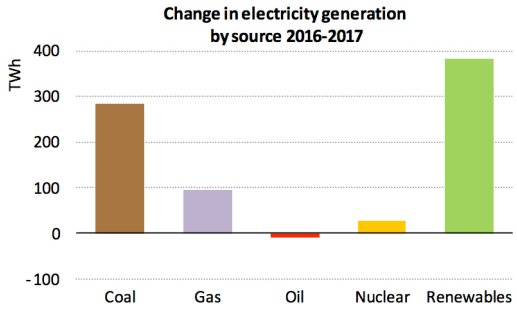
(Moving right along.)

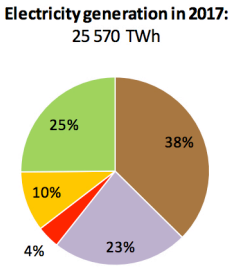
Renewables fastest growing energy source in 2017

22 March 2018, by Craig Richard, windpowermonthly.com

WORLDWIDE: Wind power accounted for the largest share of renewable growth last year as global energy demand grew by 2.1%. Renewables had the highest growth rate of any energy source in 2017, meeting a quarter of the world's energy demand growth. There was a 6.3% generation increase driven by an expansion of wind (accounting for 36% of the generation increase), solar PV (27%), hydropower (22%) and bioenergy (12%). Following a 380TWh increase in 2017, renewables now account for 25% of global electricity generation, according to the International Energy Agency (IEA). Hydropower (65%) remains the largest source of renewables-based electricity generation, according to the IEA, however. A figure is not given for other energy sources in the agency's Global Energy and CO2 Status Report, which was published this month.

However, despite this expansion, global energy-related carbon dioxide emissions reached an historic high of 32.5 gigatonnes, up by 1.4% in 2017, after three years of remaining flat, the IEA found. "The robust global economy pushed up energy demand last year, which was mostly met by fossil fuels, while renewables made impressive strides," said Fatih Birol, the IEA's executive director. "The significant growth in global energy-related carbon dioxide emissions in 2017 tells us that current efforts to combat climate change are far from sufficient."





Renewables expansion

China accounted for 40% of the combined growth in wind and solar PV, with a new record set in additional capacity and a reduced curtailment rate. The US, meanwhile, accounted for nearly

40% of the increase in hydropower, while output in the European Union fell by nearly 10%, the IEA found. In the European Union, wind set new records in both new overall capacity (15.6GW) and new offshore capacity (3.1GW). Global wind capacity, meanwhile, reached about 510GW, the IEA stated. This figure differs from the 539.6GW global capacity quoted by the Global Wind Energy Council (GWEC).

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